वार्षिक प्रतिवेदन
ANNUAL REPORT
2023

भाकृअनुप–कृषि प्रोद्यौगिकी अनुप्रयोग अनुसंधान संस्थान, क्षेत्र–9
ICAR-Agricultural Technology Application Research Institute, Zone IX
(Division of Agricultural Extension)

जबलपुर, मध्यप्रदेश–482004
Jabalpur, Madhya Pradesh – 482004

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Preface

I am delighted to present the 2023 annual report of ICAR-ATARI, Jabalpur. This year's report highlights the remarkable achievements of our KVKs in various domains. ICAR- ATARI Jabalpur, is responsible for coordinating and monitoring the application of technology and frontline extension programmes of KVKs in Zone IX, which includes the states of Madhya Pradesh and Chhattisgarh. Currently, there are 82 sanctioned KVKs in this zone, with 54 located in Madhya Pradesh and 28 in Chhattisgarh.

Our KVKs have assessed a record number of technologies this year, including several new and improved technologies. During 2023, KVKs assessed 999 technologies through 8,636 OFTs. Through our demonstration programmes, we conducted 31,824 frontline demonstrations in farmers' fields and successfully showcased new technologies to farmers helping them adopt modern practices that enhance productivity and sustainability. In terms of training, our KVKs have conducted numerous workshops and capacity-building sessions, equipping farmers with the knowledge and skills needed to implement advanced agricultural techniques. KVKs undertook 7562 training programmes covering more than 2.4 lakh participants including that include 1.83 lakh farmers and farm women, 25,046 rural youth and 11,153 extension functionaries. Our KVKs also produced over 15563 q of seed and 32.63 lakh planting material. These initiatives have not only improved farm productivity but also contributed to the socio-economic development of the farming communities. Skilling under ARYA project resulted in training of 2092 rural youth and establishing 349 enterprise units. The Farmer FIRST centers covered 2054.54 ha area, 2019 animals and 8572 farm families benefitted under the six modules.

Nutri-SMART Village (NSV) initiative to address malnutrition through nutrition-sensitive agriculture currently in 42 NSVs in Madhya Pradesh and 15 NSVs in Chhattisgarh demonstrated collaborative efforts in capacity-building and awareness programmes to improve nutrition literacy and the availability of nutrient-rich foods. Additionally, the outscaling of the Natural Farming Project is underway to promote an agroecology-based diversified farming system that integrates crops, trees and livestock enhancing functional biodiversity. New initiatives such as Agri-Drone technology demonstrations and the Kisan Sarathi programme are also being implemented in the zone. Under *Viksit Bharat Sankalp Yatra* KVKs in Zone covered 15368 Gram Panchayat with participation 41.60 lakh people.

The achievements of this year underscore the critical role of KVKs in transforming agriculture in Madhya Pradesh and Chhattisgarh. We remain committed to our mission of advancing agricultural practices and supporting our farmers through continuous innovation, collaboration and dedication. We extend our heartfelt appreciation to the Vice-Chancellors and Directors of Extension of SAUs in our zone, as well as the Directors of ICAR institutes for their collaboration with us for their invaluable technological support to the KVKs. We are profoundly grateful to Dr. Himanshu Pathak, Secretary DARE and Director General of ICAR and Dr. U.S. Gautam, DDG (AE), for their unwavering support, guidance and encouragement. I commend all the Senior Scientists, Heads, and staff of the KVKs in the Zone for their efforts and thank my colleagues at ATARI for their hard work in compiling the Annual Report. We remain committed to collaborating with farmers and other stakeholders to strengthen our efforts in nutrition sensitive agriculture, profitable agriculture and sustainable livelihood for all.

Date: 12/07/2024

(S.R.K. Singh)
Director

सारांश

भा.कृ.अ.प.–कृषि प्रौद्योगिकी अनुप्रयोग अनुसंधान संस्थान, क्षेत्र–9 के अन्तर्गत 82 कृषि विज्ञान केन्द्र, मध्यप्रदेश एवं छत्तीसगढ़ राज्यों में स्थित है ।

प्रक्षेत्र परीक्षण के द्वारा तकनीक आंकलन

विभिन्न कृषि विज्ञान केन्द्रों द्वारा 999 प्रक्षेत्र आंकलन, 8636 परीक्षण के द्वारा आयोजित किये गये। मध्यप्रदेश द्वारा 759 एवं छत्तीसगढ़ द्वारा 240 प्रक्षेत्र परीक्षणों का आयोजन किया गया। कुल प्रक्षेत्र परीक्षण 999 में से 717 प्रक्षेत्र परीक्षण फसल पर व शेष 282 अन्य उद्यमों पर रहा।

अंग्रिम पंक्ति प्रदर्शन

प्रगति वर्ष के दौरान, कुल 823 अंग्रिम पंक्ति प्रदर्शन विभिन्न फसलों (दलहन, तिलहन, धन धान्य फसलें, सब्जी फसल, मोटे अनाज) पर आयोजित हुए। कुल प्रदर्शन में 13041.49 हे. क्षेत्र 31824 किसानों के प्रक्षेत्र पर आयोजित हुए।

प्रशिक्षण एवम् क्षमता संवहन

कुल आयोजित 7562 प्रशिक्षणों में 240450 लाभार्थीयों (कृषक, महिलायें, ग्रामीण युवक, प्रसार कर्मी) ने भाग लिया। भारतीय कृषि अनुसंधान परिषद् के विभिन्न संस्थाओं सहयोग से मिलकर कृषि तकनीक अनुप्रयोग अनुसंधान संस्थान, जबलपुर द्वारा आयोजित 38 क्षमता संवहन कार्यक्रम से मध्यप्रदेश एवं छत्तीसगढ़ के कृषि विज्ञान केन्द्रों के विषय वस्तु विशेषज्ञ लाभान्वित हुए।

प्रसार गतिविधियाँ

वर्ष 2023 में कुल 144984 प्रसार गतिविधियों (प्रक्षेत्र दिवस, किसान मेला, कृषक सलाहकारी सेवाएं, प्रदर्शनी, फिल्म शो आदि) के माध्यम से विभिन्न तकनीक का प्रसार कर 3643448 किसान एवं प्रसार कर्मी लाभान्वित हुए।

बीजोत्पादन, रोपण सामग्री, जैव उत्पाद एवं पशु उपयोगी सामग्री का उत्पादन

कृषि विज्ञान केन्द्रों द्वारा 15563.19 क्विंटल बीज, 32.63 लाख रोपण सामग्री (धन–धान्य फसलें, दलहन, तिलहन, सब्जी, औषधीय पौधे, फलदार पौधे) का उत्पादन किया गया। कृषि विज्ञान केन्द्रों द्वारा 1402.84 क्विंटल जैव उत्पाद एवं 1979897 पशु उपयोगी सामग्री का भी उत्पादन किया गया।

मृदा, जल एवं पौधों का परीक्षण

क्षेत्र के कृषि विज्ञान केन्द्रों द्वारा किए गए 28251 मृदा एवं 103 जल नमूनों के परीक्षण से 42829 किसान एवं 2153 गांव लाभान्वित हुए।

वैज्ञानिक सलाहकार समिति की बैठक

वर्ष 2023 में कुल 117 वैज्ञानिक सलाहकार समिति की बैठकों का आयोजन किया गया। इनमें से म.प्र. के 17 कृषि विज्ञान केन्द्रों द्वारा वर्ष में एक बार, 31 कृषि विज्ञान केन्द्रों द्वारा वर्ष में दो बार एवं 04 कृषि विज्ञान केन्द्रों द्वारा वर्ष में चार बार उक्त बैठक आयोजित की गई। छत्तीसगढ़ के 26 कृषि विज्ञान केन्द्रों द्वारा वर्ष में एक बार उक्त बैठक आयोजित की गई।

एटिक वार्षिक प्रगति प्रतिवेदन

अटारी जबलपुर के अधीन 4 एटिक संस्थान हैं। वर्ष में 18773 कृषकों ने एटिक में भ्रमण किया एवं तकनीकी सूचनाओं से 9545 कृषक लाभान्वित हुए। प्रकाशन के अन्तर्गत 43700 प्रकाशित प्रतियां विक्रय कर कुल 19.72 लाख रुपये अर्जित हुए।

पुरस्कार एवं सम्मान

डॉ. एस. आर. के. सिंह, निदेशक, आईसीएआर –अटारी, जबलपुर को ऑनर ऑफ एक्सीलेंस अवार्ड और जे.पी. लीगन्स अवार्ड से सम्मानित किया गया। डॉ. ए.ए. राऊत और डॉ. हरीश एम.एन. को उनके शोध कार्य के लिए सर्वश्रेष्ठ पेपर प्रेजेंटेशन पुरस्कार मिला। डॉ. हरीश एम.एन. को इंडियन सोसायटी ऑफ एग्रोनॉमी से थीसिस बेस्ट ओरल पेपर प्रेजेंटेशन अवार्ड और बेस्ट पीएच.डी. पुरस्कार भी मिला। कबीरधाम जिले के गोद लिए गए किसान श्री रूपेंद्र जायसवाल को प्रतिष्ठित डिस्ट्रिक्ट मिलियनेयर फार्मर ऑफ इंडिया अवार्ड 2023 से सम्मानित किया गया। केवीके, बालोद के वरिष्ठ वैज्ञानिक और प्रमुख डॉ. के. आर. साहू को प्रतिष्ठित कृषि वैज्ञानिक पुरस्कार –2022 प्राप्त हुआ। डॉ. राजीव कुमार सिंह को प्रतिष्ठित सर्वश्रेष्ठ केवीके वैज्ञानिक पुरस्कार से सम्मानित किया गया। कृषि विज्ञान केंद्र, देवास की तकनीकी अधिकारी डॉ. सविता कुमारी को अखिल भारतीय विधिवत परिषद्, वाराणसी द्वारा प्रतिष्ठित कृषि रत्न पुरस्कार से सम्मानित किया गया।

कृषि विज्ञान केन्द्रों में आगन्तुको का आगमन

वर्ष 2023 में जोन–9 के कृषि विज्ञान केन्द्रों में 254315 आगन्तुको का आगमन हुआ, जिसमें कुल 241417 किसान, 11258 अधिकारीगण एवं 1640 गणमान्य व्यक्ति शामिल है।

Executive Summary

ICAR-Agricultural Technology Application Research Institute, Zone IX has 82 KVKs located in two Indian states viz., Madhya Pradesh and Chhattisgarh.

Technology Assessment through On-Farm Testing

During 2023 year, 999 technologies were assessed in the Zone through 8636 On-Farm Trials. The highest number of technologies were assessed in the state of Madhya Pradesh (759) followed by Chhattisgarh (240). Out of total 999 technologies assessed, 717 were on crops and remaining 282 technologies on enterprises.

Frontline Demonstrations

During 2023 year, 838 FLDs were conducted on crops and enterprise covering the total area 13041.49 ha. benefiting 31824 farmers.

Training and Capacity Building

During the year there was a significant increase in the number of training and participants. Total 7562 courses organized and benefitted 240450 participants (farmers and farm women, rural youth, extension personnel) and those sponsored from different agencies were benefitted. ICAR-ATARI, Jabalpur also organized 38 capacity building programmes in collaboration with ICAR institutes for technical upscaling of Subject Matter Specialists in the Zone.

Extension Activities

A total of 144984extension activities were organized in the form of field days, Farmers fair, Farm advisory services, Exhibition, Film show etc. for promoting the technologies in the region which benefited 3643448 farmers and extension personnel in the ICAR-ATARI, Zone-IX.

Seed, Planting Materials, Bio-Products and Livestock Material Production

KVKs of the Zone produced total 15563.19 q of seed and 32.63 lakhs of planting material of different crops (cereals, pulses, oilseeds and vegetables), medicinal plants, fruits, etc. and distributed among farmers. Besides, these KVKs of the Zone also produced 1402.84 q bio-products and 1979897livestock products at their farms.

Soil, Water and Plant Analysis

During year 2023, 28251 soil samples and 103 water samples were analyzed by KVKs of the Zone touching 42829 farmers of 2153 villages.

Technological backstopping

Technological backstopping were carried out through production of 120163 copies of technical literature, newsletters etc. of which 95429 were distributed among the farmers, in Panchayats as well as Line department officials.

Scientific Advisory Committee Meeting

In the Zone, total 117 Scientific Advisory Committee (SACs) meetings were conducted by KVKs. In MP, 17 KVK organized SAC meeting once, 31 KVKs Twice and 04 KVK conducted thrice during the reporting period. In Chhattisgarh, 26 KVKs organized SAC meeting once during the reporting period.

ATIC Progress

In the Zone IX, four ATICs are operational under ATARI, Jabalpur. In these ATICs there were 18773 footfalls during the year 2023. Technological information was provided to 9545 farmers. A total 43700 publications (print & electronic media) were sold and generated revenue of Rs. 19.72 lakh.

Awards and Recognitions

Dr. S.R.K. Singh, Director, ICAR-ATARI, Jabalpur bestowed with Honor of Excellence Award and J.P. Leagans Award. Dr. A.A. Raut and Dr. Harish M.N. got Best Paper Presentation Award for their research work. Dr. Harish M.N. also got Best Oral Paper Presentation Award and Best Ph.D. Thesis Award from Indian Society of Agronomy. Shri Rupendra Jaiswal, an adopted farmer from Kabirdham District, was honored with the prestigious District Millionaire Farmer of India Award 2023. Dr. KR Sahu, Senior Scientist and Head of KVK, Balod, received the prestigious Agricultural Scientist Award-2022. Dr. Rajiv Kumar Singh was honored with the prestigious Best KVK Scientist Award. Dr. Savita Kumari, Technical Officer at Krishi Vigyan Kendra, Dewas, was honored with the prestigious Krishi Ratna Award by Akhil Bhartiya Vidhwat Parishad, Varanasi.

Footfalls in KVKs

In the KVKs of Zone IX, there was 254315 footfalls (241417 farmers, 11258 officials and 1640 dignitaries/VIPs) during 2023.

CONTENTS

1. Introduction

ICAR-Agricultural Technology Application Research Institute (ATARI) was originally established as Zonal Coordinating Unit in the premises of Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur, Madhya Pradesh by ICAR on September 11th, 1979, upgraded to Zonal Project Directorate (ZPD), Zone-VII in March 2009 and was remaned to ATARI, Zone-IX in the year 2015. The Institute coordinates monitors and evaluates the mandated activities of 82 KVKs spread across two States - Madhya Pradesh and Chhattisgarh.

Major activities of ATARI

- Formulation, implementation, monitoring and evaluation of programmes organized by Krishi Vigyan Kendras
- Coordination among project related work of various agencies such as State Agricultural Universities (SAUs), ICAR Institutes, Voluntary agencies and Development departments
- Serve as feedback point for research and extension systems
- Maintain liaison with research and extension institutions
- Coordinate agri-based schemes for successful implementation and better convergence with State/Central Government departments

KVKs in ATARI, Jabalpur

The Institute monitors the activities of 82 KVKs in the two states namely Madhya Pradesh and Chhattisgarh.

Table 1.1: KVKs across the two states in Zone IX

State	No of Districts	No. of KVKs					
		SAU	VU	CU	NGO	ICAR	Total
Chhattisgarh	28	27	01	0	0	0	28
Madhya Pradesh	52	44	0	01	08	01	54
Total	**80**	**71**	**01**	**01**	**08**	**01**	**82**

SAU - State Agricultural University; **VU**- Veterinary University, **CU**- Central University, **NGO** - Non-Governmental Organization; **ICAR** - Indian Council of Agricultural Research.

Krishi Vigyan Kendra

Realizing the role and importance of improved technology in agriculture development for increasing food and nutritional security, Indian Council of Agricultural Research made an institutional innovation in the form of KVK. It was also envisaged that technology assessed by the KVK will be used a source for the line departments and act as catalysts to fasten the technology transfer system for better delivery to the farming community. For proper functioning, major emphasis was given to the strengthening of physical infrastructure and human resource development in the KVKs. The name of the host institution managing the KVKs is given in Table 1.2.

Table 1.2: Institutional set-up of KVKs under ATARI, Zone IX.

Host Institution	No. of KVKs
A. Madhya Pradesh	**54**
Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur	22
Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya, Gwalior	22
Indira Gandhi National Tribal University, Amarkantak	1
ICAR-Central Institute of Agricultural Engineering, Bhopal	1
Deen Dayal Research Institute, Chitrakoot, Satna	1
Kasturba Gandhi National Memorial Trust, Indore	1
Lokmata Devi Ahilyabai Holkar Social National Mission, Burhanpur	1
Kalukheda Shikhcha Samiti, Jaora, Ratlam	1
Deen Dayal Krishi Vikas Awam Anusandhan Samiti (DKVAAS) Bhopal	1
Centre for Rural Development and Environment, Sehore	1
Bhausahab Bhuskute Smriti Lok Nyas Sansthan, Bankhedi, Narmadapuram	1
KVK, Vidisha*	1
B. Chhattisgarh	**28**
Indira Gandhi Krishi Vishwa Vidyalaya, Raipur	27
Dau Shri Vasudev Chandrakar Kamdhenu Vishwavidyalaya, Durg	1

***KVK Vidisha is in the process of reopening.**

Mandates of KVK

Technology Assessment and Demonstration for its Application and Capacity Development.

Activities of KVK

- On-farm testing to identify the location-specific technologies in various farming systems
- Frontline demonstrations (FLDs) to establish production potentials of newly released technologies on farmers' fields and provide feedback.
- Training of farmers and farm women to update their knowledge and skills in modern agricultural technologies and training of extension personnel to orient them in the frontier areas of technology development.
- Work as knowledge and resource center of agricultural technologies for supporting initiatives of public, private and voluntary sectors for improving the agricultural economy of the district.
- Create awareness about frontier technologies through various extension activities like Farmer fairs, Field days, Strategic campaigns, Ex-trainees meet, etc.
- Seed and planting materials production for making available to the farmers.

Staff Position

The current staff position in KVKs of Zone-IX is given in Table 1.3. Out of the total posts, 61.59 per cent are filled while the remaining 38.41 per cent are lying vacant. The percentage of vacant posts is comparatively higher in case of technical and administrative categories.

Table1.3. Staff position in KVKs under ATARI, Jabalpur

State	No. of KVKs	Senior Sci. & head (1)		SMS (6)		PA (3)		Admn. (6)		Total (16)	
		Sanc.	Filled	Sanc.	Filled	Sanc.	Filled	Sanc.	Filled	Sanc.	Filled
Madhya Pradesh	54	54	39	324	194	162	113	324	161	864	507
Chhattisgarh	28	28	13	168	132	84	63	168	93	448	301
Total	**82**	**82**	**52**	**492**	**326**	**246**	**176**	**492**	**254**	**1312**	**808**

Budgetary Provision

The detail of the budgetary provision of KVKs under Zone-IX, Jabalpur is given in Table 1.4.

Table 1.4: Budgetary provision of KVKs and ICAR- ATARI, Zone IX (Rs. in lakh)

S. No.	States & Institute	Rs. in lakh		
		Pre-revised Estimate	Revised Estimate	Total Release/ Expenditure
1	Madhya Pradesh	10078.51	9196.61	9196.61
2	Chhattisgarh	4142.22	4110.70	4110.70
3	ATARI, Zone IX	535.17	232.55	232.13
Total		**14755.9**	**13539.86**	**13539.44**

Agro-climatic Zones (ACZ) in Zone-IX, Jabalpur

There are 80 rural districts under the jurisdiction of Zone-IX, Jabalpur, out of which 82 KVKs covered these districts. The coverage of KVKs under different agro-climatic zones is given in Table 1.5.

Table 1.5: Agro-climatic Zones in ATARI, Jabalpur

State	Agroclimatic Zones (ACZ)	KVKs	No. of KVKs
M. P.	Chhattisgarh Plains	Balaghat	01
	North Hills of Chhattisgarh	Anuppur, Dindori, Mandla, Shahdol, Umaria	05
	Bundelkhand Region	Chattarpur, Datia, Tikamgarh	03
	Gird Zone	Ashoknagar, Bhind (Lahar), Guna, Gwalior, Morena, Shivpuri, Sheopur	07
	Kymore Plateau and Satpura Hills	Jabalpur, Katni, Panna, Rewa, Satna, Sidhi, Singarauli, Seoni	08
	Jhabua Hills	Alirajpur, Jhabua	02
	Malwa Plateau	Agar Malwa, Dhar, Dhar-II, Dewas, Indore Neemach, Mandsaur, Ratlam, Rajgarh, Shajapur, Ujjain	11
	Nimar Valley	Badwani, Burhanpur, Khandwa, Khargone,	04
	Satpura Plateau	Betul, Chhindwara, Chhindwara-II	03
	Vindhya Plateau	Bhopal, Damoh, Raisen, Sehore, Sagar, Sagar-II, Vidisha	07
	Central Narmada Valley	Narsinghpur, Narmadapuram*(Bankhedi), Harda	03
Total	**11 ACZs**		**54**
CG	Chhattisgarh Plains	Bilaspur, Bemetra, Balod Baloda Bazar (Bhatapara), Dhamtari, Durg, Durg-II, Gariyaband, Janjgir-Champa, Korba, Kanker, Kabirdham, Mahasamund,	17

State	Agroclimatic Zones (ACZ)	KVKs	No. of KVKs
		Mungeli, Raipur, Raigarh, Rajnandgaon,	
	North Hills of Chhattisgarh	Ambikapur (Surguja I), Balrampur, Jashpur, Korea, Surguja (II) (Mainpat).	05
	Bastar Plateau	Bastar, Bijapur, Dantewada, Narayanpur, Sukma,	06
Total	**3 ACZs**		**28**

*New name of Hoshangabad district.

Thrust Areas of the KVKs under Zone-IX, Jabalpur

Nine broad thrust areas identified for the KVKs under ATARI-IX are:

- Sustainable production system through location-specific assessment and demonstrations of technology.
- Resource conservation through rain water harvesting, in-situ moisture, soil and water conservation including sustainable farm mechanization.
- Development and promotion of crop/enterprise diversification and alternate land use system.
- Integrated pest and disease management for cost reduction and eco-friendly environment through supporting practices.
- Promotion of rural entrepreneurship through livestock, goatery, poultry, fishery, mushroom, lac, bee-keeping etc. by production, processing, value addition and marketing for additional income generation.
- Empowerment of farm women and rural youth through income generating activities and drudgery reduction.
- Alternate sustainable livelihood support system in rural areas for marginal and small farmers, landless laborers and farm women to check migration.
- Promoting climate resilient agriculture for sustaining rainfed farming.
- Promotion of Nutrition Sensitive Agriculture through Nutri-Smart Villages.

2. Technology Assessment through On-Farm Testing

The claimed superiority of location-specific technologies were tested by KVKs through On-Farm Testing (OFTs) and the numbers of technologies tested as well as trials are given in below mentioned tables. On overall basis, total 999 technologies were tested in the zone through 8636 different trials (Table 2.1, 2.2, 2.3) of which 717 technologies were on crops, 282 on different enterprises like livestock, fishery, mushroom, farm mechanization, women empowerment aspects, etc . The highest number of technologies were tested in the state of Madhya Pradesh (877) followed by Chhattisgarh (314) as the number of KVKs are also in the same order.

Table 2.1: State-wise technology assessed during 2023

State	No. of technology assessed	No. of Trials
Chhattisgarh	237	1268
Chhattisgarh (ICT)	3	140
Total	**240**	**1408**
Madhya Pradesh	704	5014
Madhya Pradesh (ICT)	55	2214
Total	**759**	**7228**
Grand Total	**999**	**8636**

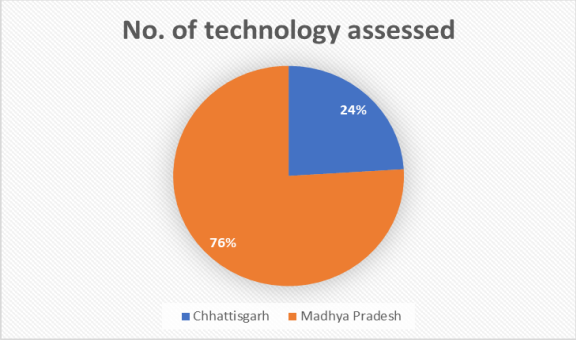

Fig.1: No. of technology assessed by KVK's

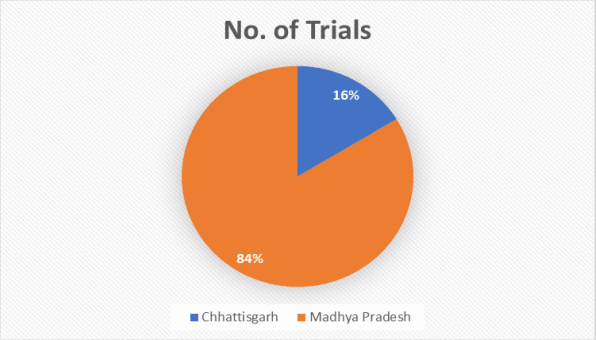

Fig.2: No. of trials conducted by KVK's

Table 2.2: Category-wise OFTs conducted on crops

Crop Category	Number of technologies assessed			Number of trials		
	CG	MP	Total	CG	MP	Total
Agro-forestry	-	1	1	-	5	5
Cash	4	8	12	22	50	72
Cereal	66	150	216	373	1022	1395
Fiber	-	4	4	-	26	26
Flower	2	6	8	16	40	56
Fodder	-	1	1	-	10	10
Fruits	3	16	19	10	102	112
Millets	5	19	24	24	116	140
Oilseed	13	102	115	67	699	766
Other	1	4	5	5	26	31
Pulses	23	98	121	130	650	780
Spices	5	38	43	19	277	296
Vegetable	46	102	148	242	737	979
Grand Total	**168**	**549**	**717**	**908**	**3760**	**4668**

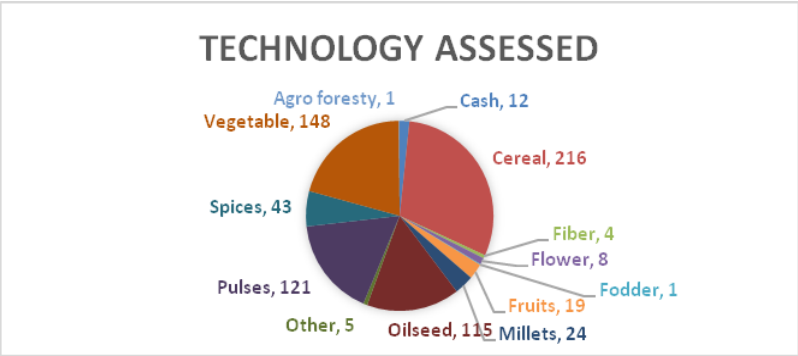

Fig.3: Category wise Technology assessed on crops

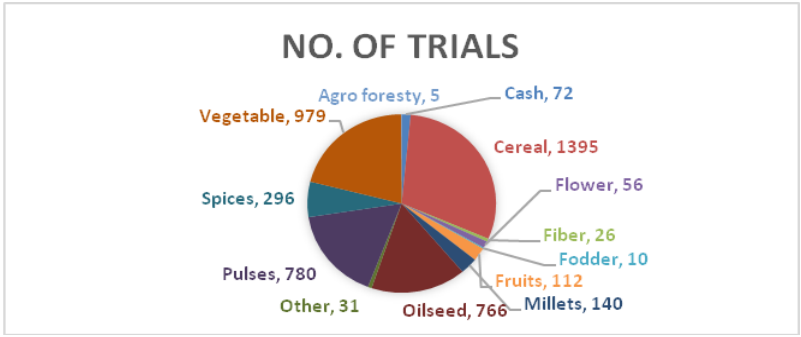

Fig.4: Category wise OFTs conducted on crops

Table 2.3: Thematic area wise OFTs conducted on crops

Thematic Area	Number of technologies Assessed			No. of trials		
	CG	MP	Total	CG	MP	Total
Crop Diversification	7	50	57	30	338	368
Cropping System	1	4	5	5	27	32
Integrated Crop Management	18	38	56	103	280	383
Integrated Disease Management	17	51	68	82	343	425
Integrated Farming system	17	47	64	106	293	399
Integrated Nutrient Management	22	73	95	125	519	644
Integrated Pest Management	24	79	103	126	560	686
Integrated Weed Management	13	21	34	77	172	249
Resource Conservation Technology	10	18	28	54	162	216
Soil Fertility Management	8	41	49	43	236	279
Storage Technique	-	2	2	-	20	20
Varietal Evaluation	31	125	156	157	810	967
Grand Total	**168**	**549**	**717**	**908**	**3760**	**4668**

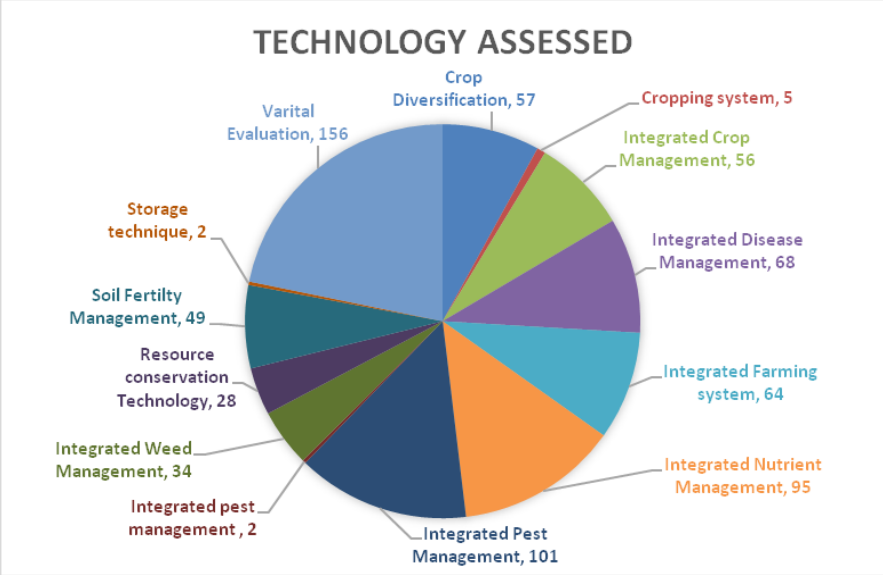

Fig.5: Thematic area-wise Technology assessed on crops

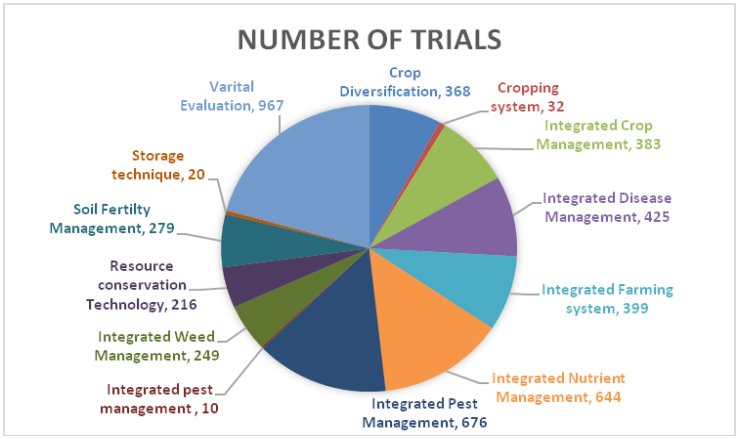

Fig.6: Thematic area-wise OFTs conducted on crops

Table 2.4: Thematic area-wise number of technologies assessed on enterprises

Thematic Area	No. of technology assessed			No of Trials		
	CG	MP	Total	CG	MP	Total
Animal Disease Management	3	8	11	12	72	84
Animal Feed / Fodder Management	1	8	9	5	81	86
Animal Health Management	1	1	2	30	5	35
Animal Nutrition Management	1	16	17	4	120	124
Drudgery reduction	-	6	6	-	52	52
Farm Mechanization	21	12	33	90	85	175
Fingerling Production in Seasonal Ponds	1	-	1	5	-	5
Fish Production & Management	10	5	15	45	19	64
Fish Seed Production	1	-	1	5	-	5
Fish-cum-Duck Farming	1	-	1	5	-	5
Income generation	2	23	25	9	166	175
Integrated Farming System	-	1	1	-	3	3
Livestock Production Management	5	8	13	23	65	88
Nutritional Security	5	44	49	50	315	365

Post Harvest Management	4	-	4	17	-	17
Poultry Production and management	5	5	10	24	129	153
Resource Conservation Technology	5	11	16	22	92	114
Small Farm Implements	1	-	1	5	-	5
Spawn to fry production	1	-	1	5	-	5
Value addition	1	7	8	4	50	54
Information & Communication Technology (ICT)	3	55	58	140	2214	2354
Grand Total	**72**	**210**	**282**	**500**	**3468**	**3968**

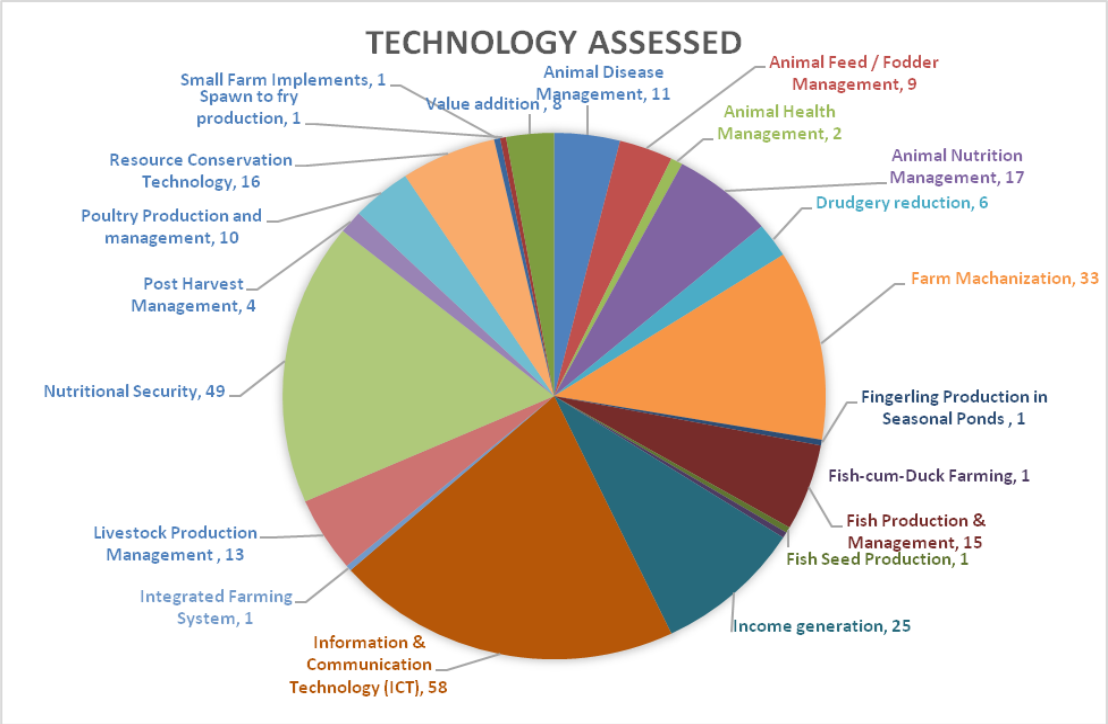

Fig.7: Thematic area-wise OFTs conducted on enterprises

TECHNOLOGIES ASSESSED FOR MAJOR CROPS/ENTERPRISES

Varietal Evaluation

Varietal Assessment of Paddy

Problem Identified- Low yield due to use of old rice variety

Technology Assessed- Assessment of paddy improved variety JR-206

The use of old varieties with low potential is one of the major factors responsible for the low productivity of paddy in the farmer's field. Keeping this in view KVK Sidhi and KVK Raisen conducted on-farm trials to assess the performance of paddy variety JR-206. The results revealed that JR-206 recorded 31.98% higher yield and additional net income of Rs. 25961/ha over MTU 1010.

Table 2.5: Performance of JR-206 variety of Paddy

Details	No. of trials	Yield (q/ha)	Net Return (Rs/ha)	B:C Ratio
Paddy (MTU 1010) (Farmers' practice) T_1	10	33.35	51361	2.82
Paddy (JR-206) (Recommended practice) T_2		44.02	77322	3.24

Improved variety of Paddy JR-206

Plant Protection

Integrated Pest Management in Paddy

Integrated Pest Management of Panicle Mite in Paddy

Problem Identified: Low yield due to attack of *panicle mite* leading to partially filled grains which results in grain discoloration.

Technology Assessed: Assessment of *panicle mite* management using Diafenthiuron 50% WP@1.5g/lit + Propiconazole 25 EC @ 1ml/lit in Paddy

The panicle mite (*Steneotarsonemus spinki*) is the most important and destructive mite (pest) attacking rice crop. During the reproductive stage of the plant, panicle mite feeds on the reproductive parts of the flowers resulting in grain sterility and is also a vector of pathogenic fungi like *Fusarium moniliformae, Helminthosporium oryzae* etc. It also migrates to the developing grains in the milking stage causes spikelets sterility and partially filled and unfilled grains which results in grain discoloration. In recent years, the panicle mite has become a significant problem in rice-growing areas. The farmers do not have awareness about proper and timely insecticide management aspects of the panicle mite. Looking at the problem, KVKs of Durg, Dhamtari, Janjgir-Champa and Raigarh from Chhattisgarh conducted 20 trials for assessment of *panicle Mite* management in Paddy. The results indicate that percentage discoloration due to *panicle mite* was reduced by 64.5% and 32.44 % in recommended technology Diafenthiuron 50% WP@1.5g/lit + Propiconazole 25 EC @1ml/liter at booting and panicle initiation stages and Fenpyroxymate 5EC @ 300 ml/ha + Propiconazole 25EC @ 300 ml/haat panicle initiation and panicle emergence stage, respectively over farmer's practice. The net return was also increased by Rs. 125286 and Rs. 122000 in assed technology T_2 and T_3, respectively over Farmer's practice i.e. Rs 106241 (No use of insecticide)

Table 2.6: Performance of insecticides for the management of Panicle mite in Paddy

Detail of Technology	No. of trials	Yield (q/ha)	Grain discoloration (%)	Net Return (Rs/ha)	B:C Ratio
No use of any acaricide for rice Panicle mite (T_1)	20	39.31	33.6	45074.30	3.26
Diafenthiuron 50% WP @ 1.5g/lit + Propiconazole 25 EC @ 1ml/liter (T_2)		44.92	11.9	52103.90	3.89
Fenpyroxymate 5 EC @ 300 ml/ha + Propiconazole 25 EC @ 300 ml/ha (T_3)		42.13	22.7	57457.35	3.48

Integrated Pest Management in Paddy

Integrated Disease Management in Paddy

Integrated Blast Disease Management in Paddy

Problem identified: Low yield due to infection of leaf and panicle area which reduces the grain filling and causes yield reduction

Technology Assessed: Assessment of blast disease management in rice

Paddy blast caused by a fungus *Magnaporthe oryzae* is the most important disease of paddy. The disease can affect plants at all growth stages and all aerial parts of the plant leaves, neck, nodes and seed. Leaf and neck infections are more severe and may cause heavy damage to the crop. The farmers are not aware of integrated disease management of the blast disease of paddy. Looking at the problem, two KVKs Mungeli and Bhatapara from Chhattisgarh conducted 12 trials for the assessment of management of blast disease in Paddy. The results indicated that the percentage of disease severity due to blast was reduced by 76.4% and 54.1 % in assessed technology, seed treatment with Tricyclazole @ 2 g/kg, foliar application of Tricyclazole 0.1% at tillering stage (T_2) and only foliar application of Tebuconazole 50% + Trifloxystorbin 25% @ 1g/lit (T_3), respectively over seed treatment with Mancozeb + Carbendazim@1g/lit (Farmer's practice-T_1). The net return was Rs. 97920 and Rs. 94050/ha in assessed technology T_2 and T_3, respectively over farmers practice i.e. Rs. 69294/ha.

Table 2.7: Performance of fungicide for the management of Blast disease in Paddy

Detail of Technology	No. of trials	Yield (q/ha)	Disease severity (%)	Net Return (Rs/ha)	B:C Ratio
Seed treatment Mancozeb + Carbendazim @1g/lit (Farmer's Practice-T_1)	12	39.0	58.33	69294	2.76
Seed Treatment with Tricyclazole @ 2 g/kg, foliar application of Tricyclazole 0.1% at tillering stage (T_2)		43.2	26.75	97920	3.72
Tebuconazole 50% + Trifloxystorbin 25%@ 1g/lit (T_3)		42.5	13.76	94050	3.15

Integrated Disease Management in Paddy

Soil Science

Integrated Nutrient Management in Paddy

Problem identified: Imbalance use of fertilizers, no use of nano urea as foliar spray

Technology Assessed: Assessment of nano urea as foliar application for nitrogen management in paddy

Among the cereals, paddy is an important crop of *kharif* season grown across the zone in low and midlands. Imbalanced/indiscriminate application of fertilizers is the major reason for the declining yield of paddy. Looking at the above problem, KVKs of Bhatapara, Durg-I and Mahasamund conducted 14 OFTs to assess the balance application of NPK @ 100:60:40 Kg/ha based on STV through inorganic fertilizers (T_2) and 50% of RDN and 100% PK (NPK @ 50:60:40 Kg/ha based on STV) through inorganic fertilizers and foliar application of nano urea @ 4 ml/liter at tillering and panicle initiation stage (T_3). The results showed that the paddy yield was 15.63 and 12.13 per cent higher in T_2 and T_3, respectively over farmers' practice. Similarly, number of tillers/hills increased by 19.78 and 18.8 per cent in T_2 and T_3 respectively over farmer's practice. The incremental net return and B:C ratio were recorded to be Rs. 12688, 8300 and 0.31, 0.21 units in T_2 and T_3, respectively over farmer's practice. Based on the above findings it may be concluded that the technology assessed in T_3 is at par with T_2 as it maintains the crop yield with nitrogen management.

Table 2.8: Response of nano urea as foliar application for N management in paddy

Details	No. of trials	Yield (q/ha)	No. of effective tillers/ hill	Net Return (Rs/ha)	B:C Ratio
NPK @ 80:58:0 kg/ha (FP-T_1)	14	37.72	23.5	90558	2.74
Application of RDF (NPK) @ 100:60:40 kg/ha (RP-T_2)		43.62	28.15	103246	3.05
Basal application of NPK (50:60:40) kg/ha and two sprays of Nano urea (4 ml/lit water) at tillering and panicle initiation stage (RP-T_3)		42.30	27.92	98858	2.95

Integrated Nutrient Management in Paddy

Nutrient Management in Paddy under Natural Farming

Problem identified: High cultivation cost and low factor productivity of paddy due to use of inorganic fertilizers

Technology Assessed: Assessment of Ghanajeevamrit @ 250 kg/ha and Jeevamrit @ 500 liter/ha twice in a month

Paddy is an important *Kharif* cereal that is used as a staple food by most of the population, grown across the zone in low and midlands. Indiscriminate application of inorganic fertilizers and no use of organic or natural sources are the major reasons for the high cultivation cost and low factor productivity of paddy. Looking at the above problem, KVKs of Durg-I, Korba, Mahasamund, Mungeli and Narayanpur of the Zone conducted 25 OFTs to assess the performance of nutrient management components in natural farming i.e. Ghanajeevamrit @250 kg/ha and Jeevamrit @ 500 liter/ha twice in a month (T_2). The results showed that cultivation cost under natural farming was reduced by Rs. 6841/ha in comparison to that of conventional farming (T_1). The yield of paddy was observed to be 10.9 percent low in T_2 but due to increased market price, the net income received Rs. 48100/ha which was slightly less than that of T_1 (Rs. 50142/ha). The incremental B:C ratio was recorded to be 0.30 units in T_2 over farmers practice. Based on the above findings it may be concluded that the technology assessed in T_2 is eco-friendly as it maintains the crop yield with soil health and fertility.

Table 2.9: Response of Ghanjeevamrit and Jeevamrit in paddy

Details	No. of trials	Cost saving (Rs/ha)	Yield (q/ha)	Net Return (Rs/ha)	B:C Ratio
NPK @ 80:58:0 kg/ha through inorganic sources (FP-T_1)	25	-	34.78	50142	2.47
Seed treatment with Beejamrit, Ghanajeevamrit @ 250 kg/ha and Jeevamrit @ 500 liter/ha twice in a month (RP-T_2)		6841	31.36	48100	2.77

Preparation and Application of Jeevamrit in Paddy Cultivation

Nutrient Management in Chickpea under Natural Farming

Problem identified: High cultivation cost and low factor productivity of chickpea due to use of inorganic fertilizers

Technology Assessed: Assessment of Ghanajeevamrit @ 250 kg/ha and Jeevamrit @ 500 liter/ha thrice at 21 days interval

Chickpea cultivation is mostly affected by non-adoption of recommended packages and practices but imbalanced/inadequate uses of inorganic fertilizers are the major reasons for the declining seed yield of chickpea as well as soil fertility. Due to imbalance application of inorganic fertilizers, the status of soil-beneficial microorganisms continuously declined which is in turn affecting the mineralization of nutrients resulting in improper plant nutrition. Looking at the above problem, KVKs of Durg-I, Mungeli and Narayanpur conducted 15 OFTs to assess the performance of natural farming nutrient management components i.e. Ghanajeevamrit @250 kg/ha and Jeevamrit @ 500 liter/ha thrice at 21 days' interval (T_2). The results showed that cultivation cost under natural farming was reduced by Rs.4117/ha in comparison to that of conventional farming (T_1) The yield of chickpea was observed to be 0.9 percent low in T_2 but due to increased market price, the net income received Rs. 28440/ha which was slightly less to that of T_1 (Rs. 29214/ha). The incremental B:C ratio was recorded to be 0.13 units in T_2 over farmers practice. Based on the above findings it may be concluded that the technology assessed in T_2 is eco-friendly as it maintains the crop yield with soil health and fertility.

Table 2.10: Response of Ghanjeevamrit and Jeevamrit in Chickpea

Details	No. of trials	Cost saving (Rs/ha)	Yield (q/ha)	Net Return (Rs/ha)	B:C Ratio
NPK @ 9:23:0 kg/ha through inorganic sources (FP-T_1)	15	-	11.13	29214	1.98
Seed treatment with Beejamrit, Ghanajeevamrit @250 kg/ha and Jeevamrit @ 500 liter/ha thrice at 21 days interval (RP-T_2)		4117	11.03	28440	2.11

Preparation and Application of Jeevamrit in Chickpea

Horticulture

Varietal Assessment of Tomato

Problem identified: Low yield due to use of low yielding old varieties.

Technology Assessed: Improved and high yielding tomato varieties viz. Kashi Abhiman, Kashi Aadarsh, Arka Rakshak, Arka Samrat, Kashi Aman, and Kashi Vishesh etc.

Tomato is an important vegetable crop worldwide. It is widely used in all households round the year. Farmers use low-yielding varieties and lack knowledge of scientific

production technology which is the reason for lowering the yield of tomatoes. There were 24 On-Farm Trials have been conducted by KVKs of Chhattisgarh and Madhya Pradesh. Viz. Kawardha, Balrampur, Dhamtari, Kanker, Anjora Durg, Raigrah, KVK Raipur from Chhattisgarh and Damoh, Betul, Chhindwara- II, Dindori, Dewas, Ashoknagar, Lahar, Datia, Dhar, Khargone, Rajgarh, Panna, Bijapur, Chhatarpur and Sidhi from Madhya Pradesh to assess the performance of the improved and high yielding tomato varieties Kashi Abhiman, Kashi Aadarsh, Arka Rakshak, Arka Samrat, Kashi Aman, Kashi Vishesh etc. Results indicated that the yield of varieties Arka Rakshak, Arka Samrat and Kashi Aadarsh increased by 78.71, 35.74 and 25.30 per cent, respectively over farmer's practice (T_1). Economic analysis indicated that the Net return of tomato variety Arka Rakshak increased by Rs. 230200 per ha over farmer's practice (T_1). Similarly, in varieties Arka Samrat and Kashi Aadarsh net return was increased by Rs. 205800 per ha and Rs. 156400 per ha over farmer's practice. From the results, it could be concluded that HYV and improved package of practices were the main factors for higher yield of tomato.

Table 2.11: Performance of HYV varieties of tomato

Details	No. of trials	Yield q/ha	Cost of Cultivation (Rs./ha)	Net Return (Rs./ha)	B:C Ratio
Local variety (FP-T_1)	24	249	70500	143000	3.02
Arka Rakshak (RP-T_2)		445	78800	373200	5.74
Arka Samrat (RP-T_3)		338	54000	348800	7.46
Kashi Aadarsh (RP-T_4)		312	75000	299400	4.99

Performance of HYV varieties of tomato

Integrated Nutrient Management in Chilli

Problem identified: Low yield due to imbalanced use of fertilizers.
Technology Assessed: Nutrient management in chilli crop under natural farming.

Chilli crop is one of the most valuable spice crops. India is the largest producer, consumer and exporter of Chilli. Imbalance and indiscriminate use of fertilizer play a major role in lowering the yield. To resolve this problem KVKs Kawardha and Bijapur from Chhattisgarh and Burhanpur, Ashoknagar and Jabalpur from Madhya Pradesh conducted 12 trials on Chilli crop to assess the response by using Jeewamrit and Ghanjeewamrit. Improved varieties used for trials were Kashi Ratna and Solan Bharpur. Results revealed that yield

obtained by using this technology was increased by 41.27, and 64.29 per cent, respectively over farmer's practice (T_1). The higher net return observed was Rs. 315550 and Rs. 328304 per ha over farmer's practice. Hence it could be concluded that INM with proper and balanced fertilizer increases the yield as well as net return.

Table 2.12: Performance of Integrated Nutrient Management in Chilli crop

Details	No. of trials	Yield (q/ha)	Cost of Cultivation (Rs./ha)	Net Return (Rs./ha)	B:C Ratio
Local variety (FP-T_1)	12	126	90383	175096	2.91
Kashi Ratna (RP-T_2)		178	132450	315550	3.38
Solan Bharpur (RP-T_3)		207	85000	328304	4.86

Integrated Nutrient Management in Chilli

Integrated Crop Management in Onion

Problem identified: Low yield due to old varieties and lack of improved package of practices.

Technology Assessed: Assessment of high-yielding variety of onion.

Onion is the most widely grown bulbous crop in India. Farmers are still using old varieties Nasik, Poona Red, etc. with poor crop management as a result they are getting low yield and less profit. A total of 25 On-Farm Trials has been conducted to assess the high-yielding varieties with improved production technology like Agri Found Dark Red, Bhima Shakti and Bhima Dark Red. KVKs involved in these trials were Shajapur, Jhabua, Khargone, Dindori and Dewas from Madhya Pradesh and Raipur, Balrampur, Durg-II, Mungeli and Mainpat from Chhattisgarh. Increased yield was observed by 32.16, 48.27 and 33.33 per cent, respectively over farmer's practice (T_1). Net returns were higher by Rs. 1408, Rs. 63884 and Rs. 101088 per ha over farmer's practice (T_1). It can be concluded that higher yield of onion was obtained from HYV and improved package of practices.

Table 2.13: Performance of Onion under Integrated Crop Management

Details	No. of trials	Yield (q/ha)	Cost of Cultivation (Rs./ha)	Net Return (Rs./ha)	B:C Ratio
Local variety (FP-T_1)	25	187.5	87507	170592	2.96
Agri Found Dark Red (RP-T_2)		247.8	75800	172000	3.27
Bhima Shakti (RP-T_3)		278	99124	234476	3.36
Bhima Dark Red (RP-T_4)		250	78320	271680	4.46

Integrated Crop Management in Onion

Crop Production in Spice crop Coriander

Problem identified: Low yield due to the use of local variety.
Technology Assessed: Assessment of high-yielding variety of coriander.

Coriander is a very important spice crop that is known for its distinct flavor and aroma. However, farmers are still using local seeds resulting in lower yield. A total of 10 OFTs were conducted by different KVKs viz. Neemuch, Rajgarh, Damoh and Alirajpur from MP and Gariyaband, Mungeli from Chhattisgarh. Different varieties assessed under trials are ACR-2, CG Chandrahasini Dhaniya-1 and Ajmer Dhaniya. These varieties performed well with increased yield by 155.67, 304.90 and 173.97 per cent, respectively over the farmer's practice (T_1). Economics is also higher by Rs. 8712, Rs. 56704 and Rs. 33648 over farmer's practice (T_1). This indicates that the use of high-yielding varieties with improved package of practice increases the yield as well as net income of farmers.

Table 2.14: Performance of Coriander under Crop Production

Details	No. of trials	Yield (q/ha)	Cost of Cultivation (Rs./ha)	Net Return (Rs./ha)	B:C Ratio
Local variety (FP-T_1)	10	3.88	22114	28892	2.31
ACR-2 (RP-T_2)		9.92	22412	37604	2.68
Ajmer Dhaniya (RP-T_3)		15.71	40000	85596	3.14
CG Chandrahasini Dhaniya -1 (RP-T_4)		10.63	22500	62540	3.78

Performance of Coriander under crop production

Agriculture Engineering

Resource Conservation Technology

Raised bed method of sowing

Problem identified: Flat bed sowing of *Kharif* crops at times lead to water stagnation resulting in crop failure. Similarly, flat bed sowing of certain rabi crops results in poor water management practices.

Technology Assessed: Raised bed method of sowing.

There is always a chance of failure of Kharif crops grown on flat fields during situations of stagnation of rainwater for long periods. This condition won't arise if the crops are grown at higher field levels with the provision of drains for drainage of excess rainwater. The raised beds along with furrows are supposed to provide a better environment for crop growth during *Rabi* season also. In view of this trials were conducted by KVK Kawardha, Shivpuri and Shajapur on raised bed method of sowing groundnut and chickpea. There was an incremental increase in crop yield by 6.42 q/ha in groundnut and by 1.84 q/ha in chickpea under raised bed planting. In both crops, the B:C ratio was better in raised bed planting over the flat bed planting. Overall, the raised bed planting performed better than the flat bed planting.

Table 2.15: Raised bed method of sowing

Details	No. of trials	Crop	Yield (q/ha)	Net Return (Rs/ha)	B:C Ratio
Conventional Flat bed sowing (FP-T1)	15	Groundnut	17.62	79922	3.46
		Chickpea	15.80	49400	2.90
Raised bed sowing (RP-T2)		Groundnut	24.04	120803	4.72
		Chickpea	17.64	61200	3.27


Raised Bed Sowing Method

Line Sowing through Seed cum Fertilizer Drill

Problem identified: Low nutrient and water use efficiency, difficulty in interculture operations, lower yield in broadcast method of sowing.

Technology Assessed: Line sowing through seed cum fertilizer drill.

Over the years farm mechanization in India has attained newer heights. However, at times, situations do arise when it becomes necessary to go back to the basics. It is a well known fact that line sowing - with its associated benefits- has outperformed the broadcasting method of sowing. Still one may find areas where the broadcasting method of sowing is the prevalent norm. Hence it becomes necessary to conduct trials on line sowing through seed cum fertilizer drill for the betterment of agriculture in the area. KVK Mungeli, Balrampur and Korea conducted trials on line sowing of chickpea, blackgram, linseed and wheat. There was incremental increase in yield by 2.9 q/ha in blackgram, 3.16 q/ha in chickpea and 3.39 q/ha in linseed under line sowing through seed cum fertilizer drill. An increase in yield resulted in higher net returns and higher benefit-cost ratio. Overall, the line sowing through seed cum fertilizer drill outperformed the broadcasting method of sowing.

Table 2.16: Line sowing through seed cum fertilizer drill

Details	No. of trials	Crop	Yield (q/ha)	Net Return (Rs/ha)	B:C Ratio
Conventional broadcasting method (Farmer's Practices-T_1)	20	Blackgram	4.5	12936	1.78
		Chickpea	7.12	24785	2.88
		Linseed	2.83	2915	1.23
Line sowing through seed cum fertilizer drill (Recommended Practice-T_2)		Blackgram	7.4	26776	2.23
		Chickpea	10.28	40244	3.76
		Linseed	6.22	14023	1.69


Line sowing through seed cum fertilizer drill

Animal Science

Animal Nutrition Management

Cultivation and feeding of Chelated Mineral Mixture Supplementation in dairy animals

Problem diagnosed: Low milk production due to deficiency of mineral nutrients in cattle after calving

Technology assessed: Assessment of use of Chelated Mineral Mixture Supplementation in Dairy cattle

Chelated mineral mixture is a combination of organic molecules that are bound to a metal ion, typically a mineral such as zinc, copper, manganese, and iron. This chelation process enhances the mineral's bioavailability and absorption in the body compared to inorganic mineral forms. As a result, chelated minerals mixture is more readily utilized by animals, leading to improved overall production and reproduction performance.

Two KVKs - Ratlam and Burhanpur, conducted 30 trials to assess the effect of chelated mineral mixture supplementation in dairy cattle for sustaining milk production. In recommended practice, 50 gm mineral mixture per animal per day after calving upto 90 days in addition to the feed offered in farmers' practice. The result revealed that there is an increase in average milk yield and net return by 35.52 % and 47.81%, respectively; indicating that supplementing existing feed with chelated mineral mixture supplementation regularly at appropriate amounts is beneficial in improving the production of an animal.

Table 2.17: Assessment of use of Chelated Mineral Mixture Supplementation in Dairy cattle

Details	No. of Trials	Avg. Milk Yield (Lit/day)	Avg. Net Returns (Rs.) in three months	B:C ratio
Feeding only dry Fodder (FP-T1)	30	4.42	4045.33	1.70
Mineral mixture supplementation @ 50 gm per animal per day after calving up to 90 days (RP-T2)		5.99	5979.63	1.89

Feeding of Chelated Mineral Mixture Supplementation in Dairy Animals

Cultivation and feeding of Azolla in Backyard Poultry

Problem diagnosed: High feed cost, slow growth rate and less body weight
Technology assessed: Assessment of use of Azolla as protein source for feeding of backyard poultry

Azolla is a free-floating, rapidly growing aquatic fern on the water surface. Azolla cultivation helps the farmer to reduce the cost of feed supplements in poultry. The higher crude protein content (>20%) and presence of essential amino acids (high lysine content), vitamins like A and B and minerals like calcium, phosphorous, potassium and magnesium made Azolla useful feed supplement for poultry. The increase in egg productivity, nutritional value and savings in the concentrated feed clearly showed the suitability of Azolla as a potential feed supplement for poultry farming.

Three KVKs Anjora Durg I, Mandla and Jhabua, conducted 30 trials to assess the effect of Azolla as protein source for feeding of backyard poultry. In recommended practice, 100 to 150 gm Azolla was offered to bird per day for six months in addition to the feed offered in farmers practice. The result revealed that there is an increase in average live weight (kg/bird) at 3 months and net return by 17 and 52 per cent, respectively; indicating that supplementing existing feed with Azolla regularly at appropriate amount is beneficial in reducing feeding costs and boosts the output.

Table 2.18: Assessment of use of Azolla as protein source for feeding of backyard poultry

Details	No. of trials	Avg. live weight (kg/bird) at 3 months	Avg. Net Returns (Rs.) in three months	B:C ratio
Feeding only dry Fodder (FP-T1)	30	1.0	13409.67	2.80
Feeding of Azolla @ 100 to 150 gm/bird/day (RP-T2)		1.17	20437.33	3.42


Feeding of Azolla in Backyard Poultry

Cultivation and feeding of bypass protein in dairy buffaloes

Problem diagnosed: Low milk production and fat percentage due to negative energy balance
Technology assessed: Assessment of bypass protein on milk production in dairy Buffalo

Bypass protein is an animal based protein source that resists degradation in the cow's rumen to pass into the lower gastrointestinal tract and provide essential amino acids to the cow. By feeding bypass protein, dairy producers can increase their metabolizable protein yield and reduce the amount of crude protein in the diet, thus reducing ammonia votalization and nitrogen excretion help the cow to meet this amino acid requirement for milk production and components.

Six KVKs namely, Ratlam, Burhanpur, Satna, Morena, Gwalior and Indore conducted 90 trials to assess the effect of bypass protein on milk production in dairy buffalo for increasing milk production. In recommended practice (T_2), the dairy buffalo is fed with 100 gm bypass protein per animal per day after calving up to 90 days in addition to the feed offered in farmers practice (T_1). The result revealed that there is an increase in average milk yield and net return by 35.52 and 47.81%, respectively; indicating that supplementing existing feed with chelated mineral mixture supplementation regularly at appropriate amount is beneficial in improving production of an animal.

Table 2.19: Assessment of use of bypass protein supplementation in dairy cattle

Details	No. of trials	Avg. Milk Yield (Lit/day)	Avg. Net Returns (Rs.) in three months	B:C ratio
Feeding only dry Fodder (FP-T1)	90	6.82	5052.3	2.13
Bypass protein @ 100 gm per animal per day after calving up to 90 days. (RP-T2)		8.04	5893.6	2.26

Feeding of bypass protein in dairy buffaloes

Fisheries

Fish seed production

Problem Identified: Lack of standard seed and no use of seasonal ponds for fish seed rearing, low survival rate at nursery stage and non-availability of quality seed.

Technology Assessed: Production of fish seed at small seasonal pond.

The production of high-quality fish seed is crucial for the growth of aquaculture production and the survival rates of fingerling ponds. Despite this, many farmers continue to rely on traditional feeds such as rice bran and mustard oil cake. There is now a pressing need to transition to floating feed and slow-sinking crumble feed as supplementary options. These modern feeds not only enhance the survival rates but also significantly boost the growth of fingerlings. This shift is essential to meet the growing demands of the fish farmer and ensure sustainable aquaculture practices.

Table 2.20: Performance of Fish Seed Production of Small Seasonal Pond

Details	No of Trials	Survival rate (%)	Cost of cultivation (Rs)	Net return (Rs)	B:C ratio
No Use of seasonal pond, use of manure (Cow dung) @10 tonne (ha.) (FP-T1)	15	35.6	51566	70388	2.38
Recommended Practice – T2 1. Stocking of fish seed catla, rohu, mrigala (50Lac/ha.) 2. Application of vermicompost @ 5 tonnes /ha		53	64533	126433	2.95

KVK Dhamtari and Mugeli conducted 15 trials on the assessment of fish seed production at small seasonal ponds maximum survival rate (68%) was recorded by KVK Dhamtari where an average survival rate of 47% was achieved in the seasonal pond.

Fish seed distributed

Haul of fish seed produced

Composite fish Culture

Problem Identified: Low production due to improper management and slow growth rate, non- use of vitamin and mineral mixture and low productivity due to lack of pond bottom sludge amelioration.

Technology Assessed: Composite fish culture, use of mineral mixture use of Zeolite, using different fish species

To achieve high production per unit area of water body, a strategy known as mixed fish farming, or composite fish culture, is employed. This method involves stocking fast-growing, compatible fish species with different feeding habits together in the same pond. By doing so, all ecological niches within the pond are effectively utilized. This approach optimizes the pond's productivity, thereby maximizing fish yield. Carps are particularly suitable for this method as they fulfill these requirements-they feed on lower tropic levels within the pond's ecosystem and readily accept low-cost feeds, making them economical to culture.

Table 2.21: Performance of Composite Fish Culture

Details	No of trials	Yield (q/ha)	Cost of cultivation (Rs)	Net return (Rs)	B:C ratio
No practices and do not stock fish seed proper ratio (FP-T1)	39	32.27	208947	91915	1.44
Recommended Practice – T2 1. Stocking of 8000 fingerling /ha (at least 10-15 gm). 2. Feeding of oil cake +rice bran (1:1) by 3-5% body weight. 3. Application of water probiotic (water spell) @250g/ac-m water area. 4. Application of zeolite 25kg/ha. 5. Application of probiotics @ 420 gm/ha.		41.70	224898	180413	1.80

KVK Mungeli, Raipur, Bemetara, Shivpuri, Dindori, Raisen and Dewas conducted 39 OFTs on assessment of composite culture, polyculture, mineral mixture, use of zeolite, using

different fish species. Maximum yield of 41.22 q/ha was recorded under T_2 by KVK Dindori where an average percent change in yield 46.01 q/ha was achieved in composite fish culture.

Fish seed stocking

Harvested fish

Fish Production through Biofloc technique

Problem Identified: Semi intensive culture of fish, getting low production, requires large water bodies and manpower and cost of fish production high and low fish production.

Technology Assessed: Assessment of fish production through biofloc technique.

Biofloc technology (BFT) is an innovative approach to fish farming that involves cultivating microorganisms to improve water quality and provide supplementary nutrition to fish, this technology offers multiple benefits to fish farmers including enhanced water quality reduced costs, improved sustainability and increased production. These advantages make it an attractive option for modern aquaculture practices.

Table 2.22: Performance of fish production through biofloc

Details	No of trials (Nos)	Yield (q/ha)	Cost of cultivation (Rs/ha)	Net return (Rs/ha)	B:C ratio
Fish culture in farmer pond, fish culture in earthen pond (FP-T1)	16	20.10	144745	50999	1.35
Recommended Practice-T2 1. Stoking Density of Pangasius Fish Seed (100g) @ 25Nos./M3, T3 - @ 70 Nos./M3 2. High-Value Fish Species Inoculum – 150 L water + 3 Kg Pond Soil + 1.5 gm Ammonium Phosphate/ Urea + 30 gm Carbon Source i.e. Jaggery/Flour etc. + Mixing + Continuous Aeration for 24 – 48 hrs + Transferred to Biofloc Tank. C:N Ratio – 10:1, Floc Volume:25-35 ml/L Feeding – 1-2 % body weight of fish.		23.70	152025	107249	1.71

Biofloc tank

KVK Korba, Raipur, Bemetra, and Kondagoan conducted 16 trials on the assessment of fish production through the biofloc technique maximum yield of 23.70 q/ha was recorded by KVK Raipur in biofloc fish culture in the tank.

Improve Fish Species

Problem Identified: Lack of knowledge about air-breathing fish culture, pangasius fish culture.

Technology Assessed: Production of air-breathing fish culture, pangasius fish culture.

The Amur carp, also known as the Amur wild carp (*Cyprinus rubrofuscus*), is a species of freshwater fish. These carp are known for their resilience and adaptability to different environments. They are prolific breeders, capable of producing large numbers of eggs in a single spawning event. These are harvested for food, particularly in aquaculture settings. Pangasius, known for its facultative air-breathing ability, can endure very low dissolved oxygen levels, down to 0.1 ppm briefly. Its rapid growth, hardiness, disease resistance, and suitability for high stocking densities make it ideal for intensive aquaculture. Monosex tilapia is preferred for its superior growth and yield per unit area, thriving on natural pond foods as well as supplements. Genetically improved catla, an improved variety, and exhibits strong disease resistance against Aeromonas. Magur, an indigenous air-breathing fish, features suprabranchial accessory respiratory organs in its head, enabling survival even in low dissolved oxygen conditions.

Table 2.23: Performance of fish production of improved fish species

Details	No of trials (Nos)	Yield (Q)	Cost of cultivation (Rs)	Net return (Rs)	B:C ratio
Lack of knowledge about high value fish i.e. Air breathing Fish Culture, Poor growth and low fish production (FP-T1)	32	35	301072	180964	1.60
Recommended Practice-T2 1. Stocking Pangasis in the ponds @ 10000 Fl/ha. 2. Stocking of cat fish fingerling @ 50,000/ha. , Use of Groundnut oil cake + Rice bran (1:1) + Animal protein for feeding @ 3-5% body weight. 3. Stocking of IMC fingerlings and Amur carp fingerling @ 4500 and 500/ha respectively; fishes will be fed with Mustard oil cake with rice bran (3:1) @ 2% of their body weight.		77	217527	379748	2.75

Fish seed stocking

Harvest fish

Home Science

Nutrition Security

Bio-fortified variety of wheat for nutritional security

Problem Identified: Malnutrition among the farm families due to low nutrient diet
Technology Assessed: Bio-fortified varieties assessed for Nutritional Security

Malnutrition has emerged as a major health problem. It affects growth and development, and reduces the work efficiency in humans, besides having huge economic and societal implications. Among various avenues, crop bio-fortification has emerged as the most sustainable and cost-effective approach to address malnutrition. Providing nutritional security through the use of biofortified varieties. Children, adolescents and women's health can be significantly improved by biofortified crops. In Madhya Pradesh, KVK, Chhindwara, Jabalpur, Khandwa, Umaria, Morena, Neemuch, Guna and Ratlam conducted 39 On-Farm Trials using bio-fortified varieties of wheat such as Pusa Tejas

(HI-8759), DBW-187, MP-3288, HI-1605, WB-02, DDW-47, HI-1633 and HI1634 to improve nutritional status in farm families. The prominent bio-fortified varieties are given below in Table 2.24.

Table 2.24: Bio-fortified varieties assessed for nutritional security

Detail of Technology	No.of trials	Nutrient /100gm		
		Protein (%)	Iron (mg)	Zn (mg)
Lok-1 (FP-T1)	-	10.57	-	-
Pusa Tejas (HI-8759) (RP-T2)	15	12.0	41.1	42.8
MP-3288	07	17.3	42.1	42.8
HI-1605	07	13.0	43.0	38.2
WB-02	10	12.0	40.0	42.0

Pusa Tejas (HI 8759)

Drudgery Reduction of Farm Women

Problem Identified: Heavy drudgery during manual seed decortication (by bare hand)
Technology Assessed: Farm women using mahua seed decorticator

Mahua seeds decortications with bare hands is a very tedious process causes discomfort, pain in fingers hand, wrist, shoulders results in low efficiency. KVKs of Madhya Pradesh conducted 10 trials on Mahua decorticator for farm women to address the problem of drudgery in agricultural operations. As a result of using Mahua Decorticator, 53.14 percent work efficiency was increased and 23.67 percent of drudgery was reduced. Mahua seed decorticator (manually operated) reduces drudgery and pain in various parts of body.

Table 2.25: Performance of Mahua seed decorticator for farm women

Detail of Technology	No. of trials	Output (Kg/hr)	Cardiac cost (beat/kg)	WHR beat/min	% reduction in drudgery	% increase in efficiency
Manual decortication by hands (T1)	10	4.15	37	96.2	-	-
Use of Mahua seed decorticator (T2)		8.55	15	110	23.67	53.14


Mahua seed decorticator for farm women

Income generation

Income Generation by Processing and Value Addition of Minor Millet

Problem Identified: Lack of knowledge of processing and value addition of minor millets

Technology Assessed: Assessment of processing and value-addition of minor millet for financial and nutritional security

Millets are traditionally cultivated by poor farmers in various regions of the country, including sorghum, pearl millet, finger millet, and small millets. Nutri-cereals are known for their high fiber content and high protein content. They are also rich in essential fatty acids, B vitamins, calcium, iron, zinc, potassium, and magnesium, among other nutrients. A majority of farm women hold marginal or small holdings and earn very little income. To enhance the income level of farm women were provided the technology of processing and value addition. Looking above this problem, KVK Rajgarh, Jabalpur, Ujjain, Gwalior from Madhya Pradesh and KVK Anjora from Chhattisgarh conducted 34 on farm trials on value added products of minor millets. Results indicated that, farm women obtained average net return of Rs.16000 per quintal with cost of input Rs.8000.

Table 2.26: Promotion and Value Addition of Millets for Income Generation

Detail of Technology	No. of trials	Average Cost of input (Rs./q)	Average Gross Return (Rs./q)	Average Net Return (Rs./q)	B:C Ratio
Marketing of unprocessed minor millets (T_1)	34	2800	4200	1400	1.5
Processed Millets Rice (T_2)		9800	26000	16200	2.65
Value added Products (T_3)		8000	24000	16000	3

Preparation of Value-added Products from Millets

3. Frontline Demonstrations

Frontline demonstrations (FLD) are conducted to demonstrate the superiority of frontier and location specific proven technologies of agriculture and allied sectors among the farming community and extension functionaries for up-scaling in the larger area as well as for generating the production data along with the feedback. During the year 2023, under ICAR-ATARI Zone –IX, total 838 FLDs were conducted on cereals, pulses, oilseed, enterprises and other crops by covering a total area of 13041.49 ha and benefitting 31824 farmers by subject matter specialist who provides technological inputs to organize the demonstrations.

Table 3: Summary of FLDs (State-wise) conducted by KVKs during 2023

State	Categories	No. of Technology Demonstrated (crops/ enterprises)	Area (ha)	Beneficiaries
Madhya Pradesh	Cereals and Others	154	862.9	2034
	Oilseeds (CFLD)	141	3907.8	9459
	Pulses (CFLD)	43	4903.2	11590
	Enterprises (ha/Units)	90	276.65	986
	Others	55	142.92	449
Total		**363**	**9364.57**	**22816**
Chhattisgarh	Cereals and Others	118	450.2	1394
	Oilseeds (CFLD)	38	1469.4	2793
	Pulses (CFLD)	32	521.4	1134
	Enterprises (ha/Units)	58	284.42	1097
	Others	50	110.24	439
Total		**217**	**2585.66**	**6033**
Total	Cereals and Others	331	1425.46	3877
	Oilseeds (CFLD)	179	5377.2	12252
	Pulses (CFLD)	75	5424.6	12724
	Enterprises (ha/Units)	148	561.07	2083
	Others	105	253.16	888
Grand Total		**838**	**13041.49**	**31824**

Table 3.1: Summary of FLDs (Crop-wise) conducted by KVKs during 2023.

Categories	No. of Technology Demonstrated (crops/ enterprises)	Area (ha)	No of FLDs Beneficiaries
Cereals	73	334.2	902
Pulses	44	542.6	1187
Oilseeds	50	183.2	451
Flowers	2	1.5	10
Fruits	5	6.4	25
Lac	2	5.0	18
Fodder crop	4	10.0	30
Millets	13	83.8	202
NTFPs	2	5.1	10
Vegetable	59	112.3	449
Cash crop	2	7.0	17
Spices	14	20.8	107
Tuber crops	2	1.2	20
Vegetables	59	112.36	449
Total	**331**	**1425.46**	**3877**
Enterprises (ha/Units)			
Agriculture Engineering	59	244.62	514
Animals	19	164	737
Fish	11	46.2	87
Women	59	106.25	745
Total	**148**	**561.07**	**2083**
Grand total	**639**	**12062.53**	**29298**

Table 3.2: Summary of FLDs conducted in different areas by KVKs in state Madhya Pradesh.

Categories	No. of Technology Demonstrated (crops/ enterprises)	Area (ha)	No of Beneficiaries
Cereals	34	134	332
Oilseeds	37	118.8	271
Pulses	28	467.2	982
Spices	7	10	45
Vegetables	30	42.9	179
Cash crop	1	2	5
Fruits	3	5	15
Fodder crops	4	10	30
Millets	10	73	175
Total	**154**	**862.9**	**2034**
Enterprises (ha/Units)			
Agriculture Engineering	27	109.4	218
Animals	8	65	65
Women	55	102.2	703
Total	**90**	**276.6**	**986**
Grand total	**244**	**1139.5**	**3020**

Table 3.3: Summary of FLDs conducted in different areas by KVKs in state Chhattisgarh.

Categories	No. of Technology Demonstrated (crops/ enterprises)	Area (ha)	No of Beneficiaries
Cereals	39	200.2	570
Oilseeds	13	64.4	180
Pulses	16	75.4	205
Spices	7	10.8	62
Tuber crops	2	1.2	20
Vegetables	29	69.4	270
Cash crop	1	5	12
Flowers	2	1.5	10
Fruits	2	1.4	10
Lac	2	5	18
Millets	3	10.8	27
NTFPs	2	5.1	10
Total	**118**	**450.2**	**1394**
Enterprises (ha/Units)			
Agriculture Engineering	32	135.2	296
Animals	11	99	672
Fish	11	46.2	87
Women	4	4	42
Total	58	284.4	1097
Grand total	**176**	**734.6**	**2491**

Table 3.4: Summary of FLDs under Integrated Crop Management

Crops	No. of Technology Demonstrated (crops/ enterprises)	Area (ha)	No. of farmers	Yield q/ha		% Change	Net Return Rs./ha	
				RP*	FP**		FP	RP
Cereals								
Rice	11	49.8	123	38.09	30.66	25.2	45363	63878
Wheat	6	21	35	38.64	32.98	21.69	32780	41700
Barley	1	2	5	38.2	29.6	29.05	19860	34570
Pearl Millet	1	2	10	24	18.24	31.57	44400	96540
Flower								
Mari gold	1	0.5	5	142	75	89.33	68780	231160
Fodder crop								
Napier Grass	1	2	10	540	350	54.28	81640	137600
Fruit								
Guava	1	0.4	5	568	382	32.75	728000	1272000
Millets								
Finger millet	1	2	5	11.82	7.3	38.2	12921	24506
Kodo millet	5	32	80	12.61	8.55	43.8	10396	18485
Kutki	1	5	5	8.66	5.52	56.8	5460	14380
Sorghum	1	2	5	31.3	24.8	26.21	44520	62395
NTFPs	1	5	5	3.8	3.2	18.75	3050	7700
Oilseeds								

Crops	No. of Technology Demonstrated (crops/ enterprises)	Area (ha)	No. of farmers	Yield q/ha		% Change	Net Return Rs./ha	
				RP*	FP**		FP	RP
Mustard	4	15.8	32	9.1	4.3	52.75	18026	38053
Groundnut	1	15	29	16.53	9.8	68.67	29694	72211
Linseed	2	7	10	11.96	9.23	34.31	29042	44554
Niger	1	4.8	12	2.8	2	40	10000	17400
Sesame	2	4	10	5.21	3.75	25.1	12196	21827
Soybean	3	14	28	15.12	10.73	43.93	31873	43579
Pulses								
Black gram	4	406	837	6.305	5.47	18.04	16548	24923
Chickpea	8	18	46	13.48	11.86	12.94	41746	56925
Field pea	1	2	5	14.9	12.1	18.79	45900	39100
Lathyrus	1	4.8	23	10.27	6.13	67.53	11361	22569
lentil	1	2	5	13.2	9.8	34.69	38165	56710
Spices								
Ajwain	1	1	12	10.2	8.3	26	61317	81670
Coriander	1	4.8	12	8.51	5.29	60.86	31267	65894
Fennel	1	1	12	16.25	11.56	40.57	82310	133680
Vegetables								
Brinjal	3	7	15	360.65	241.3	57.5	185900	293550
Broccoli	1	5	5	217.2	234.4	7.33	114400	200800
Cluster bean	1	1	5	13.4	9.8	36.73	30320	47060
Cowpea	2	1.2	13	163.5	123	32.98	121713	178614
Moringa	1	0.16	12	350	160	119	97080	230864
Onion	1	0.4	7	213	150	42	145000	209500
Tomato	3	2.2	20	10123.29	8402	52.05	108267	264317
Radish	1	0.2	5	313	246	27.2	122000	164000
Seasonal Vegetable	2	5.02	32	266.4	211.74	29.91	63194	92572
Grand Total	**77**	**646.08**	**1480**					

**** RP-Recommended practice, **FP-Farmers' practices***

Table 3.5: Summary of FLDs on Integrated Disease Management

Crops	No. of Technology Demonstrated (crops/ enterprises)	Area (ha)	No. of farmers	Yield q/ha		% Change	Net Return Rs./ha	
				RP*	FP**		FP	RP
Cereal								
Rice	7	27	71	44.0	38.4	14.3	54040	66419
Oilseeds								
Groundnut	1	2	5	20.3	15.7	29.3	60225	83275
Sesame	1	2	5	5.5	3.9	41.0	15215	24925
Soybean	3	11	27	15.0	12.6	15.6	34512	46026
Pulses								
Black gram	1	4	10	7.9	6.2	28.5	17345	25828
Chickpea	3	12	32	12.4	8.8	48.6	26336	41390
Pigeon pea	1	2	5	17.7	12.6	40.5	69495	103790
Spices	**2**							
Ginger	2	2	15	171.9	129.6	32.6	229666	340904

Crops	No. of Technology Demonstrated (crops/ enterprises)	Area (ha)	No. of farmers	Yield q/ha		% Change	Net Return Rs./ha	
				RP*	FP**		FP	RP
Vegetables								
Chilli	2	6	10	16.9	10.1	66.6	44960	95063
Brinjal	3	6.8	22	132.0	103.2	30.1	291533	385800
Colocasia	1	1	5	158.0	132.0	19.7	170700	209300
Onion	1	1	5	306.2	228.7	33.9	201640	283940
Tomato	3	10.8	27	240.2	199.7	23.8	181024	269950
Cash Crop								
Sugarcane	1	5	12	954.0	865.0	10.3	203120	239420
Grand Total	**30**	**92.6**	**251**					

** RP-Recommended practice, **FP-Farmers' practices*

Table 3.6: Summary of FLDs on Integrated Nutrient Management

Crops	No. of Technology Demonstrated (crops/ enterprises)	Area (ha)	No. of farmers	Yield q/ha		% Change	Net Return Rs./ha	
				RP*	FP**		FP	RP
Cereals								
Rice	7	32.8	92	45.61	38.08	16.34	55513	71553
Wheat	7	25	67	37.69	30.71	22.98	39218	51983
Maize	3	10	50	48.3	35.87	29.64	49799	71922
Ragi	1	2.4	12	10.65	7.50	42.00	9845	18146
Pulses								
Black gram	1	2	5	8.90	6.70	32.84	26650	39830
Chickpea	2	4	15	18.93	15.60	20.29	50168	67046
Lathyrus	3	12.2	36	5.71	3.94	40.09	12023	18236
Oilseeds								
Mustard	2	7	18	9.89	7.80	28.87	28580	38412
Sesame	2	4	10	5.77	4.26	29.92	19155	29646
Soybean	3	8	20	14.03	10.73	48.13	25515	38282
Millets								
Kodo millet	1	4.8	12	5.00	3.50	42.86	4700	8700
Kutki	1	20	50	7.01	5.93	18.21	10220	16270
Fruit								
Mango	1	1	5	106.00	88.00	20.45	53000	66000
Spices								
Garlic	1	2	5	96.90	82.60	17.31	342540	410923
Turmeric	1	1	5	9.89	3.45	186.67	190980	293246
Vegetables								
Cauliflower	1	2	5	354.80	261.50	35.68	144760	232550
Cowpea	1	1	10	56.40	42.25	25.08	23210	41190
Garlic	1	0.2	5	125.62	101.59	23.60	255300	329484
Onion	2	2	15	231.40	167.85	47.64	187645	256419
Pea	1	1	5	79.50	65.10	22.12	161050	206750
Grand Total	**42**	**142.4**	**442**					

** RP-Recommended practice, **FP-Farmers' practices*

Table 3.7: Summary of FLDs on Integrated Pest Management

Crops	No. of Technology Demonstrated (crops/ enterprises)	Area (ha)	No. of farmers	Yield q/ha		% Change	Net Return Rs./ha	
				RP*	FP**		FP	RP
Cereals								
Rice	5	19.8	78	37.40	32.76	17.60	62318	73799
Wheat	1	4.8	17	40.87	35.31	15.75	81511	99597
Maize	2	9.6	24	33.00	31.13	6.69	14628	17824
Pulses								
Black gram	1	5	13	6.40	5.22	22.61	21797	27980
Chickpea	4	16.8	34	18.20	14.11	32.94	52320	67629
lentil	1	2	5	16.45	14.39	12.50	84474	99420
Pigeon pea	1	5	5	11.60	7.82	48.34	37620	61880
Oilseeds								
Mustard	5	17	42	11.24	8.41	31.98	26416	39852
Soybean	1	2	5	16.58	13.72	20.84	36712	49068
Lac production								
Lac	2	5	18	39.12	23.50	38.74	121050	183900
Millets								
Kutki	1	2	5	7.25	4.50	61.11	6550	11030
Spices								
Onion	1	2	10	202.90	157.50	28.82	112924	166475
Vegetables								
Bean	1	2	10	59.60	54.40	9.56	64400	73200
Brinjal	3	11	17	212.87	172.67	23.15	117695	162737
Cauliflower	1	0.025	5	152.80	116.60	31.04	86620	118850
Sweet Potato	1	4	6	96.00	85.40	12.41	120100	130000
Tomato	1	1	5	571.00	413.00	38.20	233900	367120
Coriander	1	4.8	12	57.45	54.50	5.41	105496	114609
Grand Total	**33**	**113.82**	**311**					

**** RP-Recommended practice, **FP-Farmers' practices***

Table 3.8: Summary of FLDs on Integrated Weed Management

Crops	No. of Technology Demonstrated (crops/ enterprises)	Area (ha)	No. of farmers	Yield q/ha		% Change	Net Return Rs./ha	
				RP*	FP**		FP	RP
Cereals								
Rice	2	9.8	24	48.00	40.50	28.15	54973	80518
Maize	1	4	10	49.30	44.10	11.79	48144	54228
Oilseeds								
Groundnut	1	5	12	15.40	10.00	54.00	27300	53740
Niger	1	4	10	5.80	3.10	87.10	15515	33307
Sesame	1	2	5	5.96	4.06	29.97	15114	28961
Soybean	1	4	10	14.30	11.27	26.89	32715	45850
Sunflower	1	4.8	12	30.21	26.11	17.23	29352	36998
Pulses								

Crops	No. of Technology Demonstrated (crops/ enterprises)	Area (ha)	No. of farmers	Yield q/ha		% Change	Net Return Rs./ha	
				RP*	FP**		FP	RP
Chickpea	1	5	12	15.85	12.60	25.79	35000	49750
Vegetables								
Garlic	1	1	5	126.20	95.70	31.87	352200	481300
Okra	1	1	5	152.00	108.00	40.74	127000	186000
Onion	1	0.4	4	250.00	180.00	38.89	150000	279800
Grand Total	**12**	**41**	**109**					

**RP-Recommended practice, **FP-Farmers' practices*

Table 3.9: Summary of FLDs on Varietal evaluation

Crops	No. of Technology Demonstrated (crops/ enterprises)	Area (ha)	No. of farmers	Yield q/ha		% Change	Net Return Rs./ha	
				RP*	FP**		FP	RP
Cereals								
Rice	3	13	32	45.39	34.30	22.96	51903	79145
Wheat	4	25.2	62	33.54	26.98	25.06	33859	47234
Barley	1	4.8	12	31.12	23.85	30.48	19237	29660
Flower								
Mari gold	1	1	5	22.89	12.05	89.96	7228	23980
Millets								
Kodo millet	3	36	90	8.35	5.49	60.26	10112	18692
Finger millet	1	4	10	18.50	10.80	71.30	20229	45401
Sorghum	1	2	5	27.80	24.40	13.93	51200	59400
Kutki	1	20	50	10.70	8.50	25.88	11750	15550
Oilseeds								
Mustard	3	13	33	8.89	5.60	58.33	14660	28012
Groundnut	1	8	40	18.16	12.05	33.64	50492	84956
Linseed	2	6	15	8.23	5.65	44.48	19540	33185
Sesame	1	2	5	5.05	3.84	23.76	9605	15062
Soybean	6	15.8	44	14.45	10.66	38.90	27647	44566
Pulses								
Chickpea	4	16.2	41	17.30	13.74	26.47	42489	57070
Pigeon pea	1	5	13	10.70	7.90	35.44	29582	44130
Spices								
Coriander	1	1	8	8.50	6.50	30.77	8000	12000
Garlic	1	1	5	85.50	69.80	22.49	171800	210650
Onion	1	1	5	133.50	90.30	47.84	153520	249550
Turmeric	2	2	13	294.00	178.00	47.37	208125	408750
Tuber crop								
Elephant Foot Yam	2	1.2	20	439.76	263.06	36.10	243125	548713
Vegetables								
Bean	1	5	12	265.00	225.00	17.77	200500	258500
Bitter gourd	1	1	10	310.20	261.10	18.81	122820	154216
Brinjal	1	5.8	16	2.80	1.50	86.67	123000	238000
Colocasia	1	5	12	85.00	72.00	18.05	100000	142500
Coriander	2	1.5	20	7.41	5.45	33.55	50400	76350
Cucumber	2	2	10	306.55	182.25	59.85	123425	307150

Crops	No. of Technology Demonstrated (crops/ enterprises)	Area (ha)	No. of farmers	Yield q/ha		% Change	Net Return Rs./ha	
				RP*	FP**		FP	RP
Garlic	1	1	7	308.00	218.00	41.28	153000	236000
Onion	3	6.3	25	174.23	127.87	33.49	94257	180323
Tomato	2	5.8	22	246.71	213.47	17.58	90853	115739
Seasonal Vegetable	2	0.56	25	137.11	86.42	49.12	212060	355635
Grand Total	**57**	**212.16**	**667**					

** RP-Recommended practice, **FP-Farmers' practices*

Table 3.10: Summary of FLDs on Resource Conservation Technology

Crops	No. of Technology Demonstrated (crops/ enterprises)	Area (ha)	No. of farmers	Yield q/ha		% Change	Net Return Rs./ha	
				RP*	FP**		FP	RP
Lathyrus	1	4.8	10	7.16	5.1	40.39	9050	14955
Grand Total	**1**	**4.8**	**10**	**7.16**	**5.1**	**40.39**	**9050**	**14955**

** RP-Recommended practice, **FP-Farmers' practices*

Table 3.11: Summary of FLDs on Soil Fertility Management

Crops	No. of Technology Demonstrated (crops/ enterprises)	Area (ha)	No. of farmers	Yield q/ha		% Change	Net Return Rs./ha	
				RP*	FP**		FP	RP
Cereals								
Rice	2	6.8	17	26.2	24.4	14.7	38107	41784
Maize	2	8.8	22	48.6	37.6	35.8	39850	53275
Oilseeds								
Groundnut	1	4.8	12	8.0	0.0	100.0	20000	22300
Mustard	1	5	12	15.4	11.4	33.8	44556	60712
Pulses								
Chickpea	2	6.8	17	16.0	13.6	17.2	48265	59740
Pigeon pea	1	5	13	10.3	8.2	25.3	36708	48600
Grand Total	**9**	**37.2**	**93**					

** RP-Recommended practice, **FP-Farmers' practices*

Table 3.12: Summary of FLDs on Integrated Farming System

Crops	No. of Technology Demonstrated (crops/ enterprises)	Area (ha)	No. of farmers	Yield q/ha		% Change	Net Return Rs./ha	
				RP*	FP**		FP	RP
Cereals								
Maize	1	2	5	760	340	123.5	10100	40210
Fodder crop								
Napier Grass	2	4	10	575	355	108.5	29975	61850
Fruits								
Guava	1	2	5	11.34	8.43	25.7	29664	10278

Crops	No. of Technology Demonstrated (crops/ enterprises)	Area (ha)	No. of farmers	Yield q/ha		% Change	Net Return Rs./ha	
				RP*	FP**		FP	RP
Mango	1	2	5	15.97	11.19	29.9	52230	22258
Pear	1	1	5	17.22	2.00	761.0	-15500	52100
NTFPs	1	0.1	5	1.06	0.94	12.8	1061	3150
Pulses								
Chickpea	1	2	5	20	14	42.9	41490	74130
Spices								
Turmeric	1	2	5	800	450	77.8	150000	228000
Vegetables								
Seasonal Vegetable	1	4	10	7.60	4.75	60	14190	25440
Grand Total	**10**	**19.1**	**55**					

**** RP-Recommended practice, **FP-Farmers' practices***

Table 3.13: Summary of FLDs on Feed and Fodder Production

Crops	No. of Technology Demonstrated (crops/ enterprises)	Area (ha)	No. of farmers	Yield q/ha		% Change	Net Return Rs./ha	
				RP*	FP**		FP	RP
Azolla	1	4	10	4.48	3.71	20.75	83.4	114.2
Total	**1**	**4**	**10**					

**** RP-Recommended practice, **FP-Farmers' practices***

Table 3.14: Summary of FLDs on Farm mechanization

Category	Name of implement	Crop	Area (ha)	No of Farmers
Sowing and planting tools and machineries	Planter	Chickpea	1	5
		Field Pea	1	5
		Garlic	5	5
		Maize	5	6
		Paddy	5	13
		Pigeonpea	1	5
		Potato	5	5
	Transplanter	Paddy	6	6
	BBF	Chickpea	2.5	10
		Maize	2	5
		Soybean	15.4	42
	DSR Machine	Paddy	2	5
	Inclined plate planter	Paddy	2	5
	Line sowing	Paddy	4.8	6
	Raised Based	Chickpea	2.5	10
	Reversible Plough	Soybean	2.5	10
	Seed-cum-Fertilizer Drill	Blackgram	1	5
		Chickpea	5	13
		Kodo millet	10	10
		Lathyrus	2.6	13
		Mustard	0.4	10

Category	Name of implement	Crop	Area (ha)	No of Farmers
		Paddy	30	56
		Soybean	5	5
		Wheat	14	40
	Tractor drawn seed cum fertilizer	Finger millet	2.6	13
		Linseed	2.02	5
		Paddy	5	10
	Zero till seed cum fertilizer drill	Wheat	7	18
Intercultural management tools and machineries	ConoWeeder	Paddy	2	5
	Disc Harrow	Paddy	4	10
	Fertilizer through venturi	Tomato	0.4	10
	Rotary paddy weeder	Paddy	4	10
Irrigation management tools and machineries	Mulching with fertigation system	Chilly	12	12
	Solar pump	Wheat	0.4	10
Harvesting tools and machineries	Wheel hoe	Soybean	5	5
	Combine Harvester	Paddy	4	10
	Reaper cum Binder	Wheat	2.5	10
	Single Row Maize Harvester	Maize	5	12
	Tractor Operated Axial Flow Thresher	Paddy	5	5
Postharvest processing tools and machineries	spiral gravity separator	Blackgram	5	5
		Soybean	5	5
	CG Devbhog	Paddy	20	23
	Decorticator	Groundnut	5	5
		Mahua	2	5
	Mahua stamen removal machine	Mahua	10	10
	Power operated grain cleaner	Paddy	2	5
	Tractor Operated Baler	Paddy	10	16
Grand total			244.62	514

**** RP-Recommended practice, **FP-Farmers' practices***

Table 3.15: Summary of FLDs on Livestock and Poultry Production

Category	No. of FLDs	No. of Farmers	No. of Animals/units
Dairy and cattle			
Buffalo	1	10	10
Cattle (Cow)	1	10	10
Total	**2**	**20**	**20**
Sheep and Goat			
Goat	4	29	29
Disease management	1	12	48
Nutrition management	5	35	35
Total	**10**	**76**	**112**
Poultry			

Category	No. of FLDs	No. of Farmers	No. of Animals/units
Kadaknath	3	30	30
Quail	4	38	575
Total poultry	**7**	**68**	**605**
Grand Total	**19**	**164**	**737**

Table 3.16: Summary of FLDs on Fisheries

Thematic area	No. of FLD	Area (ha)	No. of farmers	Results		
				RP	FP	% Change
Air Breathing Fish Culture	1	10	10	27.12	11.63	57.12
Composite Fish Farming	2	2	13	34.13	24.17	58.14
Fish Production & Management	6	23.2	46	30.95	19.37	60.27
Integrated Farming System	1	1	8	28.50	19.20	45.40
Integrated Fish Cum Duck Culture	1	10	10	37.48	24.81	51.07
Grand Total	**11**	**46.2**	**87**			

**** RP-Recommended practice, **FP-Farmers' practices***

Table 3.17: Summary of FLDs on Women Empowerment

Name of technology demonstrated	No. of FLDs	No of farm women	Output (m^2/kg/hr)	Av. % reduction in drudgery		Av. % increase in efficiency
Durgery Reduction						
Ambika cono Weeder	1	10	40	42		78
Twin Wheel Hand Hoe	1	10	155	54		94
Milking Revolving Stool	1	5	6.5	27.32		66.15
Ring cutter	2	21	81.6	102.8		63.75
Grand Total	**5**	**46**				
Value Addition						
Name of Technology demonstrated	**No. of FLDs**	**No of farm women**	**Production per unit (kg)**	**Cost of input (Rs.)**	**Gross income (Rs.)**	**Net Return (Rs.)**
Aonla product	1	10	1	1250	3000	1750
Drumstick powder	1	13	2.1	550	1680	1130
Moringa leave powder	1	10	23	1600	2500	900
Grand Total	**3**	**33**				
Income generation						
Name of Technology demonstrated	**No. of FLDs**	**No of farm women**	**Production per unit**	**Cost of input (Rs.)**	**Gross income (Rs.)**	**Net Return (Rs.)**
Aonla Supari	1	13	9.5	135.78	2665	1275
Backyard Poultry Farming	2	15	245.5	2150	6872.5	4722.5
Crop production	1	10	21.4	31500	107000	75500
Flower Production	1	5	3.5	2040	26295	24255
Ginger Candy	2	22	0.55	10700	40500	29800
Kitchen Garden	2	20	12.39	5600	17324	11724
Lac production technology	2	25	13.39	24890	72775	47885
Millets production	4	40	6.075	9475	34875	25700
Mushroom Production	7	82	11.49	3973.7	11641.4	7667.7
Nutritional garden	1	10	3.726	2100	7452	5352
Poshtik Sattu	1	10	0.1	950	1500	550
Pro super Bag	2	25	6.425	200	8746	8546
Vegetable production	1	8	10	3700	15750	12050
Vermicompost production	4	43	24.625	4611.5	22875	18263.5

Grand Total	31	328					
Nutritional Security							
Name of Technology demonstrated	**No. of FLDs**	**No of farm women**	**Average of per capita consumption (gm/ day)**		**Iron (mg)**	**Calcium (mg)**	**BMI**
			FP	**RP**			
Amranthus seed	1	11	100	100	3.68	50.2	-
Biofortified Paddy	1	10	85	85	0.3	15	1
Biofortified Wheat	1	12	60	60	42.1	42.8	0.34
Daliya	2	20	90	92.5	172.0	127.55	9.05
Drumstick dry leaf powder	1	10	325	365	62.2	363.5	0.24
Green Leafy Vegetables	1	11	31	124	3.7	258.4	-
Moringa	1	5		32.1	8.36	601.62	-
Nutritional Garden Roof	1	19	221	110	0.6	37.1	-
Nutritional Kitchen Garden	31	443	163.0	286.9	67.4	338.94	8.06
Paushtik Chappatti	1	14	300	300	4.85	164	0
Paushtik laddu	2	32	-	50	164.1	278.18	4.73
Prevalence of Anemia among rural adolescent girls	1	10	-	150	11.2	59.7	19.7
Pro super bag for grain storage	1	10	31	124	3.7	258.4	-
Roof top garden	1	10	120	350	65	372	1
Sorghum	1	5	100	100	8	42	-
Sprouted cowpea feeding	1	10	150	25	6	851	19.2
Vegetable Soybean	1	12	-	100	2.7	2.7	-
Vegetable Minikit	2	20	94.6	147.1	56.0	117.95	21.6
Grand Total	**51**	**664**					

4. TRAINING AND CAPACITY BUILDING

Training has been considered a key component for updating the knowledge and imparting new skills to the participants. There was great emphasis on organizing training both for the farmers as well as for the trainers. During the year 2023, total 7562 training courses were organized benefitting 240450 participants (including farmers and farm women, rural youth, extension personnel) (Table 4.1).

A. Training organized by KVK

Table 4.1: Summary of training programmes conducted during 2023

Training	No. of Courses			No. of Participants		
	CG	MP	Total	CG	MP	Total
Farmers & Farm Women	2211	3584	**5795**	78611	105026	**183637**
Extension Personnel	153	284	**437**	4833	6320	**11153**
Rural Youth	509	270	**779**	16904	8142	**25046**
Sponsored	184	137	**321**	7187	4621	**11808**
Vocational	123	107	**230**	4154	4652	**8806**
Total	**3180**	**4382**	**7562**	**111689**	**128761**	**240450**

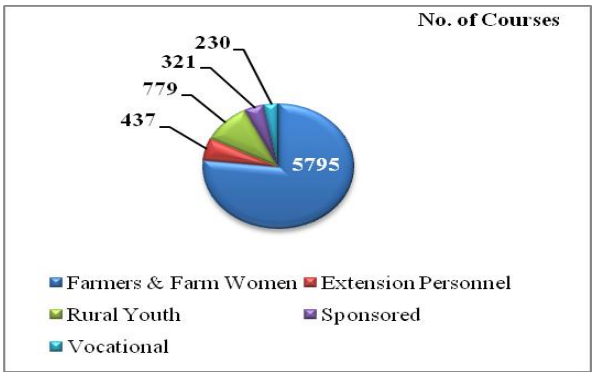

Fig: 4.1 Training Courses Organised (No.)

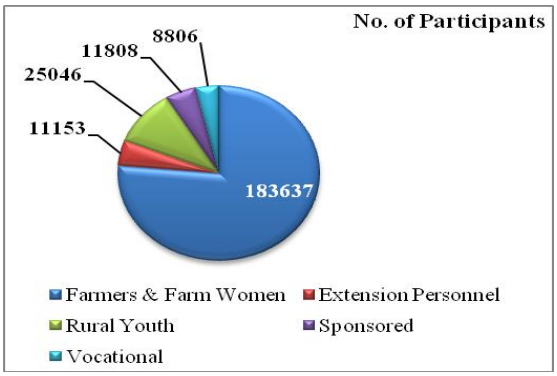

Fig: 4.2 Participants benefitted (No.)

Table 4.2: Training program organised by the KVKs for farmers and farm women

Major Theme	No. of Courses	General & Other		SC		ST		Total		Grand Total
		M	F	M	F	M	F	M	F	
Agril. Engineering	306	3777	1232	1018	518	1871	981	6666	2731	9397
Agro forestry	106	722	216	207	108	1662	882	2591	1206	3797
Capacity Building and Group Dynamics	339	4674	1484	1093	361	1504	455	7271	2300	9571
Crop Production	1654	21303	5478	5310	2366	13615	6609	40228	14453	54681
Fisheries	99	1101	435	363	127	426	282	1890	844	2734
Home Science/Women empowerment	605	3699	6641	922	2228	1204	2997	5825	11866	17691
Horticulture (Fruits)	237	2503	1064	749	478	1967	1222	5219	2764	7983
Horticulture (Medicinal and Aromatic Plants)	34	433	257	118	168	285	342	836	767	1603
Horticulture (Ornamental Plants)	44	461	161	152	101	393	310	1006	572	1578
Horticulture (Plantation crops)	26	284	216	35	65	127	90	446	371	817
Horticulture (Spices)	62	684	245	153	120	350	229	1187	594	1781

Major Theme	No. of Courses	General & Other		SC		ST		Total		Grand Total
		M	F	M	F	M	F	M	F	
Horticulture (Tuber crops)	43	396	213	114	72	316	147	826	432	1258
Horticulture (Vegetable Crops)	405	5128	1869	1188	699	2835	1184	9151	3752	12903
Livestock Production and Management	263	3481	851	837	230	1573	916	5891	1997	7888
Plant Protection	612	9031	1842	1688	591	2926	1499	13645	3932	17577
Production of Input at site	218	2407	1416	453	565	1254	894	4114	2875	6989
Soil Health and Fertility Management	742	10199	2892	2558	1035	5745	2960	18502	6887	25389
Grand Total	**5795**	**70283**	**26512**	**16958**	**9832**	**38053**	**21999**	**125294**	**58343**	**183637**

Table 4.3: Training program oragnised by the KVKs for Rural Youth

Major Theme	No. of Courses	General & Other		SC		ST		Total		Grand Total
		M	F	M	F	M	F	M	F	
Bee keeping	14	196	46	39	11	52	11	287	68	355
Commercial fruit production	9	128	64	40	60	77	32	245	156	401
Composite fish culture	5	129	14	9	2	15	3	153	19	172
Dairying	13	282	47	51	5	49	10	382	62	444
Fish harvest and processing technology	9	148	95	28	21	57	47	233	163	396
Fry and fingerling rearing	8	182	51	15	8	37	25	234	84	318
Integrated farming	30	493	473	115	106	256	499	864	1078	1942
Mushroom Production	119	705	740	128	317	267	474	1100	1531	2631
Nursery Management of horticulture crops	68	804	262	170	131	452	223	1426	616	2042
Pearl culture	2	74	30	20	10	30	10	124	50	174
Planting material production	15	248	88	50	27	150	186	448	301	749
Post harvest technology	17	125	149	53	57	116	93	294	299	593
Poultry farming	42	519	160	117	67	349	118	985	345	1330
Production of organic inputs	66	716	263	151	109	337	403	1204	775	1979
Protected cultivation of vegetable crops	36	395	208	120	63	281	144	796	415	1211
Quail farming	10	200	130	25	28	57	47	282	205	487
Repair and maintenance of farm machinery and implements	24	234	56	49	10	177	25	460	91	551
Rural crafts	3	21	23	4	4	15	9	40	36	76
Seed production	49	771	289	220	77	261	114	1252	480	1732
Sericulture	2	34	14	5	0	17	5	56	19	75
Sheep and goat rearing	8	85	16	57	2	99	35	241	53	294
Small scale processing	20	145	124	41	35	140	168	326	327	653
Tailoring, stitching, embroidery, dying etc.	2	10	31	-	-	-	-	10	31	41
Training and pruning of orchards	18	201	99	87	33	186	107	474	239	713
Value addition	54	358	385	156	114	620	258	1134	757	1891
Vermi culture	85	1269	405	159	88	370	321	1798	814	2612
Others	51	478	149	122	56	235	144	835	349	1184
Grand Total	**779**	**8950**	**4411**	**2031**	**1441**	**4702**	**3511**	**15683**	**9363**	**25046**

Table 4.4: Training programmes organized by the KVKs for Extension Personnel

Major Theme	No. of Courses	General & Other		SC		ST		Total		Grand Total
		M	F	M	F	M	F	M	F	
Agro forestry	10	75	26	32	16	48	32	155	74	229
Capacity building for ICT application	16	137	31	44	22	50	23	231	76	307
Care and maintenance of farm machinery and implements	15	111	41	54	33	30	21	195	95	290
Formation and Management of SHGs	7	103	36	1	1	19	27	123	64	187
Gender mainstreaming through SHGs	4	42	22	14	9	8	6	64	37	101
Group dynamics and farmers organization	4	32	8	5	10	62	7	99	25	124
Household food security	12	83	58	20	30	11	39	114	127	241
Information networking among farmers	4	92	30	9	18	46	18	147	66	213
Integrated farming system	2	4	8	3	1	5	53	12	62	74
Integrated nutrient management	51	602	302	148	94	343	139	1093	535	1628
Integrated pest management	88	847	258	242	123	417	160	1506	541	2047
Livestock feed and fodder production	16	170	82	70	25	58	50	298	157	455
Low cost and nutrient efficient diet designing	19	112	193	19	63	22	44	153	300	453
Management of farm animals	8	78	9	14	3	20	11	112	23	135
Natural Farming	10	161	37	11	1	32	4	204	42	246
Production and use of organic inputs	32	239	113	105	51	150	66	494	230	724
Productivity enhancement in field crops	76	907	246	253	125	388	127	1548	498	2046
Protected cultivation technology	24	283	112	113	36	102	32	498	180	678
Rejuvenation of old orchards	9	125	12	25	3	51	17	201	32	233
Women and Child care	14	19	170	4	53	2	85	25	308	333
Others	16	146	79	43	11	100	30	289	120	409
Grand Total	**437**	**4368**	**1873**	**1229**	**728**	**1964**	**991**	**7561**	**3592**	**11153**

Table 4.5: Sponsored Training programmes organized by the KVKs

Major Theme	No. of Courses	General & Others		SC		ST		Total		Grand Total
		M	F	M	F	M	F	M	F	
Agricultural extension	19	319	38	110	87	111	9	540	134	674
Crop production and management	232	2577	923	1401	607	2363	678	6341	2208	8549
Farm machinery	19	356	133	96	48	226	59	678	240	918
Home science	13	69	153	18	20	42	43	129	216	345
Livestock and fisheries	18	228	74	31	3	144	109	403	186	589
Natural Farming	6	52	18	24	9	65	23	141	50	191
Post harvest technology and value addition	14	205	200	39	9	62	27	306	236	542
Grand Total	**321**	**3806**	**1539**	**1719**	**783**	**3013**	**948**	**8538**	**3270**	**11808**

Table 4.6: Vocational Training programmes organized by the KVKs

Major Theme	No. of Courses	General & Others		SC		ST		Total		Grand Total
		M	F	M	F	M	F	M	F	
Agricultural extension	31	332	152	95	167	122	187	549	506	1055
Crop production and management	86	1176	1167	686	398	715	350	2577	1915	4492
Income generation activities	73	505	502	185	284	395	279	1085	1065	2150
Livestock and fisheries	24	154	169	46	67	162	100	362	336	698
Post harvest technology and value addition	16	79	105	30	32	78	87	187	224	411
Grand Total	**230**	**2246**	**2095**	**1042**	**948**	**1472**	**1003**	**4760**	**4046**	**8806**

Capacity Building Programmes

B. Capacity Building programmes by DES and ATARI

Table 4.7: Capacity building activities organized in identified area for KVK Staff by the Directorate of Extension Services 2023

Training Title	Date	Venue	No. of Participants KVKs	Collaborating Institute
Directorate of Extension Services, JNKVV, M.P.				
Knowledge, Empowerment and technical backstopping cum review workshop of KVK activity	January, 30-31, 2023	DES, JNKVV, Jabalpur. M.P.	39	ICAR-ATARI, Jabalpur
Knowledge, Empowerment and technical backstopping cum review workshop of KVK activity	March, 14-15, 2023	DES, JNKVV, Jabalpur. M.P.	40	ICAR-ATARI, Jabalpur
Total			**79**	
Directorate of Extension Services, Gwalior, M.P.				
Review workshop of KVKs, Admin and finance progress at ATARI, Jabalpur	31/05/2023 to 01/06/2023	ICAR-ATARI, Jabalpur	89	ICAR-ATARI, Jabalpur
National Workshop cum Awareness Programme on Bee Keeping	Dec, 08-09, 2023	RVSKVV, Gwalior	200	National Bee Board
Total			**289**	
Directorate of Extension Services, Raipur, C.G.				
Skill Training on Calibration of Seed Drill and Planter	June, 12-14,2023	DES, IGKV, Raipur	32	Faculty of Agricultural Engg. IGKV, Raipur
Presentation Skills for Professional Excellence	July, 24-26,2023	DES, IGKV, Raipur	102	EEI, AAU, Anand (Gujarat)
Total			**134**	
Grand Total			**502**	

Capacity building activities organized by ATARI in collaboration with ICAR Institutes in identified areas for KVK staff during January to December, 2023

ICAR-ATARI, Jabalpur organized 48 capacity building programmes in participatory mode for KVK scientists and programme assistants working in the KVKs for farming community. ATARI organized Action Plan Workshops for finalization of the action plan of the KVKs for 2023. This is very important activity as it gives direction to each KVK to move further for planned change through scheduled work plan. Review workshop of ICAR flagship programmes like ARYA and Seed hub was organized to discuss the previous progress as well as future action plan to the concerned KVKs.

Table 4.8: Capacity building activities organized by ATARI in collaboration with ICAR Institutes in identified areas for KVK staff during January to December, 2023

S.No.	Training/Workshop Title	Date	Venue	No. of Participants
1.	Meeting expansion of activities of Biotech-Kisan hub in eight districts in M.P. (Manthan project)	02/01/2023	ATARI, Jabalpur	13
2.	Drone project meeting	02/01/2023	ATARI, Jabalpur	12
3.	Technical and financial review meeting of Natural farming KVKs	03/01/2023	ATARI, Jabalpur	60
4.	Technical and financial review meeting of Natural farming KVKs	12/01/2023	ATARI, Jabalpur	56
5.	Annual Action plan workshop of CG KVKs	16-17/01/2023	ATARI, Jabalpur	28
6.	Annual Action Plan workshop of RVSKVV KVKs	19-20/01/2023	ATARI, Jabalpur	32
7.	Annual action plan workshop of JNKVV KVKs	23-24/01/2023	ATARI, Jabalpur	30
8.	Review workshop of Soil Science	14-15/02/2023	ATARI, Jabalpur	56
9.	Skill development programme meeting	16/02/2023	ATARI, Jabalpur	35
10.	Review workshop of animal science and fishery experts	23-24/02/2023	ATARI, Jabalpur	47
11.	Gender and nutrition review meeting	28/02/2023	ATARI, Jabalpur	56
12.	Regional workshop on out scaling of Natural farming at Burhanpur	27/03/2023	ATARI, Jabalpur	65
13.	Interaction with KVKs	04/04/2023	ATARI, Jabalpur	71
14.	Review workshop of Extension expert of KVKs	08-09/05/2023	ATARI, Jabalpur	53
15.	Review workshop of Home Scientist experts of KVKs	10-11/05/2023	ATARI, Jabalpur	54
16.	Interaction on Strengthening KVK and Agriculture Technology Management Agency (ATMA), Madhya Pradesh	13/05/2023	ATARI, Jabalpur	49
17.	Review meeting on CFLD-Pulses network project (Chiekpea group)	17/05/2023	ATARI, Jabalpur	75
18.	Review workshop of KVK admin and finance	30/05/2023	ATARI, Jabalpur	90
19.	Review workshop of KVKs, Admin and finance progress at ATARI,	31/05/2023	ATARI, Jabalpur	89

S.No.	Training/Workshop Title	Date	Venue	No. of Participants
	Jabalpur (offline) From 30 May to 1 June 2023			
20.	Review workshop of KVKs on administrative and financial progress	01/06/2023	ATARI, Jabalpur	67
21.	Meeting regarding millet recipe	20/06/2023	ATARI, Jabalpur	32
22.	Sustainable Agri. 2023-24 (Rainfed area) development (RAD)	21/07/2023	ATARI, Jabalpur	60
23.	Meeting for preparation for watching live of release of 14th installment of PM kisan at KVK	24/07/2023	ATARI, Jabalpur	73
24.	Virtual meeting with all KVKs for zonal workshop 2023, RAD, millet recipe and Meri Mati Mera Desh	10/08/2023	ATARI, Jabalpur	136
25.	30th Zonal workshop 2023 at CIAE, Bhopal	19-21/08/2023	ATARI, Jabalpur	250
26.	Thanks giving ceremony of 30th Zonal workshop of KVKs at CIAE-Bhopal	24/08/2023	ATARI, Jabalpur	30
27.	Workshop on roadmap for future extension research by KVKs	22/09/2023	ATARI, Jabalpur	53
28.	Meeting regarding CFLD pulses and oilseed and twist on SHS	16/10/2023	ATARI, Jabalpur	100
29.	Review workshop on FFP	20/10/2023	ATARI, Jabalpur	13
30.	Review meeting of ARYA	26/10/2023	ATARI, Jabalpur	29
31.	Review meeting of ARYA with KVK Gwalior	27/10/2023	ATARI, Jabalpur	2
32.	Review workshop of seed hub, pulses and oilseed	30/10/2023	ATARI, Jabalpur	95
33.	Interaction workshop for initiation of collaborative vegetable extension research	31/10/2023	ATARI, Jabalpur & IIVR Varanasi	5
34.	Workshop of natural farming	31/10/2023	ATARI, Jabalpur	55
35.	Viksit Bharat Sankalp Yatra	10/11/2023	ATARI, Jabalpur	100
36.	Viksit Bharat Sankalp Yatra Campaign	20/11/2023	ATARI, Jabalpur	111
37.	Virtual Meeting of Millionaire Farmer Information	22/11/2023	ATARI, Jabalpur	100
38.	Viksit Bharat Sankalp Yatra	18/12/2023	ATARI, Jabalpur	83

Glimpses of Events




Table 4.9: KVK Visit/Workshop/Training/Symposium attended by the ATARI Staff/Scientist

S. No.	Particulars	No. of Programmes
1	Trainings	4
2	Workshops	7
3	Conferences	5
4	Seminars/Webinar	111
5	KVK Visits	33
Total		**160**

Table 4.10: Capacity building of ATARI Staff

S.No.	Name of Employee	Designation	Discipline/ Section	Name of training programme attended	Duration (days)	Organizing Institute
1.	Dr. A.A. Raut	Scientist	Agricultural Extension	Research Priorities in Agricultural Extension	3	MANAGE, Hyderabad
				ICTs for Agricultural Extension: Advances and Trends	2	MANAGE, Hyderabad

Table 4.11: HRD fund Allocation and Utilization

Particulars	Budget RE (Rs in lakhs) allocated	Actual expenditure (Rs in lakhs)	Utilization (%)
ATARI	4.12	4.12	99.97
Total	**4.12**	**4.12**	**99.97**

Table 4.12: Footfall in KVKs of Zone IX

State	No. of KVKs	No. of Footfalls			
		Farmers	Officials	VIPs	Total
Chhattisgarh	28	98289	6057	668	105014
Madhya Pradesh	53	143128	5201	972	149301
Zone-IX	**81**	**241417**	**11258**	**1640**	**254315**

Training Activities

5. Extension Activities

Transfer of technology holds the key to rapid development and transformation of rural society. Krishi Vigyan Kendras, having districts as their jurisdiction, are playing crucial role in showing of technology and thereby enhancing productivity and income of the farming community. The various extension activities include demonstration for farmers group and exhibition reaching large number of farmers. To reach to wider masses, different means of information dissemination from traditional ones like poster, exhibition to new ICT tools like mobile messaging and social media are used. Broadly, extension activities conducted by KVKs includes– (i) Advice based like farm advisory services; lectures delivered as resource person; method demonstration, etc. (ii) Animal related like animal health and vaccination camp (iii) Literature based like exhibition, extension literature and popular article (iv) Media based like production of CD/DVD, Film show, Newspaper coverage, radio talks and TV talks (v) Meeting based like ex-trainee sammelan, celebration of important days, club meet, farmers' seminar, field day, group meet, gosthi, mela, SHG meeting and workshops (vi) Soil related activities like soil health camp and soil test campaign (vii) Visit based activities like diagnostic visits, exposure visits, farmers visit to KVK and scientists visits to farmers field. In all 144984 activities were conducted and 3643448 farmers, farm women, rural youth and extension workers were benefited (Table 7.1a & b).

Table 7.1a: Extension activities organized by the KVKs of Zone-IX

State	No. of activities organized	Grand Total		
		Male	Female	Total
MP	94993	1628935	692807	2321742
CG	49991	883002	438704	1321706
Total	**144984**	**2511937**	**1131511**	**3643448**

Table 7.1b: Category-Wise Participation in Extension Activities organized by the KVKs of Zone-IX

State	General & Others		SC		ST		Extension Officials		
	Male	Female	Male	Female	Male	Female	Male	Female	Total
MP	1001150	301574	180217	49499	383509	215267	64059	126467	2321742
CG	600989	185590	112629	27660	103901	82878	65483	142576	1321706
Total	**1602139**	**487164**	**292846**	**77159**	**487410**	**298145**	**129542**	**269043**	**3643448**

Table 7.2: Details of extension activities organized by the KVKs of Zone-IX

Row Labels	No.of activities organized	General & Others		SC		ST		Extension Officials		Grand		
		M	F	M	F	M	F	M	F	Total M	Total F	Total
Advisory Services	8516	813494	153145	84948	18950	279087	71747	24673	69239	1202202	313081	1515283
Agri mobile clinic	1371	916	995	347	57	217	608	333	790	1813	2450	4263
Animal Health Camp	1336	470	1736	55	46	111	1448	462	1854	1098	5084	6182
Awareness programme	1570	38116	15169	28698	10098	7758	3864	1764	1363	76336	30494	106830
Diagnostic visits	4576	12712	5972	5510	1709	3708	4014	3216	4341	25146	16036	41182
Exhibition	6347	4605	212	118	184	10025	113	101	1123	78124	45718	123842

Row Labels	No.of activities organized	General & Others		SC		ST		Extension Officials		Grand		
		M	F	M	F	M	F	M	F	Total M	Total F	Total
		1	49	61	3		96	87	0			
Exposure visits	1513	7521	3230	1463	275	1444	1573	1467	2199	11895	7277	19172
Extension literature	12575	41862	28897	10672	3065	16011	21479	7489	21045	76034	74486	150520
Ex-trainees Sammelan	408	2017	912	481	150	769	554	397	473	3664	2089	5753
Farm Science Club	509	564	111	245	57	248	57	132	94	1189	319	1508
Farmers Seminar/Workshop	1091	5208	2480	1324	241	1614	1436	1455	1510	9601	5667	15268
Farmers visit to KVK	28211	70206	38412	14870	3731	19935	24285	13302	24230	118313	90658	208971
Film Show	6687	29461	12346	1940	689	2629	7267	4293	10060	38323	30362	68685
Group Meetings/ Discussion	1281	13865	2643	1879	360	1929	1586	1668	1918	19341	6507	25848
Hon'ble PM of India Programme on Man Ki Bat telecast	6	135	53	49	26	-	-	15	5	199	84	283
Hon'ble PM of India's programme on Kisan Samman Nidhi	1	50	9	19	6	-	-	7	2	76	17	93
Hon'ble PM of India's programme on Shri Anna (Millets) Sammelan & Natural Farming	1	40	11	21	4	-	-	7	-	68	15	83
Interface	89	1	90	11	4	15	100	5	105	32	299	331
International millet sawareness programme	4582	3654	8236	2	2	4	4586	3656	8242	7316	21066	28382
Kisan bhagidari prathmikta hamari	1	50	20	100	70	-	-	30	10	180	100	280
Kisan Ghosthi/Sammelan	7057	14858	13317	2898	1363	3710	8458	5017	11126	26483	34264	60747
Kisan Mela	3155	42056	15658	8833	2745	6089	6419	6603	11121	63581	35943	99524
Krishi Mahotsav	23	2326	849	191	76	387	160	332	191	3236	1276	4512
Lectures delivered as resource persons	15076	92291	29961	20780	2893	17759	25317	7889	19831	138719	78002	216721
Mahila Mandals conveners meetings	728	2229	3754	388	271	677	1328	589	1422	3883	6775	10658
Meri Mati Mera Desh	3	83	16	28	9	0	0	0	0	111	25	136
Method Demonstrations	1602	5698	3472	1371	344	1673	1659	1484	2179	10226	7654	17880
Millet recipe competitions (other)	3	-	-	-	-	-	-	1	2	1	73	74
Millet Awareness Programme	2	63	-	-	-	-	-	3	-	82	0	82
Mission Life Style for	3	48	19	27	3	-	-	3	-	78	22	100

Row Labels	No.of activities organized	General & Others		SC		ST		Extension Officials		Grand		
		M	F	M	F	M	F	M	F	Total M	Total F	Total
Environment(LIFE)												
Newspaper coverage	282	8116	2777	10136	3427	31925	23909	2192	1938	52369	32051	84420
Partheniumeradication week	254	364	618	2	2	4	256	366	622	736	1498	2234
Plant/animal health camps	969	63872	1323	9784	262	3337	1086	1081	1956	78074	4627	82701
Popular articles	84	14252	9538	11589	9055	23452	16891	790	796	50083	36280	86363
Pradhanmantri phasal beema yojana	83	2022	706	449	120	770	215	187	107	3428	1148	4576
Radio talks	13	691	87	236	45	47	46	202	36	1176	214	1390
TV talks	18	67	34	22	44	148	69	110	22	347	169	516
Scientific visit to farmers field	11555	14832	13838	5556	2029	8212	12899	6829	16338	35429	45104	80533
Self Help Group conveners meetings	703	1171	2097	379	286	408	1055	839	1266	2797	4704	7501
Technology Week	7	76	26	48	14	6	4	17	7	147	51	198
Soil health Camp	953	23945	11205	374	132	639	1082	581	1087	25539	13506	39045
Soil health day	1	15	7	20	18	-	-	3	2	38	27	65
Worldsoilday	56	14	70	2	5	7	58	19	77	42	210	252
Soil test campaigns	6226	5581	9357	2635	1403	4703	8519	4211	12391	17130	31670	48800
SwacchtaDiwas	49	706	269	251	93	20	16	80	42	1057	420	1477
Vigilance awareness week	2	17	38	6	2	-	-	11	6	34	46	80
Celebration of National Nutrition Month 2023	1	10	11	-	3	-	3	0	2	10	19	29
Viksit Bharat Sankalp Yatra	5980	2008	7988	2033	1300	3333	8013	3308	11321	10682	28622	39304
Workshop	828	1363	1492	409	98	593	1183	1110	1622	3475	4395	7870
Special day celebration (World food day, Environmental day, Farmers day, World soil health day, Education day, Krishak mahila diwasetc.)	6980	41720	25622	10350	3149	13391	12047	8094	12270	73555	53088	126643
International Millet Conference	1	112	11	-	-	-	-	6	4	118	15	133
Har Ghar Tiranga and Meri Mati Mera Desh Campaign on	2	31	17	1	-	-	-	-	2	32	19	51
Others (pl.Specify)	1614	175109	37202	39537	6583	20616	11453	3027	2547	238289	57785	296074
Grand Total	**144984**	**160139**	**487164**	**292846**	**77159**	**487410**	**298145**	**129542**	**269043**	**2511937**	**1131511**	**3643448**

6. Production of quality seed and planting materials

Empirical evidences shows, that, non-availability of the quality seeds in adequate amount happened to be the major constraints to the farmers for enhancing the productivity. Therefore, it was taken as challenge and appropriate steps were taken at the KVKs for helping the farmers in this regard. With continuous efforts, a considerable progress has been made and there is progress in seed quantity along with planting materials as shown in the following tables. The KVKs of the zone-IX produced 15563.19 q of seed and 32.63 lakhs planting materials of different crops like cereals, pulses, oilseeds, vegetables, medicinal plants, fruits, etc. are provided to the farmers. Besides, KVKs also produced bio-products and livestock products at their farms.

Table6.1: Seed and planting materials produced by the KVKs in Zone-IX

State	2023	
	Seed (q)	Planting materials (no)
Chhattisgarh	5668.56	1165257
Madhya Pradesh	9894.63	2097813
Total	**15563.19**	**3263070**

Table 6.2: State-wise details of seeds produced by the KVKs

State	Quantity (q)	Approximate Value (Rs.)	Provided to Farmers (No.)	Villages Covered (No.)
Chhattisgarh	5668.56	23599490.88	5668	200
Madhya Pradesh	9894.63	70692925.00	9416	452
Total	**15563.19**	**94292415.88**	**15084**	**652**

Table 6.3: State-wise details of planting materials produced by the KVKs

State	Quantity (No.)	Approximate Value (Rs)	Farmers Covered (No.)
Chhattisgarh	1165257	4986932	17805
Madhya Pradesh	2097813	3112246	22345
Total	**3263070**	**8099178**	**40150**

Table 6.4: State-wise details of Livestock strains and fingerlings production produced by the KVKs

State	Quantity (No./ lit/kg)	Approximate Value (Rs)	No. of Beneficiaries
Chhattisgarh	180310	7466923	2332
Madhya Pradesh	1799587	4831828	1231
Total	**1979897**	**12298751**	**3563**

A. Seed Production by KVKs

Table 6.5: Status of Seed production (q) in Zone-IX

Crop Category	Crop	Quantity (q)	Value (Rs)	Provided to No of Farmers
Aromatic Crop	Lemon grass	500	50000	-
Cereals	Barley	63.87	280388	-
Cereals	Barnyard Millet	1	8000	46
Cereals	Finger Millet	32.21	151417.04	106
Cereals	Kodo	11.25	86000	30
Cereals	Maize	67.5	129000	1
Cereals	Paddy	4429.96	15152971	3649

Crop Category	Crop	Quantity (q)	Value (Rs)	Provided to No of Farmers
Cereals	Pearl Millet	0.4	4800	20
Cereals	Wheat	3197.34	15673927	2528
Cereals	Barley	63.87	280388	0
Flower	Marigold	5.012	18200	110
Flower	Tuberose	50	5000	-
Fodder	Napier Grass	300	60390	2
Fruits	Guava	25.35	137813	20
Fruits	Jack fruit	125	3750	10
Fruits	karonda	380	11350	20
Fruits	Litchi	5.5	33000	0
Fruits	Mango	49.62	173825	0
Fruits	Papaya	34.00	5876	43
Green Manure	Sunhemp	8.85	39400	11
Oilseeds	Niger	0.5	7500	25
Oilseeds	Sesame	0.82	12300	61
Oilseeds	Groundnut	14.5	79700	30
Oilseeds	Linseed	126.31	802729	117
Oilseeds	Mustard	103.01	678325	321
Oilseeds	Niger	49.5	404925	55
Oilseeds	Safflower	1.74	11310	-
Oilseeds	Soybean	2478.74	28245285.14	1031
Plantation Crop	Coffee	150	7500	0
Pulses	Blackgram	83.33	892750	264
Pulses	Chickpea	2014.29	20098839	755
Pulses	Fieldpea	40	412550	80
Pulses	Greengram	165.31	1700610	81
Pulses	Horsegram	250	2800000	200
Pulses	Lathyrus	4.1	85500	-
Pulses	Lentil	60.8	757500	14
Pulses	Pigeonpea	212.07	1078005	430
Spices	Chilli	0.028	8340	94
Spices	Coriander	20.05	1186120	255
Spices	Fenugreek	1.27	14400	72
Spices	Garlic	12	96000	4
Spices	Ginger	102.2	715555	6
Spices	Turmeric	191.87	723520.2	126
Tuber	Elephant Foot Yam	4.3	5000	200
Tuber	Potato	103.56	185000	-
Tuber	Sweet potato	33	165	1
Vegetables	Amaranthus	10.0206	2560	85
Vegetables	Bitter gourd	0.0099	5940	65
Vegetables	Bottle gourd	0.0253	2530	141
Vegetables	Brinjal	0.9673	291920	743
Vegetables	Cabbage	0.01	100000	1005
Vegetables	Carrot	0.011	1100	28
Vegetables	Cowpea	26.6	261400	219
Vegetables	Okra	3.604	62170	202
Vegetables	Onion	5.78	19000	28
Vegetables	Pea	3.06	7220	20
Vegetables	Pumpkin	0.007	700	58

Crop Category	Crop	Quantity (q)	Value (Rs)	Provided to No of Farmers
Vegetables	Radish	0.9025	56537.5	241
Vegetables	Ridge gourd	0.65	325000	120
Vegetables	Spinach	1.18	22963	188
Vegetables	Sponge gourd	0.0109	1090	82
Vegetables	Tomato	0.2015	98750	1041
Total		**15563.19**	**94292415.88**	**15084**

Table 6.6: Status of seed production (q) in Madhya Pradesh

Crop Category	Crop	Quantity (q)	Value (Rs)	Provided to No of Farmers
Cereals	Barley	63.87	280388	-
Cereals	Barnyard Millet	1	8000	46
Cereals	Finger Millet	1.6	19200	55
Cereals	Kodo	5.25	53000	30
Cereals	Paddy	2055.66	7099988	2730
Cereals	Pearl Millet	0.40	4800	20
Cereals	Wheat	3005.99	15241862.5	1965
Flower	Marigold	4.51	16200	110
Flower	Tuberose	50	5000	-
Fruits	Guava	25	563	-
Fruits	Mango	49	49125	-
Fruits	Papaya	17.00	5536	43
Oilseeds	Niger	0.5	7500	25
Oilseeds	Sesame	0.82	12300	61
Oilseeds	Groundnut	12	67200	30
Oilseeds	Linseed	25.16	183563	100
Oilseeds	Mustard	23.42	170435	272
Oilseeds	Niger	17	19500	50
Oilseeds	Soybean	2279.19	25609134	781
Pulses	Blackgram	56.45	650630	159
Pulses	Chickpea	1701.89	17426620	615
Pulses	Field pea	37	230000	80.9
Pulses	Greengram	142.55	1487090	81
Pulses	Lentil	58.8	745500	14
Pulses	Pigeonpea	181.57	803005	350
Spices	Chilli	0.0178	5340	94
Spices	Coriander	0.398	14020	159
Spices	Fenugreek	0.552	6750	41
Spices	Garlic	12	96000	4
Spices	Ginger	0	80000	-
Spices	Turmeric	55.97	110520	44
Vegetables	Amaranthus	0.02	2060	85
Vegetables	Bitter gourd	0.01	5940	65
Vegetables	Bottle gourd	0.03	2530	141
Vegetables	Brinjal	0.02	6920	110
Vegetables	Cabbage	0.01	100000	-
Vegetables	Carrot	0.01	1100	28
Vegetables	Okra	0.80	9870	130
Vegetables	Onion	5.78	19000	28
Vegetables	Pea	3.06	7220	20

Crop Category	Crop	Quantity (q)	Value (Rs)	Provided to No of Farmers
Vegetables	Pumpkin	0.01	700	58
Vegetables	Radish	0.06	1837.5	91
Vegetables	Spinach	0.22	10138	178
Vegetables	Sponge gourd	0.02	1090	82
Vegetables	Tomato	0.04	15750	441
Total		**9894.66**	**70692925**	**9416.9**

Table 6.7: Status of Seed production (q) in Chhattisgarh

Crop Category	Crop	Quantity (q)	Value (Rs)	Provided to No of Farmers
Cereals	Finger Millet	30.61	132217	51
Cereals	Kodo	6	33000	-
Cereals	Maize	67.5	129000	1
Cereals	Paddy	2374.29	8052983	919
Cereals	Wheat	191.35	432064	563
Flower	Rose	0.5	2000	-
Flower	Marigold	0.5	2000	-
Fodder	Napier Grass	300	60390	2
Fruits	Guava	0.35	137250	20
Fruits	Jackfruit	125	3750	10
Fruits	Karonda	380	11350	20
Fruits	Litchi	5.5	33000	0
Fruits	Mango	0.62	124700	0
Fruits	Papaya	17	340	0
Green Manure	Sunhemp	8.85	39400	11
Aromatic Crop	Lemon grass	500	50000	-
Oilseeds	Groundnut	2.5	12500	-
Oilseeds	Linseed	101.15	619166	17
Oilseeds	Mustard	79.59	507890	49
Oilseeds	Niger	32.5	385425	5
Oilseeds	Safflower	1.74	11310	-
Oilseeds	Soybean	199.55	2636151	250
Pulses	Blackgram	26.88	242120	105
Pulses	Chickpea	312.4	2672219	140
Pulses	Field pea	3	182550	-
Pulses	Greengram	22.76	213520	-
Pulses	Horsegram	250	2800000	200
Pulses	Lathyrus	4.1	85500	-
Pulses	Lentil	2	12000	-
Pulses	Pigeonpea	30.5	275000	80
Spices	Chilli	0.01	3000	-
Spices	Coriander	19.65	1172100	96
Spices	Fenugreek	0.72	7650	31
Spices	Ginger	102.2	635555	6
Spices	Turmeric	135.9	613000	82
Tuber	Elephant Foot Yam	4.3	5000	200
Tuber	Potato	103.56	185000	-
Tuber	Sweet potato	33	165	1
Vegetables	Amaranthus	10	500	-

Crop Category	Crop	Quantity (q)	Value (Rs)	Provided to No of Farmers
Vegetables	Brinjal	0.95	285000	633
Vegetables	Cowpea	26.6	261400	219
Vegetables	Okra	2.8	52300	72
Vegetables	Radish	0.85	54700	150
Vegetables	Ridge Gourd	0.65	325000	120
Vegetables	Spinach	0.96	12825	10
Vegetables	Tomato	0.17	83000	600
Total		**5668.56**	**23599490.88**	**5668.56**

B. Planting Materials

Table 6.8: Status of planting materials production (no) in Zone-IX

Crop Category	Crop	Quantity (No.)	Value (Rs)
Commercial	Mulberry	150	3000
Flowers	Chandni	149	3725
Flowers	Gaillardia	2800	2800
Flowers	Gladiolus corms	10	100
Flowers	Hibiscus	236	5900
Flowers	Jasmine	100	2000
Flowers	Jason	100	2000
Flowers	Rose	4310	18915
Flowers	Sewanti	150	3040
Flowers	Champa	31	1530
Flowers	Gurhal	29	870
Flowers	Marigold	164917	181290
Fodder crop	Napier	623730	632990
Forest Species	Arjun	36	50
Forest Species	Bael	69	4140
Forest Species	Baheda	4	120
Forest Species	Bamboo	6205	247950
Forest Species	Casia	21	630
Forest Species	Casurina	500	15000
Forest Species	Gamhar	100	2000
Forest Species	Gulmohar	89	360
Forest Species	Hanuman fal	37	1850
Forest Species	Harishrangar	3	90
Forest Species	Kachnar	100	2000
Forest Species	Karanj	762	11770
Forest Species	Khamer	9	270
Forest Species	Mahua	73	1825
Forest Species	Meethi Neem	167	3635
Forest Species	Neem	2054	25030
Forest Species	Peepal	50	1000
Forest Species	Raintree	6	180
Forest Species	Sagon	25	625
Forest Species	Silver Oak	96	4800
Forest Species	Sisam	178	40
Forest Species	Umar	25	500
Fruits	Jamun	1556	24510
Fruits	Pomegranate	0	2000

Crop Category	Crop	Quantity (No.)	Value (Rs)
Fruits	Almond	61	1030
Fruits	Aonla	6281	167955
Fruits	Banana	4	33800
Fruits	Chironee	18	540
Fruits	Citrus	2270	136150
Fruits	Custard apple	2861	87540
Fruits	Date palm	100	5000
Fruits	Dragon Fruit	115	7550
Fruits	Guava	17853	648075
Fruits	Jack fruit	2601	54590
Fruits	Karonda	6220	160540
Fruits	Lasora	50	1000
Fruits	Lemon	12242	376620
Fruits	Lime	4484	189630
Fruits	Litchi	5000	50000
Fruits	Mandarin	53	3180
Fruits	Mango	21519	867305
Fruits	Orange	69	4140
Fruits	Papaya	22950	440000
Fruits	Passion fruit	97	4850
Fruits	Pineapple	100	5000
Fruits	Pomegranate	1536	39875
Fruits	Sapota	1100	52000
Fruits	Semialata	2000	20000
Fruits	Tamarind	1331	26030
Fruits	Woodapple	1216	24320
Medicinal and Aromatic	Giloy	500	7500
Medicinal and Aromatic	Lemon grass	500	7500
Medicinal and Aromatic	Tulsi	18	20
Medicinal Crop	Beetal leaf	37	925
Ornamental plants	Sita Ashok	3	60
Ornamental plants	Ashok	1106	16100
Ornamental plants	Bamboo	100	1000
Ornamental plants	Bela	67	1675
Ornamental plants	Bottle Plam	5	550
Ornamental plants	Bougainvillea	18	450
Ornamental plants	Calendula	31	31
Ornamental plants	Chameli	55	1375
Ornamental plants	Coleous	230	6900
Ornamental plants	Crotan	98	2440
Ornamental plants	Duranta	1600	8000
Ornamental plants	Golden Duranta	108	2700
Ornamental plants	Hemelia	65	3250
Ornamental plants	Jaistropha	16	800
Ornamental plants	Kund	3	75
Ornamental plants	Madhu malti	58	1450
Ornamental plants	Manda	30	1500
Ornamental plants	Manokamni	12	300
Ornamental plants	Morpankhi	53	1325
Ornamental plants	Rat rani	18	40
Ornamental plants	Tikoma	82	2460

Crop Category	Crop	Quantity (No.)	Value (Rs)
Ornamental plants	Vidya	24	2160
Others	Others	15400	143070
Plantation	Coffee	150	7500
Plantation Crop	Areca Palm	66	7260
Spices	Ajwoin	22	4400
Spices	Chilli	458855	621541
Spices	Curry Leaf	504	7740
Spices	Turmeric	12	72000
Vegetable Seedling	Bitter gourd	500	2500
Vegetable Seedling	Bottle gourd	5316	6710
Vegetable Seedling	Brinjal	290237	394781
Vegetable Seedling	Broccoli	25100	19150
Vegetable Seedling	Cabbage	151373	158487
Vegetable Seedling	Capsicum	11300	22100
Vegetable Seedling	Cauliflower	209181	219992
Vegetable Seedling	Desi	1100	1100
Vegetable Seedling	Drumstick	27258	502050
Vegetable Seedling	Knol-khol	4000	4000
Vegetable Seedling	Muskmelon	58000	59600
Vegetable Seedling	Onion	549250	241600
Vegetable Seedling	Pointed gourd	8100	243000
Vegetable Seedling	Pumpkin	5000	7250
Vegetable Seedling	Sponge gourd	455	3410
Vegetable Seedling	Tomato	505846	612146
Vegetable Seedling	Watermelon	10200	51950
Total		**3263070**	**8099178**

C. Production of Livestock materials

Table 6.9: Status of Livestock Production in KVKs under Zone-IX during 2022

Category	Name of the animal / bird / aquatics	Breed	Type of Produce	unit (kg/qt./ liter/no)	Quantity	Value (Rs.)	No. of Beneficiaries
Dairy animals	Breeding bull	Gir	Bull	No	29	3900	26
Dairy animals	Breeding bull	Sirohi	Bull	No	8	-	-
Dairy animals	Buffaloes	Murrah	Milk	Liter	1650	90750	19
Dairy animals	Cow	Gir/Sahiwal	Calves	No	8	-	-
Dairy animals	Cow	Sahiwal	Calves	No	19	138000	20
Dairy animals	Cow	Gir	Heifers	No	4	-	-
Dairy animals	Cow	Gir	Milk	Liter	17781	771939	71
Dairy animals	Cow	Gir & HF	Milk	Liter	2550	114750	22
Dairy animals	Cow	Gir, Frieswal	Milk	Liter	2760	151800	19
Dairy animals	Cow	Gir, Jarsi	Milk	Liter	4543	135252	-
Dairy animals	Cow	Gir/Sahiwal	Milk	Liter	9016	147621	53
Dairy animals	Cow	Gir/Sahiwal/Crossbreed	Milk	Liter	100	4000	3
Dairy animals	Cow	HF	Milk	Liter	3007	125315	16
Dairy animals	Cow	Hybrid	Milk	Liter	1528	61120	0
Dairy animals	Cow	Sahiwal	Milk	Liter	13185	373594	817
Dairy animals	Cow	Sahiwal,HF	Milk	Liter	3334	160032	26
Dairy animals	Cow	Gir	Ox	No	2	8000	1

Category	Name of the animal / bird / aquatics	Breed	Type of Produce	unit (kg/qt./ liter/no)	Quantity	Value (Rs.)	No. of Beneficiaries
Dairy animals	Cow	Gir, Frieswal	Paneer	Kg	24	8640	19
Dairy animals	Goats	Jamunapari & Sirohi	Bucks	No	8	-	8
Dairy animals	Goats	Sirohi	bucks	No	3	30000	-
Dairy animals	Goats	Barbari	Goat	No	8	-	-
Dairy animals	Goats	Black Bengal	Goat	No	6	50000	-
Dairy animals	Goats	Jamunapari	Goat	No	1	20000	-
Dairy animals	Goats	Osmanabadi	Goat	No	20	117600	20
Dairy animals	Goats	Barbari	Kids	No	9	-	-
Dairy animals	Goats	Jamunapari, Barbari & Sirohi	Kids	No	10	50000	-
Dairy animals	Goats	Sirohi	Kids	No	7	34300	4
Dairy animals	Goats	Barbari	Meat	No	17	39150	7
Dairy animals	Goats	Osmanabadi	Meat	kg	1580	400000	40
Dairy animals	Goats	Sirohi	Meat	Kg	1154	606980	20
Dairy animals	Goats	Black Bengal	Meat	kg	32	5657	4
Fisheries	Exotic carp	Common carp,Silver Carp	fish	Kg	30	3000	1
Fisheries	Exotic carp	Silver carp	food fish	Kg	14	1100	2
Fisheries	Indian carp	Tilapiya, Pangas	Fish	Kg	200	40000	-
Fisheries	Indian carp	Rohu, Catla, Mrigal	food fish	Kg	1791350	193660	280
Poultry	Ducks	Khaki campbell and White Pekin	Chicken	No	37	9250	16
Poultry	Ducks	Khaki campbell and White Pekin	Chicks	No	54	4350	5
Poultry	Ducks	Khaki campbell and White Pekin	Ducklin g	No	412	20610	10
Poultry	Ducks	American Pekin	Ducks	No	50	25000	-
Poultry	Ducks	Duck	Ducks	No	500	10000	50
Poultry	Japanese quail	Japanese quail	Birds	No	1600	128000	40
Poultry	Japanese quail	Japanese quail	Chicken	No	1716	68640	45
Poultry	Japanese quail	Japanese quail	Chicks	No	20847	301297	68
Poultry	Japanese quail	Japanese quail	Eggs	No	1556	1945	5
Poultry	Japanese quail	Japanese quail	Meat	No	116	11350	-
Poultry	Poultry	Kadaknath	Birds	No	377	84000	200
Poultry	Poultry	Kadaknath & Pratapdhan	Birds	No	9	5400	-
Poultry	Poultry	Narmdanidhi	Birds	kg	740	185000	168
Poultry	Poultry	Coloured bird	Chicken	Kg	50	14000	1
Poultry	Poultry	Kadaknath	Chicken	kg	1488	658236	166
Poultry	Poultry	Kadaknath & Narmada Nidhi	Chicken	Kg	400	80000	25

Category	Name of the animal / bird / aquatics	Breed	Type of Produce	unit (kg/qt./ liter/no)	Quantity	Value (Rs.)	No. of Beneficiaries
Poultry	Poultry	Sonali	Chicken	kg	100	25000	15
Poultry	Poultry	Kadaknath & Quail	Chicken	kg	140	50000	-
Poultry	Poultry	Kadaknath	Chicks	No	92446	6636130	955
Poultry	Poultry	Quail	Chicks	No	1015	18750	100
Poultry	Poultry	Vanraj	Chicks	No	100	2000	3
Poultry	Poultry	Kadaknath	Eggs	No	2147	73633	193
Total					**1979897**	**12298751**	**3563**

D. Production of Bio-products

Table 6.10: Production of bio-agents, pesticides, fertilizers by KVKs under Zone-IX

Category	Name of the Product	Qty (in Kg)	Qty (In No.)	Value (Rs.)	Provided to no. of Farmers
Bio Agents (Tricho card)	*Trichogramma chilonis*	-	2000	-	-
Bio Agents (Worms)	Earthworms	2632.75	-	1096825	105960
Bio Fertilizers	Vermicompost	1270171.31	-	5423433	15532
Bio Fertilizers	Phosphate solublizing Bacteria (PSB)	2104	-	231296	140988
Bio Fertilizers	Rhizobium	1688	-	158622	21595
Bio Fertilizers	NADEP Fertilizers	25350	-	622775	103
Bio Fertilizers	Azatobactor	646	-	78890	183
Bio Fertilizers	Azospirillum	508	-	55328	105
Bio Fertilizers	Azolla	7798.75	-	125580	660
Bio Fertilizers	Acetobactor	20	-	5320	10
Bio Fertilizers	*Pseudomonas fluorescens*	20	-	6420	4
Bio Fertilizers	Biodigester	856	-	257415	454
Bio Fertilizers	Sanjeewani Khad	2000	-	10000	5
Bio Fertilizers	Blue green algae	100	-	-	5
Bio Fertilizers	Compost	34200	-	219500	102
Bio Fertilizers	Jeevamrit	1830	-	22620	309
Bio Fertilizers	Potash Solubilizing Bacteria (KSB)	160	-	47040	100
Bio Fertilizers	Zinc Solubilizing Bacteria (ZSB)	10	-	2940	10
Bio Fertilizers	Beejamrit	260	-	2400	35
Bio Food	Honey	100	-	30000	50
Bio Pesticides	*Beauveria bassiana*	60.8	-	38760	90
Bio Pesticides	*Metarhizium anisopliae*	218.6	-	153020	80
Bio Pesticides	Neem extract	1202.5	-	201800	205
Bio Pesticides	*Trichoderma viride*	2088	-	331380	1155
Bio Pesticides	Verticillium	0.4	-	280	1
Bio Pesticides	Neem powder	3320	-	52500	840

Category	Name of the Product	Qty (in Kg)	Qty (In No.)	Value (Rs.)	Provided to no. of Farmers
Bio Pesticides	Neemastra	200	-	-	-
Bio Pesticides	Brahmastra	200	-	-	-
Bio Pesticides	Agneyastra	200	-	-	-
Bio Pesticides	Neemastra, Brahmastra, Agniastra	400	-	20	160
Bio Pesticides	Tobacco extract	1700	-	53500	65
Bio Pesticides	*Trichoderma harjinum*	3700	-	29966	24
Bio Pesticides	HaNPV	-	10	2000	84
Bio Pesticides	*Pseudomonas fluorescens*	335	-	107659	310
Traps	Baco Lures	-	10	2000	136
Traps	Heli Lures	-	35	3000	146
Traps	Leucin Lures	-	25	2000	10
Others	Cow dung (dry)	37198	9650	56905	12038
Others	Mushroom spawn	1416.3	1338	163256	4927
Others	Mushroom	99.1	-	13525	67
Others	Wheat Straw	50	-	50000	5
Others	Other	-	4700	-	23500
Total		**1402844**	**17768**	**9657975**	**330053**

7. Soil, Water and Plant Analysis

Soil and water testing is an important activity of KVK for improving the soil fertility and sustainability of agricultural production in the region. Keeping the facts in view, KVKs are testing soil and water samples as well as farmers samples received directly or through line departments.

Soil Samples:

During the reporting year, KVKs of Madhya Pradesh and Chhattisgarh analyzed **28251** soil samples benefitting **42726** farmers of **2091** villages. The large numbers of samples were tested in the state of Madhya Pradesh by the KVKs (Table 7.1)

Table 7.1: Summary of soil samples tested by the KVKs

State	Soil Samples analyzed				
	No. of Soil Samples analyzed	No. of Farmers benefitted	No. of Villages covered	Amount realized (Rs.)	No. of Soil Health Cards issued
Chhattisgarh	3914	13986	274	550	12135
Madhya Pradesh	24337	28740	1817	1283650	22686
Total	**28251**	**42726**	**2091**	**1284200**	**34821**

Water Samples:

KVKs of Madhya Pradesh analyzed 30 water samples benefitting farmers of 03 villages and KVKs of Chhattisgarh analyzed 73 water Samples benefitting farmers of 61 villages.

Table 7.2: Summary of water samples tested by the KVKs

State	Water Samples analyzed			
	No. of Water Samples analyzed	No. of Farmers benefitted	No. of Villages covered	Amount realized (Rs.)
Chhattisgarh	73	73	61	-
Madhya Pradesh	30	30	3	5000
Total	**103**	**103**	**64**	**5000**

8. Technological Backstopping through Literature and Media

8.1 Newsletter

During the year 2023, total 70 KVK published four issues of Newsletter with 1,02,163 number of copies and distributed to 95,429 farmer.

KVKs has published 225 abstracts and 156 research papers in reputed journals. Apart from this KVKs also published books, book chapters,booklets and popular articles etc. (Table 8.2)

Table 8.1: State-wise Newsletter published by the KVKs

State	No. of KVKs	No. of issues	Number of copies printed	Number of copies distributed
Chhattisgarh	23	4	23078	22355
Madhya Pradesh	47	4	79085	73074
Total	**70**		**102163**	**95429**

8.2. Publications

Table 9.2: Category-wise literature published and distributed by the KVKs

Particulars	KVK (No.)	Number
Abstract	69	255
Research Paper	69	156
Book / Manual	68	27
Book Chapter	69	67
Booklet	69	51
Leaflets/ Folder/ Pamphlet	70	1360
Popular article	69	335
Technical Bulletin	69	174
Technical Report	70	285
Training Manual	69	43
Year Planner	68	42
CD/DVD/VCD	69	818
Others (pl. specify)	67	16
Grand Total	**895**	**3629**

9. Flagship Programmes

Attracting and Retaining Youth in Agriculture (ARYA)

Nodal Sceintist: Dr. A.A Raut, Scientist (AE)

ARYA project is operational in 12 KVKs in Madhya Pradesh and Chhattisgarh. Rural youths were trained in different agricultural and allied enterprises under ARYA. During 2023, total 96 trainings were organized in different agricultural and allied enterprises and 2092 youths were trained. After training under close monitoring by the KVK experts 1055 youth were associated with various agricultural and allied enterprises viz., poultry farming, mushroom cultivation, goatery, vermicompost production, beekeeping and processing and value addition etc. Total 349 new entrepreneurial units were established under different agricultural and allied enterprises.

Table 9.1: Performance of KVKs under ARYA Project.

State	KVK	Training programme (No.)	No. of Youth trained			No. of Youth involved in established units			Entrepreneurial units established (No.)
			Male	Female	Total	Male	Female	Total	
MP	Dhar	7	164	11	175	110	8	118	65
	Gwalior	6	123	47	170	28	5	33	33
	Jhabua	4	136	64	200	142	60	202	65
	Morena	7	137	98	235	8	22	30	11
	Neemuch	10	147	16	163	11	0	11	10
	Sheopur	2	38	7	45	39	6	45	29
	Narmadapuram	4	68	32	100	50	31	81	58
	Satna	4	116	50	166	11	18	29	29
CG	Dantewada	12	20	110	130	18	97	115	12
	Kanker	8	146	74	220	16	12	28	11
	Raipur	24	205	83	288	120	83	203	10
	Surguja	8	86	114	200	77	83	160	16
Total	**12 KVKs**	**96**	**1386**	**706**	**2092**	**630**	**425**	**1055**	**349**

Training on Poultry unit

Vermicompost production unit

Processing and value addition on scented rice

Nursery management

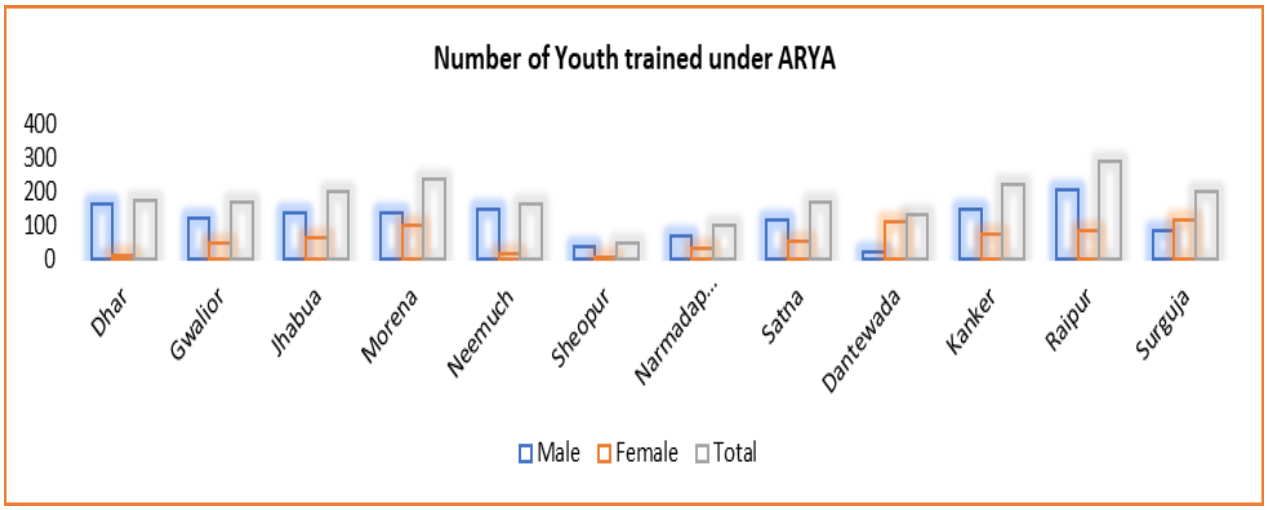

Fig 9.1: Number of youth trained under ARYA

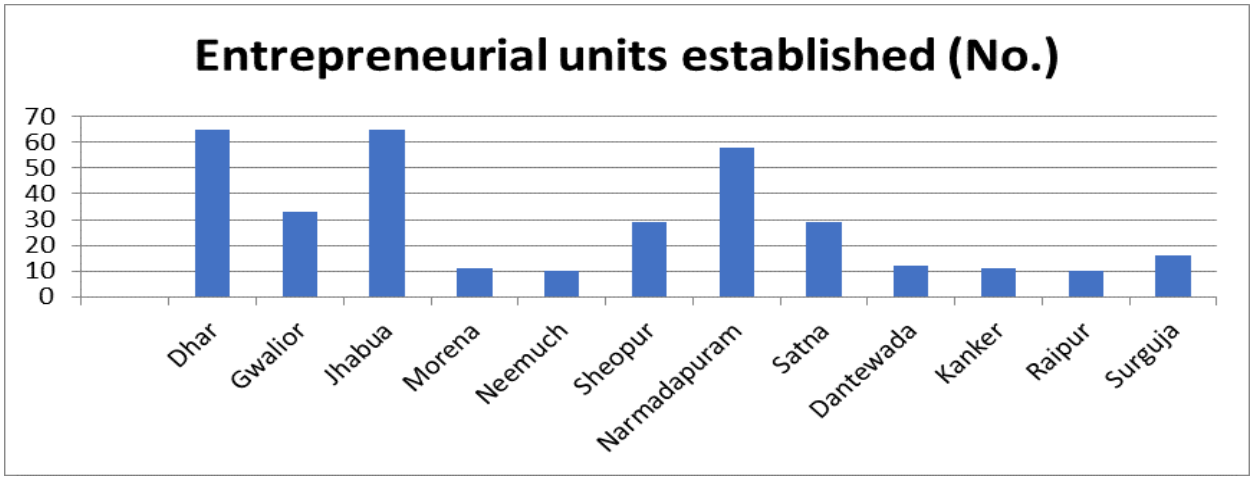

Fig 9.2: KVK-wise entrepreneurial units established under ARYA

Technology Demonstration Component under National Innovations on Climate Resilient Agriculture (NICRA)

Nodal Scientist: Dr. S.R.K. Singh, Principal Scientist (AE)

NICRA is operational in 11 KVKs in the states of Madhya Pradesh and Chhattisgarh under ATARI, Jabalpur, which monitors the performance of NICRA KVKs namely Chhattarpur, Datia, Jhabua, Morena, Ratlam, Dindori, Bhind (Lahar) and Tikamgarh in Madhya Pradesh; Durg II, Mahasamund and Raigarh in Chhattisgarh.

During 2023-24, through various planned activities, total 10970 farmers were benefited including 4084 farmers by technological interventions in 1293.53 ha and total 6886 farmers by capacity building (2987 farmers) and extension activities (3899 farmers).

Under NRM module, total 1124 farmers were benefited by covering 593 ha area. Demonstrations were focused on in-situ moisture conservation, water harvesting and recycling for supplemental irrigation, water saving irrigation method, conservation tillage, etc.

Similarly in crop production module, a total of 1182 farmers were benefited through 702 demonstrations conducted in 450.5 ha area focused on drought tolerant varieties, advancement of

planting dates of rabi crops to escape for terminal heat stress, etc. of chickpea, wheat, barley, green gram, pigeon pea, blackgram and vegetable crops.

In livestock and fisheries module, a total of 1569 animals, 1810 poultry birds were benefited and 5045 fingerlings distributed and 996 farmers were benefited by the demonstrations conducted focusing on preventive vaccination, de-worming of animals, animal health camp and nutrition management.

In seed bank, fodder bank and custom hiring centers, 138 ha, 45 ha and 176 ha area covered and 345, 125 and 312 farmers were benefited, respectively.

In Extension activities total 104 demonstration programme were conducted with 3899 beneficiaries and in capacity building programme number of activities conducted was 124 and total number of farmers benefited were 2987.

Capacity building programme in NICRA Village

Summer deep Ploughing operation in NICRA village

Distribution of Mineral mixture at NICRA (KVK Raigarh)

Field visit by Scientist

Farmer FIRST Programme (FFP)

Nodal Scientist: Dr. S.R.K. Singh, Principal Scientist (AE)

Farmer FIRST Programme is operational in seven centers (Madhya Pradesh and Chhattisgarh) under the jurisdiction of ICAR-ATARI Jabalpur. During 2023-24, total 2054.54 ha area covered, 5891 poultry, 2019 animals and 8572 farm families benefitted under the six modules.

- In crop based module, total 895.37 ha covered and benefitted 2520 farm families. In horticultural based module 96.92 ha area covered and 1615 farm families benefitted.
- Under livestock based module 23 kg fingerlings distributed, 3891 poultry, 2019 animals and 835 farm families benefitted.
- Under enterprise based module, four mushroom units, 97 vermi-compost unit, six bee keeping unit, 10 *Kadaknath* units, five agro-processing center, two bio-flock, four azolla production unit

and two hatchery unit were established, 81,000 fingerlings and 2000 poultry provided that benefitted 684 farm families.

- Under IFS module 111.22 ha area covered and 83 farm families benefitted.
- Under NRM module 951.03 ha area covered and 2835 farm families benefited.
- Total 131 extension activities were organized that benefitted 2804 farmers and 61 capacity building programmes were organized that benefitted 1103 farmers.

Scientific Turmeric Cultivation with Improved Roma Variety

Kadaknath Poultry production

District Agro-Met Units (DAMU)

Incharge: Dr. A.A. Raut, Scientist (AE)

DAMU is a flagship program of the Government of India, Ministry of Earth Sciences (MoES), providing weather-related services to farmers to aid in day-to-day agricultural decision-making. This scheme is collaboratively undertaken by the India Meteorological Department (IMD) and the Indian Council of Agricultural Research (ICAR). In Zone–IX, DAMU has been established in 23 KVKs (14 in Madhya Pradesh and 9 in Chhattisgarh) under Gramin Krishi Mausam Sewa. Automated Weather Station (AWS) record weather parameters to generate agro-meteorological information for use in studies on crops, pests and diseases, soil, agroforestry, livestock, horticulture, agricultural physics, soil science, etc. Each District Agro-Met Unit utilizes the relevant output products, including weather data, to generate specific advisories for agricultural management in the respective districts within the identified agro-climatic zones and disseminates the information to the farming community. Training for extension workers and farmers, along with climate awareness programs, was organized to raise awareness about climate parameters and agro-advisories, enabling timely action in changing weather conditions to minimize agricultural losses. A total of 339 programs were organized under the DAMU program, with 16,381 participants.

Table 9.2: Activities under DAMU Project.

Details	No of Programme	No of participants
Awareness Programme	173	6974
Exhibition	23	2954
Field day	46	1243
Training	97	5210
Total	**339**	**16381**

DAMU Observation unit

Training programme on agro-meterological parameter

Cluster-Based Business Organization (CBBOs)

Incharge: Dr. A.A. Raut, Scientist (AE)

Cluster-Based Business Organizations (CBBOs) are professional entities that help establish and grow Farmer Producer Organizations (FPOs) in India to attain economy of scale towards better price realization. ***National Cooperative Development Corporation*** (***NCDC***) has allotted 117 blocks to ICAR-ATARI KVKs who will work as a CBBO. The roles and responsibilities of CBBOs are baseline survey, cluster finalization, value chain study, formation of groups and FPO, assisting and registration of FPOs and training of BODs on roles, responsibilities and management. In Madhya Pradesh, three KVKs viz., Narmadapuram (Hoshangabad), Chhatarpur, Morena and in Chhattisgarh, two KVKs viz., Bhatapara and Raipur are working this CBBO in ten blocks of these districts.

Table 9.2: Blocks under Cluster based business organization (CBBOs)

S.No.	Name of State	Name of District	Name of Block	FPO Registered	No. of share-holding farmer members	Equity Amount Collected (Rs.)
1	Chhattisgarh	Baloda Bazar	Baloda Bazar	Registered	313	231500
2	Chhattisgarh	Baloda Bazar	Palari	Registered	303	213000
3	Chhattisgarh	Raipur	Dharsiwa	Registered	316	316000
4	Chhattisgarh	Raipur	Tilda	Registered	303	308000
5	Madhya Pradesh	Hoshangabad	Siwni Malwa	Registered	301	602000
6	Madhya Pradesh	Hoshangabad	Pipariya	Registered	311	622000
7	Madhya Pradesh	Chhatarpur	Naugaon	Registered	305	610000
8	Madhya Pradesh	Chhatarpur	Rajnagar	Registered	358	660000
9	Madhya Pradesh	Morena	Jaura	Registered	300	600000
10	Madhya Pradesh	Morena	Pahadgarh	Registered	300	600000
Total					**3110**	**4762500**

Cluster Frontline Demonstrations (CFLD) on Oilseeds

Incharge: Dr. S.R.K. Singh, Principal Scientist (AE)

Cluster Frontline Demonstration on Oilseeds under the "National Food Security Mission" was implemented by ICAR-ATARI, Jabalpur in Madhya Pradesh and Chhattisgarh. Under the project major crops were soybean, niger, sesame, mustard, linseed, groundnut and sunflower demonstrated in Madhya Pradesh and Chhattisgarh states. The programmes were implemented by 80 KVKs with major oilseed crops of *kharif, rabi* and summer season through 9304 demonstrations covering 4074 ha area including 1774 ha with 4137 demonstrations in kharif; 2180 ha with 4959 demonstrations in rabi and 120 ha with 208 demonstrations in summer season, respectively during 2022-23.

In kharif season (2023), soybean, sesame, niger and groundnut were demonstrated under CFLDs. In Madhya Pradesh, 2116 demonstrations were conducted in 855 ha area by 41 KVKs under soybean and yield obtained was 14.71 q/ha, whereas in niger 375 demonstrations were conducted in 150 ha area by 7 KVKs and obtained yield was 6.00 q/ha. Sesame was demonstrated in 170 ha area by 9 KVK through 425 demonstrations and yield obtained was 5.08 q/ha and groundnut was demonstrated in 74 ha with 179 demonstrations by 8 KVKs at farmers' field with obtained yield 23.19 q/ha. Similarly, in Chhattisgarh, 125 ha area covered through 244 demonstrations in soybean crop by 6 KVKs obtained yield was 12.52 q/ha. In niger, 220 ha area was covered with 467 demonstrations by 9 KVKs and obtained yield was 4.02 q/ha. Sesame crop was demonstrated in 140 ha area in 9 KVKs through 228 demonstrations and yield obtained was 4.98 q/ha and groundnut crop was demonstrated in 40 ha area in 4 KVKs through 103 demonstrations and yield obtained was 18.13 q/ha.

During rabi season (2022-23), mustard, linseed, sesame, groundnut, safflower and sunflower were demonstrated. In Madhya Pradesh, mustard covered 880 ha area with 2175 demonstrations by 37 KVKs with avgerage yield of 15.40 q/ha and linseed was demonstrated in 340 ha with 846 demonstrations by 16 KVKs with average yield 12.89 q/ha. Similarly, in Chhattisgarh, mustard was demonstrated in 485 ha area with 985 demonstrations by 25 KVKs yield obtained was 8.45 q/ha and linseed was there in 285 ha area through 550 demonstrations in 15 KVKs with average yield of 7.12 q/ha. Sunflower was demonstrated in 140 ha area with 298 demonstrations and average yield was 8.85 q/ha. Groundnut covered 20 ha area with 54 demonstrations by 1 KVKs and average yield obtained was 15.30 q/ha and sesame covered 20 ha area with 30 demonstrations by 1 KVK and average yield obtained was 4.80 q/ha.

During summer (2023), sesame, groundnut and sunflower were demonstrated. In Madhya Pradesh, groundnut covered 20 ha area with 50 demonstrations by 1 KVK and average yield obtained as 21.75 q/ha. Similarly, in Chhattisgarh, sunflower was demonstrated in 20 ha area with 29 demonstrations and average yield was 9.22 q/ha. Groundnut covered 10 ha area with 20 demonstrations by 1 KVKs and average yield obtained was 4.48 q/ha and sesame covered 70 ha area with 109 demonstrations by 4 KVKs and average yield obtained was 9.22 q/ha.

Table 9.3: State-wise and Season-wise outcome of CFLD on Oilseed

State	Crop	No. of KVK	Conducted		Average Yield (q/ha)		Yield increase (%)
			Area (ha)	Demo (No)	Check	Demo	
Madhya Pradesh	Groundnut	8	74	179	17.23	23.19	34.59
	Niger	7	150	375	4.13	6.00	45.28
	Sesame	9	170	425	3.66	5.08	38.80
	Soybean	41	855	2116	11.25	14.71	30.76
Chhattisgarh	Groundnut	4	40	103	13.34	18.13	35.91
	Niger	9	220	467	2.84	4.02	41.55

State	Crop	No. of KVK	Conducted		Average Yield (q/ha)		Yield increase (%)
			Area (ha)	Demo (No)	Check	Demo	
	Sesame	9	140	228	3.52	4.98	41.48
	Soybean	6	125	244	9.42	12.52	32.91
Total Kharif (2023)			**1774**	**4137**			
Madhya Pradesh	Mustard	37	880	2175	11.39	15.40	35.21
	Linseed	16	340	846	8.65	12.89	49.02
Chhattisgarh	Mustard	25	485	985	5.95	8.45	42.02
	Linseed	15	285	550	4.52	7.12	57.52
	Groundnut	1	20	54	10.00	15.30	53.00
	Sesame	1	20	30	3.60	4.80	33.33
	Sunflower	9	140	298	6.14	8.85	44.14
	Safflower	1	10	21	5.50	6.90	25.45
Total Rabi (2022-23)			**2180**	**4959**			
Madhya Pradesh	Groundnut	1	20	50	16.5	21.75	31.82
Chhattisgarh	Groundnut	1	10	20	3.77	4.48	18.83
	Sesame	4	70	109	3.88	5.41	39.43
	Sunflower	2	20	29	6.07	9.22	51.89
Total Summer (2022)			**120**	**208**			
Grand Total			**4074**	**9304**			

Farmer with soybean crop

Sesame crop under CFLD Oilseed

Farmer in groundnut field

Farmer with linseed crop

Cluster Frontline Demonstration (CFLD) on Pulses

Incharge: Dr. A.A. Raut, Scientist (AE)

Cluster Frontline Demonstration on pulses under the 'National Food Security Mission' was implemented by ICAR-ATARI, Zone-IX, Jabalpur in the states of Madhya Pradesh and Chhattisgarh. Under this project, blackgram and pigeonpea were demonstrated during the Kharif season, and lentil was demonstrated during the Rabi season.

During Kharif 2023, in Madhya Pradesh, blackgram and pigeonpea were demonstrated over an area of 3383 hectares with 8061 demonstrations by 43 KVKs. Similarly, in Chhattisgarh, blackgram and pigeonpea were demonstrated over an area of 336 hectares with 675 demonstrations by 18 KVKs. The total area covered was 3719 hectares with 8736 demonstrations.

Table 9.4: State-wise & Season-wise outcome of CFLD Pulses of *Kharif* 2023.

State	Season	Crop	No of KVK	Conducted			
				Area (ha)	Demo (No.)	Yield q/ha	Net return/ha
MP	*Kharif* 2023	Blackgram	22	2517	5910	8.00	35044
		Pigeonpea	21	866	2151	13.48	65304
		Sub Total	**43**	**3383**	**8061**		
CG		Blackgram	11	210	412	8.10	30709
		Pigeonpea	7	126	263	9.00	91938
		Sub Total	**18**	**336**	**675**		
Total Kharif 2023				**3719**	**8736**		

During Rabi 2023-24, lentil was the major crop demonstrated in 905 ha area with total 2186 number of demonstrations in states Madhya Pradesh and 80 ha area with 179 number of demonstrations were demonstrated in lentil crop by 06 KVKs in Chhattisgarh.

Table 9.5: State-wise & Season-wise area covered and demo under CFLD pulses in *Rabi* 2023-24

State	Season	Crop	No of KVK	Area (ha)	Demo (No.)
MP	*Rabi* 2023-24	Lentil	32	905	2186
		Sub Total		**905**	**2186**
		Lentil	06	80	179
		Sub Total		**80**	**179**
Total Rabi 2023-24				**985**	**2365**

Performance of *Rabi* and Summer 2023

In the Rabi 2022-23, chickpea, field pea, lentil, and lathyrus were the major crops demonstrated in the states of Madhya Pradesh and Chhattisgarh. During Rabi 2022-23, in Madhya Pradesh, 1375 hectares were covered with 3392 demonstrations. In Chhattisgarh, 780 hectares were covered with 1561 demonstrations. The total area covered was 2155 hectares with 4953 demonstrations during Rabi 2022-23 under ICAR-ATARI Zone-IX.

During Summar 2022-23, blackgram and greengram were demonstrated by Madhya Pradesh and Chhattisgarh. In Madhya Pradesh, 545 ha area was covered with 1346 demonstrations in greengram and Blackgram, similarly in Chhattisgarh total covered area was 220 with 422 demonstrations.

Table 9.6: State-wise and Season-wise performance Pulses under CFLD in *Rabi* and Summer 2022-23

State	Season	Crop	No of KVK	Conducted			
				Area (ha)	Demo (No.)	Yield q/ha	Net return/ha
MP	*Rabi* 2022-23	Chickpea	47	910	2243	16.51	60697
		Fieldpea	05	70	187	16.52	59832
		Lentil	24	395	962	13.43	51874
		Sub Total		**1375**	**3392**		
CG		Chickpea	20	390	836	9.94	32070
		Fieldpea	09	155	275	8.98	37458
		Laythrus	09	145	274	6.78	13703
		Lentil	07	90	176	6.73	19283
		Sub Total		**780**	**1561**		
Total *Rabi* 2022-23				**2155**	**4953**		
MP	*Summer* 2022-23	Blackgram	09	105	262	9.07	38961
		Greengram	25	440	1084	10.22	55673
		Sub Total		**545**	**1346**		
CG		Blackgram	05	70	130	9.59	42232
		Greengram	10	150	292	7.59	36591
		Sub Total		**220**	**422**		
Total Summer 2022-23				**765**	**1768**		

Pigeonpea (PKV Tara)

Blackgram (Indira Urd 1)

Chickpea (RVG 204)

Lentil (IPL 316)

Seed Hub for increasing production of Pulses

Incharge: Dr. A.A Raut, Scientist (AE)

Seed Hub Project on pulses was functional in 13 KVKs of states Madhya Pradesh and Chhattisgarh under ICAR-ATARI, Jabalpur during *Kharif* 2023. Major crop demonstrated under this project in *kharif* season were blackgram and pigeonpea. The programme was implemented in 164 ha area with 459.94 q seed production.

Table 9.7: Area and production of pulses in Kharif 2023

State	No. of KVKs	Area (ha.)	Production (q)
Madhya Pradesh	07	136.08	367.86
Chhattisgarh	06	27.02	92.08
Total	**13**	**164**	**459.94**

On the other hand, during *Rabi* 2022-23, this project was functional in total 15 KVKs of Madhya Pradesh and Chhattisgarh. In *Rabi* season 448.95 ha area was demonstrated under seed hub with total seed production of 3376.71 q, covering major crops chickpea, fieldpea and laythrus.

Table 9.8: Area and production of pulses in Rabi 2022-23

State	No. of KVKs	Area (ha.)	Production (q)
Madhya Pradesh	09	215.37	1783.16
Chhattisgarh	06	233.59	1593.55
Total	**15**	**448.96**	**3376.71**

Whereas, greengram was demonstrated in summer season 2022-23, covering 74 ha area with 378.14 q seed production. Under seed hub, seed godown with processing unit were established in KVKs of both the states Madhya Pradesh and Chhattisgarh.

Table 9.9: Area and production of pulses in summer 2022

State	No. of KVKs	Area (ha.)	Production (q)
Madhya Pradesh	04	45	202.50
Chhattisgarh	03	29	175.64
Total	**07**	**74**	**378.14**

Fieldpea Var. IPFD 9-2

Seed Godwon

Tribal Sub Plan (TSP) on Pulses

Incharge: Dr. A.A. Raut, Scientist (AE)

Tribal development programmes in India encompass a comprehensive approach, addressing various aspects of tribal life, schemes are aimed for enhancing Pulses Production for Food, Nutritional Security and livelihoods of Tribal Community through Demonstration and Training. Participatory demonstration programme on pulses under TSP pulses was implemented by ICAR-ATARI, Jabalpur in collaboration with IIPR Kanpur. Under ICAR-ATARI, Jabalpur three KVKs namely, Mandla, Jhabua and Shahdol in Madhya Pradesh and three KVKs *viz.*, Kanker, Dantewada and Bijapur in Chhattisgarh were located in the tribal region.

During summar season in Madhya Pradesh blackgram and greengram were demonstrated in 54 ha area with 135 demonstrations similarly in Chhattisgarh 28 ha area were covered under greengram with 99 demonstrations.

Table 9.10: Performance of demonstrations under different crops during summer 2022-23

State	Season	Crop	No. of KVK	Area (ha)	Demo (No.)	Yield q/ha	Net Return/ha
MP	*Summer*	Blackgram	01	12	30	7.40	29862
		Greengram	03	42	105	8.08	41243
		Sub Total		**54**	**135**		
CG		Greengram	03	28	99	7.84	41947
		Sub Total		**28**	**99**		
Total 2022-23				**82**	**234**		

Blackgram var. TPU 9

Greengram MH 421

Greengram MH 421

Mera Gaon Mera Gaurav (MGMG)

Nodal Scientist: Dr. S.R.K. Singh, Principal Scientist (AE)

Mera Gaon Mera Gaurav is operational in 10 institutions including six ICAR institutes and four SAU's under Zone IX. DWR Jabalpur, IISS Bhopal, CIAE Bhopal, IISR Indore, NIBSM Raipur, JNKVV Jabalpur, NDVSU Jabalpur, IGKVV Raipur, CGKV Durg and RVSKVV Gwalior are institutes/SAUs working under MGMG programme. Details are below;

ICAR institutes and SAUs activities:

During 2023-24, total 12 groups were formed by involving 56 scientists under ICAR institutes and SAUs. Through training, demonstration, literature distribution, message advisories, general awareness and linkage created with other Departments/Organization benefited total of 18466 farmers of 32 villages under this programme.

In ICAR- DWR, Jabalpur, two groups involving 13 scientists conducted total 174 demonstrations, trainings and field activities by covering 12 villages. Training, demonstration, literature distribution, general awareness and linkages created with other Departments/ Organizations benefited total 15576 farmers.

JNKVV, Jabalpur conducted total 150 field activities in 5 adopted villages by which 2500 farmers were benefited under the programme.

ICAR-NIBSM, Raipur conducted total 24 field activities in 15 adopted villages by which 390 farmers were benefited under the programme.

Table 9.11: Institute-wise progress under *Mera Gaon Mera Gaurav*

S. No.	Name of Institute	Total Number of Groups/ team formed	No. of Scientists Involved	No. of villages covered	No. of field activities conducted	No. of messages/ advisory sent	Farmers benefited (No.)
1	ICAR-Directorate of Weed Research, Jabalpur (MP)	2	13	12	174	70	15576
2	Jawaharlal Nehru Krishi Vishwa Vidhyalaya, Jabalpur (MP)	5	18	5	150	27	2500
3	ICAR-National Institute of Biotic Stress Management, Raipur (CG)	5	25	15	24	07	390
	Total	**12**	**56**	**32**	**348**	**104**	**18466**

Weed data collection in Paddy field

Nursery Uprooting

Fish Farming (Fish Harvesting and Marketing)

Nutrition-Sensitive Agriculture through Nutri-SMART Village

Nodal Scientist: Dr.S.R.K Singh, Director

The initiative in this regard was taken by ICAR-ATARI, Jabalpur in Madhya Pradesh and Chhattisgarh through a novel concept of Nutri-SMART village establishment in 2016 by KVKs for promoting Nutrition-Sensitive Agriculture in India. The activities under Nutri-SMART Village intensified by KVKs for evolving new extension methodologies and approaches for long-lasting effect of the efforts in this direction. Nutri-SMART village was established in 42 blocks of Madhya Pradesh and 15 blocks of Chhattisgarh. Therefore this programme will result into following specific outcome addressing the ultimate goal of health and well-being of farm women, adolescent girls and children (0-5 year):

- Increased availability, accessibility and utilization of nutritious crops/vegetables/fruits etc. through Nutrition gardens.
- Crop diversification along with cultivation of Bio-fortified varieties will result improvement in nutritional and health status of farm family in Nutri-SMART Villages.
- Improving dietary diversity by standardizing traditional recipes incorporating locally available food materials through value addition.
- To enhance the economic status of farm families through income generation activities.

Activities under NARI Project

Table 9.12: Technology Assessment

State	Thematic area	No. of Districts	No of Technology	No.of Trials
Madhya Pradesh	Nutrition garden	04	07	31
	Bio-fortified varieties	15	22	126
	Value addition	06	11	66
	Total		**40**	**223**
Chhattisgarh	Nutrition garden	01	04	20
	Bio-fortified varieties	01	01	10
	Value addition	01	01	05
	Total		**06**	**35**
	Grand total		**46**	**258**

- Children, adolescents and women's health can be significantly improved by biofortified crops. In Madhya Pradesh, KVK, Chhindwara, Jabalpur, Khandwa, Umaria, Morena, Neemuch, Guna and Ratlam conducted on farms trials using bio-fortified varieties of wheat such as Pusa Tejas (HI-8759), DBW-187, MP-3288, HI-1605, WB-02, DDW-47, HI-1633 and HI-1634 to improve nutritional status in farm families.

Table 9.13: Technology Demonstration

State	Thematic area	No. of Districts	No of activity	No.of Farmers/ beneficiaries
Madhya Pradesh	Nutrition garden	26	560	579
	Bio-fortified varieties	05	79	79
	Value addition	06	51	51
	Total		**690**	**709**
Chhattisgarh	Nutrition garden	09	150	181
	Value addition	02	22	22
	Total		**172**	**203**
	Grand total		**862**	912

Table 9.14: Training

State	No of KVKs	Activities	No of Beneficiaries
Chhattisgarh	11	53	987
Madhya Pradesh	32	215	5418
Total	**43**	**268**	**6405**

Table 9.15: Extension Activities

State	No of KVKs	Activities	No of Beneficiaries
Chhattisgarh	07	153	2185
Madhya Pradesh	28	338	7433
Total	**35**	**491**	**9618**

Nutri Garden

Bio fortified Crops

Income generation through Mushroom

10. New Initiatives

With the changing scenario, new initiatives are required to tackle emerging problems of the farming community with the latest technological solutions vis-à-vis methodological blending for providing the real benefits of the scientific endeavors. KVKs are working hard to enhance the productivity and profitability at farmers' condition through its various activities under the guidance of Division of Agricultural Extension and monitoring system of the ICAR-ATARI with Director Extension of SAUs. As a result, KVK efforts are being recognized and appreciated at various platforms. Some of the important initiatives taken/continued during the period 2023 are being presented here.

1. Outscaling of Natural Farming

Nodal Scientist: Dr. A. A. Raut, Scientist (AE)

Natural Farming is a chemical-free farming system rooted in Indian tradition enriched with modern understanding of ecology, resource recycling and on-farm resource optimization. Department of Agriculture and Farmers' Welfare, Government of India has sanctioned a project titled "Outscaling of Natural Farming through KVKs". The project will be implemented in 425 KVKs of the country. There were 48 KVKs under Natural Farming in ATARI, Zone-IX, Jabalpur, among these 16 KVKs were allotted in Chhattisgarh state, while 32 KVKs from Madhya Pradesh. During 2023-24, total 1252 awareness programmes were carried out by involving 73950 participants. Furthermore, 451 training programmes was organized by involving 18534 participants for capacity building on Natural farming practices, while 558 demonstrations were conducted in various crops such as wheat, linseed, sunflower, chickpea, garlic, paddy, green gram, niger, brinjal, potato, onion, rice, mustard, pea, pigeonpea, lentil, tomato, summer paddy, lathyrus, groundnut, blackgram, cabbage, chilli, cauliflower, muskmelon, coriander and finger millet etc. The activities aimed at giving the impetus to promoting natural farming practices and knowledge dissemination among farmers.

A Regional workshop on "Out scaling of Natural Farming" was held on March 27-28, 2023 by KVK Burhanpur. Guest of Honour Smt. Archana Chitnis, Former Minister for Women and Child Development Govt. of Madhya Pradesh addressed farmers to adopt natural farming technology with help of Krishi Vigyan Kendra for environment and human security. Total 698 farmers were participated in this workshop.

Table 10.1: Activities and participants under Outscaling of Natural Farming

States	No. of KVKs	Awareness Programme		Training Programme		No. of Demonstration
		No. of Awareness Programme	No. of participants	No. of Training	No. of participants	
Chhattisgarh	16	579	5643	155	6350	180
Madhya Pradesh	32	673	68307	296	12184	378
Total	**48**	**1252**	**73950**	**451**	**18534**	**558**

Training Programme under Natural Farming

Natural Farming Demonstraion

Training Programme under Natural Farming

Regional Workshop on Out Scaling of Natural Farming

2. Drone Technology Demonstration- Sub mission under Agricultural Mechanization

Nodal Scientist: Dr. A.A. Raut, Scientist (AE)

This is the central sector scheme of Department of Agriculture and Farmers Welfare, Government of India under the Sub Mission on Agricultural Mechanization for implementation of its component. Drone Technology Demonstration initiated during 2023. Small section of crops at different stages can be easily monitored by Drone. This scheme is operational in five ICAR Institutes viz., CIAE Bhopal, DWR Jabalpur, IISS Bhopal, IISR Indore and NIBSM Raipur; two SAUs namely JNKVV, Jabalpur and IGKV Raipur and nine KVKs under ICAR ATARI Jabalpur in Madhya Pradesh and Chhattisgarh.

Under this scheme total 23 drones were purchased. Total 3194 demonstrations were conducted and covered 1918.17 ha area that benefitted 35774 farmers in 2023. Nano urea application, pesticide application, micronutrient application etc., technology demonstrated under the drone technology demonstrations.

Table 10.2: Status of activities under Drone Technology Demonstration

State	No. of Kisan Drones Purchased by the PIC	No. of Kisan Drone Demonstration organized	Area Covered under the Kisan Drone Demonstration	Number of farmers participated
Madhya Pradesh	16	1037	816.17	6783
Chhattisgarh	7	2157	1102	28991
Total	**23**	**3194**	**1918.17**	**35774**

Demonstration of Drone Technology

Pesticide application by Drone

3. Biotech-KISAN Hub

Nodal Scientist: ***Dr. A. A. Raut, Scientist (AE)***

This project is operational in Eight KVKs under ICAR-ATARI, Jabalpur in Madhya Pradesh state namely-Damoh, Chhatarpur, Singrauli, Badwani, Guna, Khandwa, Rajgarh, Raisen (For Vidisha district FY 2023). Under the project selected KVKs trained participating farmers about the complete improved package of practices of wheat, lentil, chickpea etc. that can help in better crop management in order to enhance production and productivity and to aware farmers by providing latest knowledge of improved agronomic practices for solving their problems with reference to climate change. Field day, interaction meets at farmer's field, Training to farmers at KVK and demonstrate the best practices.

Distribution of seed under Biotech Tech Kisan Hub programme

Training under Biotech Tech Kisan Hub programme

4. Kisan Sarathi

Nodal Scientist: ***Dr. A. A. Raut, Scientist (AE)***

"Kisan Sarathi" an Information Communication and Technology (ICT) based interface solution provide seamless, multimedia, multi-ways connectivity to the farmers with the latest agricultural technologies, knowledge base and the pool of large number of the subject matter experts. Major activities undertaken are onboarding of KVK Scientist, farmers, enhancement/customization of system, sensitization and capacity building of the farming community. It provides multi lingual support to farmers (22 languages) in seeking advisory services. In Madhya Pradesh, 53 KVK Heads and 237 KVK experts are engaged in the amalgamation of 26,39,844 farmers while in Chhattisgarh 28 KVK Heads and 90 KVK experts are engaged in the amalgamation of 13,00,479 farmers as well as

9237 telephonic calls were made by farmers and scientist solve queries of the farmers on the Kisan Sarathi Portal.

Table 10.3: Registered experts and farmers in Kisan Sarathi portal

State	Registered KVK Heads	Registered experts	Registered Executives	No. of Farmers	Calls
Madhya Pradesh	53	237	14	26,39,844	6919
Chhattisgarh	28	90	12	13,00,479	2318
Total	**81**	**327**	**26**	**39,40,323**	**9237**

5. Viksit Bharat Sankalp Yatra (VBSY)

Nodal Scientist: ***Dr. A. A. Raut, Scientist (AE) and Dr. Harish M.N. Scientist (Agronomy)***

"Viksit Bharat Sankalp Yatra" refers to a significant journey or campaign undertaken in various states of India. KVK participation in Viksit Bharat Sankalp Yatra in Madhya Pradesh and Chhattisgarh echoes the commitment to inclusivity, aiming to extend the reach of government welfare programmes to even the remotest gram panchayats and villages. The primary objective of the Viksit Bharat Sankalp Yatra is to achieve 100 percent saturation of flagship government schemes, ensuring that the benefits of these programs reach every nook and corner of the country. The launch of the Viksit Bharat Sankalp Yatra in Madhya Pradesh and Chhattisgarh witnessed enthusiastic participation from district and block officers, MLAs, and Ministers. The initiative also focused on enrolling eligible beneficiaries who have yet to avail themselves of the schemes related to agriculture and allied sector and benefits provided by the Government. KVKs also created awareness about Natural Farming and Drone Technology in Agriculture. KVKs having drone facility demonstrated the use of drones in agriculture.

Table 10.4: Coverage under Viksit Bharat Sankalp Yatra by KVKs

State	No. of KVKs	Total No. of Gram Panchayat covered	Total Number of People Attended	Total Lecture Delivered on Soil Health/ Natural Farming
Chhattisgarh	28	5420	2018243	4614
Madhya Pradesh	53	9948	2142325	10153
Grand Total	**81**	**15368**	**4160568**	**14767**

Awareness Programme under VBSY

Green Flag for VBSY Van

11. Research Projects and Publications

Table 11.1: List of Network Research Projects

S No.	Title of the Project	Name of PI/ Co-PI/ CCPI	Nature of Project	Year of start
A.	**National**			
1.	Assessing dietary diversity, consumption pattern and nutritional security in Nutri-SMART Villages- A step towards vocal for local (Gender & Nutrition theme)	Dr.S.R.K.Singh, PI	ICAR Network National Project	2020-21
2.	Impact of climate resilient technology interventions implemented through NICRA across different agro-ecological regions of India	Dr.S.R.K.Singh, Co-PI	ICAR Network National Project	2020-21
3.	Impact assessment of KVKs interventions on Doubling Farmers' Income (DFI)	Dr.D.Bardhan, Co-PI	ICAR Network National Project	2020-21
4.	Network project on analysis on agriculture and micro-irrigation programmes in Aspirational districts in India	Dr.D.Bardhan, Co-PI	ICAR Network National Project	2020-21
5.	Impact of ARYA on promotion of agri-preneurship, alternate livelihoods and spinoff effect	Dr.A.A.Raut, Co-PI	ICAR Network National Project	2020-21
6.	Impact assessment of popular pulse varieties and technologies disseminated through Cluster frontline demonstration of pulses (CFLD-P) in India	Dr.A.A.Raut, Co-PI	ICAR Network National Project	2020-21
7.	Impact of Technological Interventions of KVKs on Socio-Economic Empowerment and Sustainable Livelihood Security of Tribal Farmers	Dr.A.A.Raut, Co-PI	ICAR Network National Project	2020-21

Above projects have been completed and final report will be submitted by the lead centers of the concerned projects.

Publications

i. Research Paper:

Bisht, K., Gudadhe, N.N., Raut, A.A. and Dobhal, N. (2023). Nutritional composition, health benefits, production, processing and marketing of finger millet. *Indian Journal of Fertilisers*, 19(10), 1036-1046.

Dubey, S.K., Singh, R., Raut, A.A., Kolekar, D.V. and Athare, T. (2023). Effect of Assured Transit Time for Perishable Farm Produce on Enhancing Farmers' Income: A Case Study of Kisan Rail in Context of Mann Ki Baat. *Indian Journal of Extension Education*, 59(3), 1-6.

Gautam, U.S., Singh S.R.K., Bardhan D., Raut A.A., Shrivastava V., Jallaraph V. and Dey P. (2023). 'Mann kiBaat' and mobile based extension agro-advisory services: Insights on Farmers' perception and lessons learned. *Journal of Community Mobilization and Sustainable Development*, 18(1): 315-387.

Gowda, M.J.C., Rana, R.K., Pal, P.P., Dubey, S.K., Kumar, A., Meena, M.S., Singh, R., Bordoloi, R., Bhaskaran, A., Raut, A.A., Rajesh, T., Kumar, B. and Thimmappa, K. (2023). Economic

performance of enterprises promoted under ARYA and relationship with entrepreneurial competencies. *Indian Journal of Extension Education*, 59(2), 10-15.

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Jaiswal, A., Singh S.R.K., Solanki R.K. and Meshram M. (2023): Impact of Diploma in Agricultural Extension Services for Input Dealers (DAESI) Programme in Disadvantaged Districts of Madhya Pradesh. *Journal of Community Mobilization and Sustainable Development*, 18(4), 1234-1237.

Rajpoot, A.S., Rajan, P., Raut, A., Srivastava, A. and Singh, R.B. (2023). Attitude of NRLM Beneficiaries towards Livelihood Diversification in Baghelkhand Region of Madhya Pradesh, India. *Asian Journal of Agricultural Extension, Economics and Sociology*, 41(11), 258-263.

Rajpoot, A.S., Rajan, P., Raut, A., Srivastava, A. and Singh, R.B. (2023). Profile of National Rural Livelihood Mission (NRLM) beneficiaries in Madhya Pradesh. *Asian Journal of Agricultural Extension, Economics and Sociology*, 41(11), 249-257.

Raut, A.A., Athare, T.R. and Singh, S.R.K. (2023). Capacity Building in Secondary Agriculture through Skill Training Programmes at KVKs. *TECHNOFAME- A Journal of Multidisciplinary Advance Research*, 12(2), 44-52.

Shrivastava, V., Khare, N.K. and Singh, S.R.K. (2023). Assessing Drivers of adaptation strategies of climate change in Kymour plateau and satpura hills of Madhya Pradesh. *Journal of Community Mobilization and Sustainable Development*, 18(1), 341-347.

Singh, S.R.K., Raut, A.A., Bardhan, D., Shrivastava, V., Jallaraph, V., Harish, M.N., Singh, A.K. and Gautam, U.S. (2024). Differential consumption pattern of traditional and packed food among rural children. *Indian Journal of Agricultural Sciences* 94 (3-S1), 003–009.

Singh, S.R.K., Bardhan, D., Shrivastava, V., Raut, A.A., Burman, R.R., Singh, R., Singh, A.K. and Gautam, U.S. (2023). Psychometric Validation of Knowledge Test Developed on Nutrition and Nutri-rich Foods. *Journal of Community Mobilization and Sustainable Development*. 18(4),1171-1176.

Singh, S.R.K., Gautam, U.S., Harish M.N., Raut, A.A., Singh, R. and Shrivastava, V. (2024). Cluster frontline demonstration on soybean (*Glycine max*): Learning on sustainability indicators. *Indian Journal of Agricultural Sciences* 94 (3-S1), 026–033.

Warshini, A., Raut, A.A. and Sarkar, R. (2023). Knowledge of banana growers about recommended package of practices of banana production technology in Vaishali district of Bihar. *Journal of Community Mobilization and Sustainable Development*, 18(2), 426-430.

ii. Technical Bulletin:

Singh, S.R.K., Raut, A.A., Bandhan, D., Mishra, A. and Shrivastava, V. (2023). Custom Hiring Centres in Madhya Pradesh & Chhattisgarh: Status and Performances, ICAR-ATARI, Zone – IX, Jabalpur Pp. 77.

Singh, S.R.K., Mishra, A., and Raut, A.A. (2023). Technology Application and Dissemination using ICT Tools. ICAR-ATARI, Zone – IX, Jabalpur Pp. 39.

Singh, S.R.K., Raut, A.A., Mishra, A. and Shrivastava, V. (2023). Seed Societies in Madhya Pradesh: Status and Performances. ICAR-ATARI, Zone – IX, Jabalpur. Pp.35.

iii. Booklet:

Singh, S.R.K., Raut, A.A., Mishra, A., Gaur, S., Tripathi, R.L., Singh, R., Singh A.K. and Gautam, U.S. (2023). Nutri-Sensitive Agricultural Resources and Innovations (NARI) - Implementation by KVKs. Division of Agricultural Extension, ICAR, New Delhi. Pp 30.

Singh, S.R.K., Mishra, A., Raut, A.A., Singh, R., Singh, A.K. and Gautam, U.S. (2023). Mera Gaon Mera Gaurav (My Village My Pride): Implementation and Experiences. Division of Agricultural Extension, Indian Council of Agricultural Research, New Delhi. Pp. 39.

iv. Extended Summary/Abstracts:

Singh, S.R.K., Shrivastava, V., Raut, A.A., Harish, M.N. and Sharma, D.P. (2023). Nutri-SMART Village by KVKs- A pathway for nutrition security in Central India. In: *Book of Abstracts*. XVI Agricultural Science Congress, Kochi, Kerala, (India) 10-13 October, 2023. pp100.

Harish, M.N., Choudhary, A.K., Singh, S.R.K. and Raut, A.A. (2023). Effect of Tillage and Phosphorus fertilization on growth indices in wheat underMaize-Wheat Cropping System. XXII Biennial National Symposium of Indian Society of Agronomy, 22-24 November, 2023 at ICAR-CCARI, Ela, Goa. pp 142-143.

v. Other Publication:

Singh, S.R.K., Raut, A.A., Srivastava, V., Burman, R.R. and Gautam, U.S. (2023). Bringing nutritional security and women empowerment through Nutri-SMART Villages. Poster. Presented at the CGIAR GENDER Conference 'From Research to Impact: Towards just and resilient agri-food systems', New Delhi, India, 9-12 October 2023. Indian Council of Agricultural Research

12. Scientific Advisory Committee (SAC) Meetings

Scientific Advisory Committee (SAC) meeting conducted by KVKs to brief about the achievement & action plan and to get advice and feedback on the mandated activities of KVK in planned and systematic manner by the participating members from ICAR institutions, ATARI, line department, farmers, etc. The Committee monitors progress and facilitate exchange of views on the specific tasks. The Committee reviews periodically and takes further course of action deemed fit for further validation on application by the KVK. Therefore, all KVKs were mandated to conduct the meetings on periodical basis (twice in a year). The following KVKs namely KVK Mainpat, Jashpur and Bhopal has not conducted SAC meeting during the Calendar year.

Total 117 SAC meetings were conducted during 2023 in 81 functional KVKs (Table 12.1)

Table 12.1: Status of SAC conducted by KVKs

S. No.	Name of KVKs	No. of SACs conducted	Name of KVKs	No. of SACs conducted	Name of KVKs	No. of SACs conducted
	IGKV, Raipur, C.G.		**JNKVV, Jabalpur, M.P.**		**RVSKVV, Gwalior, M.P.**	
1	Balrampur	1	Anuppur	1	Agarmalwa	2
2	Bastar	1	Balaghat	1	Alirajpur	2
3	Balod	1	Betul	2	Ashoknagar	1
4	Bemetara	1	Chhatarpur	1	Barwani	2
5	Bhatapara	1	Chhindwara	1	Bhind	1
6	Bijapur	1	Damoh	1	Datia	2
7	Bilaspur	1	Dindori	3	Dewas	2
8	Dantewada	1	Harda	1	Dhar	2
9	Dhamtari	1	Jabalpur	2	Guna	2
10	Durg-I	1	Katni	1	Gwalior	2
11	Durg-II	1	Mandla	2	Jhabua	2
12	Gariyaband	1	Narsinghpur	2	Khandwa	2
13	Janjgir-Champa	1	Panna	1	Khargone	2
14	Kanker	1	Rewa	3	Manawar	2
15	Kawardha	1	Sagar	1	Mandsaur	2
16	Korba	1	Sagar-II	1	Morena	2
17	Korea	1	Seoni	2	Neemuch	2
18	Mahasamund	1	Shahdol	2	Rajgarh	2
19	Mungeli	1	Sidhi	2	Shajapur	2
20	Narayanpur	1	Singrauli	2	Sheopur	2
21	Raigarh	1	Tikamgarh	1	Shivpuri	2
22	Raipur	1	Umaria	3	Ujjain	2
23	Rajnandgaon	1	Tamia (Chhindwara-II)	1	Burhanpur (NGO)	2
24	Surguja	1	Narmadapuram (NGO)	3	Indore (NGO)	2
25	Kondagaon	1	Raisen (NGO)	1	Ratlam (NGO)	2
26	Sukma	1	Satna (NGO)	1	Sehore (NGO)	1
	Total	**26**		**42**		**49**
		Grand Total - 117				

13. Awards and Recognitions

Dr. S.R.K. Singh, Director, ICAR-ATARI, Jabalpur bestowed with **Honor of Excellence Award** for successful organization of National Conference on Next Generation Agriculture-Organic and Natural Farming Pathways: Extension Strategies & Approaches during 28th -30th January 2024.

Dr. S.R.K. Singh, Director, ICAR-ATARI, Jabalpur honoured with **J.P. Leagans Award** for outstanding contribution and recognition in the field of Dairy Extension on the occasion of Agri Expo & Awards Ceremony organized by RVSKVV Gwalior M.P. & Agri Meet Foundation U.P.

Dr. Harish M.N. and **Dr. A.A. Raut** got **Best Paper Presentation Award** for his research work in the National Conference on "Next Generation Agriculture - Organic and Natural Farming Pathways: Extension Strategies and Approaches" held at ICAR-ATARI-Jabalpur during 28-30 January 2024.

Dr. Harish M.N. got **Best Oral Paper Presentation Award** for his research work in an XXII National Symposium on "Climate Smart Agronomy for Resilient Production Systems and Livelihood Security" held at ICAR-CCARI-Goa during 22-24 November 2023.


XXII NATIONAL SYMPOSIUM
on
Climate Smart Agronomy for Resilient Production systems and Livelihood Security
Certificate
The organizer of the XXII National Symposium of The Indian Society of Agronomy hereby present the Best Oral/Rapid fire Award to the research paper presented during the seminar held at ICAR-Central Coastal Agricultural Research Institute, Goa from 22-24 November 2023 as per the detail given below
Title: Effect of tillage and phosphorus fertilization ..... Maize-wheat cropping system
Author Dr Harish M.N.
Affiliation: Scientist (Agronomy), ICAR-ATARI, JNKVV, Jabalpur
Technical session: VII
Shiva Dhar
Organizing Secretary & Secretary, The Indian Society of Agronomy
B. S. Mahapatra
Organizing Chairman & President, The Indian Society of Agronomy

Dr. Harish M.N. got **Best Ph.D. Thesis Award** from Indian Society of Agronomy-2021 in an XXII National Symposium on Climate Smart Agronomy for Resilient Production Systems and Livelihood Security held at ICAR-CCARI-Goa during 22-24 November 2023.


THE INDIAN SOCIETY OF AGRONOMY
PRESENTS
BEST PH.D. THESIS AWARD
2021
Dr. Harish M.N. is given ISA–Best Ph.D. Thesis Award for his thesis "Phosphorus management in conservation agriculture-based maize-wheat cropping system" for the year 2021.
ICAR-CCARI, Ela, Goa
22 November, 2023
(Shiva Dhar)
Secretary
(B.S. Mahapatra)
President

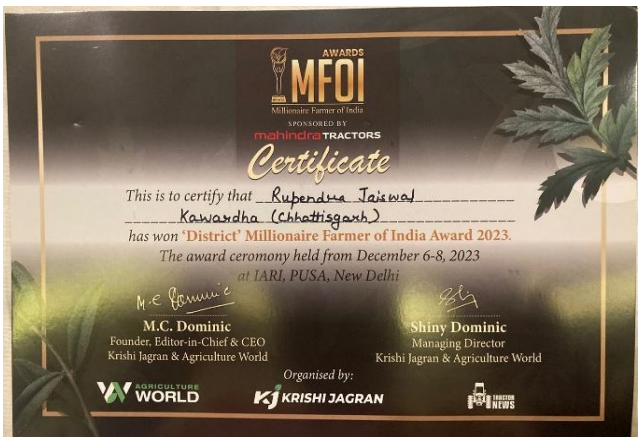
Er. T. S. Sonwani, SMS, FMP, and **Shri Yogesh Kumar Kaushik**, PA, Computer, were acknowledged for their participation in the DGCA Approved RPAS Training Programme on CAT: Rotorcraft, VLOS, Class- Small. The training was conducted by IGRUA- Drone Destination at MITS Gwalior, MP, held from 18th to 20th July 2023.


THE DRONE DESTINATION
CERTIFICATE OF COMPLETION
This is to certify that
TRIPAL SINGH SONWANI
(Roll No. IG23GWL821T01)
has successfully completed the DGCA-approved RPAS Training Program on
Cat: Rotorcraft, VLOS, Class: Small
conducted by IGRUA - Drone Destination at MITS Gwalior, MP
Ground Classes: from 10th Mar 2023 to 11th Mar 2023
Flying & Sim Training: from 18th Jul 2023 to 20th Jul 2023
MR. KRISHNENDU GUPTA
Accountable Manager
MR. SHUBHANSHU DIXIT
RPAS Instructor


THE DRONE DESTINATION
CERTIFICATE OF COMPLETION
This is to certify that
YOGESH KUMAR KAUSHIK
(Roll No. IG23GWL821T02)
has successfully completed the DGCA-approved RPAS Training Program on
Cat: Rotorcraft, VLOS, Class: Small
conducted by IGRUA - Drone Destination at MITS Gwalior, MP
Ground Classes: from 10th Mar 2023 to 11th Mar 2023
Flying & Sim Training: from 18th Jul 2023 to 20th Jul 2023
MR. KRISHNENDU GUPTA
Accountable Manager
MR. SHUBHANSHU DIXIT
RPAS Instructor

Certificate of completion DGCA Approved RPAS Training Programme

Shri Rupendra Jaiswal, an progressive farmer from Kabirdham District, was honored with the prestigious **District Millionaire Farmer of India Award 2023**. The award ceremony, hosted by Krishi Jagran & Agriculture World, took place during December 6-8, 2023 at IARI, PUSA, New Delhi, celebrating his outstanding achievements in agriculture.



Millionaire Farmer Award Certificate

Dr. K.R. Sahu, Senior Scientist and Head of KVK, Balod, received the prestigious **Agricultural Scientist Award-2022** in recognition of his outstanding contributions to Agricultural Entomology research, teaching, and extension services. The award ceremony took place during the 4th National Conference on '***Recent Advances in Agriculture and Allied Sciences, and Pharmaceutical and Environmental Sciences***,' held on October 1, 2022, at Chennai. Dr. Sahu's dedication and expertise have significantly impacted the field of agricultural sciences, furthering advancements in sustainable farming practices and environmental stewardship.

Award Received

Dr. Rajiv Kumar Singh was honored with the prestigious **Best KVK Scientist Award**. This accolade acknowledges Dr. Singh's remarkable contributions in farm advisory services and the effective transfer of technology, significantly benefiting the farming community. His dedication and innovative approaches have played a pivotal role in enhancing agricultural practices and fostering sustainable development among farmers

Best KVK Scientist Award

Dr. Savita Kumari, Technical Officer at Krishi Vigyan Kendra, Dewas, was honored with the prestigious **Krishi Ratna Award** by Akhil Bhartiya Vidhwat Parishad, Varanasi. The award ceremony took place during a national research and award workshop on 17th December 2023 in Varanasi, U.P. Dr. Savita Kumari was recognized for her significant contributions in enhancing agricultural production and productivity, thereby strengthening the economic prowess of grassroots farming communities. Her efforts also focused on reducing malnutrition among women and children through nutrition-sensitive activities in the district. The event was chaired by the esteemed Hon'ble Shankaracharya Swami Hemanand Giri from Nepal and was graced by the presence of other renowned national and international personalities.

Received Krishi Ratna Award

14. Distinguished Visitors

KVK Bastar (C.G.): Hon'ble Vice Chancellor, Anand Agricultural University, Gujarat visited Agro- Processing Center, KVK Bastar.

Krishi Vigyan Kendra, Bastar, specializes in the minor millets processing with in Chhattisgarh state, focusing on the preparation of various value-added products using minor millets at their center. Recognizing the health benefits associated with these millet products, Dr. K. B. Kathiria, Hon'ble Vice Chancellor of Anand Agricultural University, Gujarat, and Dr. S.M. Khalikar, Joint Director (Extension) at the Department of Agriculture and Farmers Welfare, Ministry of Agriculture, New Delhi, along with Dr. H.B. Patel, Director of Education at EEI, Anand, expressed keen interest in visiting the Agro-Processing Center (APC) at KVK, Bastar. They observed the center's activities and commended the work being undertaken by KVK for the welfare of tribal communities.

KVK Kabirdham (C.G.): Director Extension Services, IGKV visited at KVK Kabirdham.

Dr. A.K. Verma, Director of Extension Services, visited three-day inspection tour of Kawardha district to evaluate KVK's initiatives in farmers' fields. Dr. Verma visited various units and programs such as poultry, hatchery, vermicompost, pigeonpea seed production, Integrated Farming System, and interactions with farmers at Saroda Dadar hatchery. He also visited the Bhoramdev sugar factory in Ramhepur village, observing the entire process from cane juice extraction to sugar formation.

KVK Morena (M.P.): Dr. U.S. Gautam, DDG (Ag. Extension) New Delhi, and Dr. S.R.K. Singh, Director ATARI, Jabalpur visited KVK Morena.

Dr. U.S. Gautam, DDG (Agril. Extension), New Delhi and Dr. S.R.K. Singh, Director ATARI, Jabalpur reviewed KVK, Morena achievements and future action programmes. Dr. R.K.S. Tomar, Senior Scientist and Head, KVK, Morena presented details of KVK, Morena achievements. Other KVK Staff were present during this meeting.

KVK Jhabua (M.P.): Hon'ble Vice Chancellor and Director Extension Services, Gwalior visited Jhabua.

Dr. A.K. Shukla, VC of RVSKVV, Gwalior, and Dr. Y.P. Singh, DES of RVSKVV, Gwalior, visited various KVK units including Kadaknath rearing, Vermicompost production, Goat farming, Natural farming, Polyhouse cultivation, and the Phospho rich compost making unit at Jhabua.

KVK Bastar (C.G.): MLA of Bastar attends Akti Tihar organized by KVK Bastar.

Akti Tihar was organized in collaboration with the SG College of Agriculture and Research Station, Indira Gandhi Krishi Vishvavidyalaya, Jagdalpur, and Krishi Vigyan Kendra, Bastar, on 22 April 2023. The event was graced by Sh. Rekhchand Jain, MLA, Bastar, as the chief guest. The program was successfully conducted in the presence of Sh. Prakash Kumar Servey, Chief Executive Officer, Zila Panchayat, Bastar, and local leaders of Bastar district.

KVK Kanker (C.G.): Dr. K.B. Kathiria, Hon'ble Vice Chancellor, Anand Agricultural University, Gujarat visited different units of KVK Kanker.

Dr. K.B. Kathiria, Hon'ble Vice Chancellor of Anand Agricultural University, Gujarat, Dr. H.B. Patel, Director of Extension Education, Dr. J.K. Patel, Director of EEI, AAU, Anand, and Dr. S.M. Khalekar, Joint Director (Extension) from the Ministry of Agriculture and Farmers Welfare, Government of India, New Delhi, visited various centers of KVK Kanker on July 22, 2023. During their visit, Kanker provided an extensive overview of the center's activities and highlighted several demonstration units such as Minor Millet Processing, Kadaknath Hatchery Unit, Integrated Farming System Unit, Animal Feed Preparation Unit, Nutritional Garden, Seed Processing and Grading Unit, among others. Impressed by the comprehensive initiatives at Krishi Vigyan Kendra, all dignitaries expressed their satisfaction and congratulations to the KVK Kanker team for their outstanding work for tribal welfare.

KVK Mandla: Celebrating Mandla Millets Mahotsav 2023

The Millets Mahotsav was organised in Mandla, Madhya Pradesh on 21-22 January 2023, celebrating the district's prominence in Kodo and Kutki Millet production, designated as One District One Product (ODOP) under the PMFME Scheme by the Ministry of Food Processing Industries. Shri Prahlad Singh Patel highlighted millets' significance and market potential for value-added products in his inaugural address. The event aimed to unite stakeholders in the food processing sector, focusing on millets, through activities like exhibitions showcasing various millet-based products and processing machinery, technical sessions, and cultural performances. Over 1000 participants, including micro food processing enterprises, SHGs, and producer cooperatives, attended, fostering collaborations and market opportunities.

KVK Mainpat (C.G.): Hon'ble MLA Ramkumar Toppo attended Review meeting at KVK Mainpat

Shri Ramkumar Toppo, Hon'ble MLA of Sitapur, attended the review meeting of KVK Mainpat. Dr. Sandeep Sharma, In-charge Head, explained all the activities conducted by KVK at their farm and in farmers' fields. The Hon'ble MLA gained insight into these activities and suggested conducting training sessions on new agricultural technologies for tribal farmers and youth.

KVK Sagar (M.P.): Member of Parliament, visited various units at KVK Sagar

Member of Parliament, visited various units such as vermicompost, Poultry Unit, Nursery units, Crop cafeteria, Guava Orchard, Mango orchard, Soil testing laboratory, etc., along with KVK scientists. Farmers received expert lectures on improved technologies of soil and water conservation, natural farming, integrated farming systems, and the importance of soil testing for better crop response.

KVK Shajapur (M.P.): Dr. S.R.K. Singh, Director ATARI, Jabalpur visited KVK Shajapur

Hon'ble Director ATARI, Jabalpur visited KVK, Shajapur on 30 Jan 2023 and monitored various activities of KVK, Shajapur. On the succeeding day he visited the field of progressive farmer Dharmendra Dhakad and had a glimpse of different crops being cultivated in his Protected Cultivation Unit and also had a fruitful discussion with the farmers.

KVK Balod (C.G.): Foundation day celebrated by KVK Balod in presence of Zila Panchayat Member.

The 95th Foundation Day and Agricultural Technology Day was organized at Krishi Vigyan Kendra, Balod, on 16-18 July 2023. Mrs. Kritika Sahu, Zila Panchayat Member Balod, and Mrs. Premlata Sahu, Janapad Panchayat Adhyaksha, graced the event as chief guests. Mrs. Kritika Sahu highlighted that despite land sizes shrinking due to division, productivity can still be enhanced through modern agricultural techniques and equipment. She also stressed the importance of adopting natural farming methods.

Dr. Himanshu Pathak, Hon'ble Secretary, DARE and DG, ICAR, attends 30th Zonal Workshop of KVKs held at ICAR-CIAE, Bhopal

Hon'ble Secretary DARE and DG ICAR, New Delhi, Dr. Himanshu Pathak graced the function as Chief Guest. The other dignitaries Dr. U.S. Gautam, DDG (Agril. Extension); Dr. S.N. Jha, DDG (Agril. Engg); Dr. S.K. Chaudhary, DDG (NRM); Dr. Anupam Mishra, Vice Chancellor, CAU Imphal; Dr. P.K. Mishra, Vice Chancellor, JNKVV, Jabalpur; Dr. Girish Chandel, Vice Chancellor, IGKV, Raipur; Dr. P. Das, Former DDG (Agril. Extn); Dr. C.R. Mehta, Director, ICAR-CIAE, Bhopal; Dr. Ranjay Kumar Singh, ADG (Agril. Extn), ICAR, New Delhi; Dr. S.R. K. Singh, Director, ICAR-ATARI Jabalpur; Dr. J.S. Mishra, Director, DWR Jabalpur; Director, Extension Services of RVSKVV Gwalior, JNKV Jabalpur, and IJKV Raipur, Project Coordinators and Heads of the Divisions of ICAR-CIAE Bhopal, and Heads of KVKs under Zone-IX attendances 30th Zonal workshop of KVKs.

15. ATIC Progress Report

Under ICAR-ATARI, Zone-IX, Jabalpur (MP), in states Madhya Pradesh and Chhattisgarh four ATICs are operational and serving to the farmers with technology, products and other services for agricultural development in the region.

Table 15.1: ATIC under Madhya Pradesh and Chhattisgarh

S. No	Name of the ATIC	Name of the Host Institute	Name of the ATIC Manager
1.	ATIC, JNKVV, Jabalpur	JNKVV, Jabalpur (M.P.)	Dr. Dinkar Prasad Sharma
2.	ATIC, IGKVV, Raipur	IGKV, Raipur (C.G.)	Dr. Jyoti Bhatt
3.	ATIC, RVSKVV, Gwalior	RVSKVV, Gwalior (M.P.)	Dr. Yagya Dev Mishra
4.	ATIC, CIAE, Bhopal	Central Institute of Agricultural Engineering, Bhopal (M.P.)	Dr. V. Bhushana Babu

Table 15.2: Details of farmers visit

S. No	Purpose of visit	Number of farmers visited
1	Technology Information	9545
2	Technology Products	7611
3	Diagnostic Services	169
4	Others, (Establishment of Nursery, Processing Units value addition, Students and training participants)	1448
	Total	**18773**

Table 15.3: Facilities in the ATIC

S. No	Particulars	Availability (Please √ mark)	Number of ATICs
1	Reception counter	√	4
2	Exhibition/technology museum	√	3
3	Touch screen Kiosk	√	3
4	Cafeteria	√	2
5	Sales counter	√	4
6	Farmers' feedback register	√	4
7	Others (Visitors register, Stock store register, Telephone etc.)	√	4

Technology information provided

Table 15.4: Details on technology information

S. No	Information category	Total number of farmers benefitted	Category of information						
			Varieties / hybrids	Pest management	Disease management	Agro-techniques	Soil and water conservation	Farm Mechanization and Value addition	Animal Husbandry and fisheries
1	Crop & Livestock	3255	605	937	507	293	253	526	128
2	Kisan Call Centre/other Phone calls from farmers	3045	609	912	490	178	251	492	107
3	Training to farmers/technocrats/students	3530	922	780	505	195	415	813	200
4	Video shows	350	-	-	75	375	-	125	0
5	Others	2880	586	890	474	128	241	466	95
	Total	**13060**	**2722**	**3519**	**2051**	**1169**	**1160**	**2422**	**530**

Table 15.5: Publications (Print & Electronic media)

S. No	Particulars	Numbers sold	Revenue generated (in Rs.)	Number of farmers benefited
1	Books & Technical Bulletins	6106	58058	5594
2	**Others** Drawing CAD, Krishi Panchang, Krishi Darshika, Telephone Directory, Farm magazine & booklets	37594	1914664	29656
	Total	**43700**	**1972722**	**35250**

Table 15.6: Technology Products provided

S. No	Particulars	Quantity	Unit of quantity	Value in Rs.	Number of farmers benefited
1	Animal Feed	6560	kg	151250	100
2	Chickpea flour	665	kg	46550	300
3	Wheat flour	8585	kg	214625	700
4	Pigeon pea dal	975	kg	73125	400
5	Chilli powder	8	Number	800	08
6	Coriander powder	30	Number	1200	40
7	Turmeric powder	91.5	Number	14475	62
8	Brinjal seedlings	1250	Number	1875	15
9	Brinjal	60	kg	1500	80
10	Cabbage seedlings	600	Number	900	05
11	Cauliflower seedlings	550	Number	825	06
12	Honey	22	Bottles	3520	12

Table 15.7: Technology services provided

S. No	Particulars	Number of farmers benefited
1	Details about the services to line Departments	415
2	Farmers' visited ATIC	8592
3	Mechanization Planning Advisory	354
4	Plant diagnostics	244
5	Soil Health Cards issued & Farmers' training conducted in KVKs & NGOs	1000
6	Through Kisan Call Centre	450
7	Others (Technologies on freshwater aquaculture (hatchery management, grow out culture and post-harvest technology)	30
	Total	**11085**

16. List of Scientific, Technical and Administrative Staff

Director
Dr. S.R.K. Singh

Scientific
Dr. Dwaipayan Bardhan, Principal Scientist, ATARI, Jabalpur (Relieved from ATARI on 07.07.2023 to join as Pr. Scientist & Head, LES & IT Division, ICAR-IVRI, Bareilly)
Dr. A.A. Raut, Scientist, ATARI, Jabalpur
Dr. Harish M.N., Scientist, ATARI, Jabalpur (Joined ATARI on 20.07.2023)

PME Cell
Dr. A.A.Raut, Scientist (Agril. Extension)

Technical
Sh. Ashok Kumar Dubey, Driver

Assistant Administrative Officer
Sh. Sunil Kumar Gupta

Finance and Accounts Section
Shri. Rajeev Kulshrestha, Finance and Account Officer (Additional Charge)
Shri. Ram Sandesh Gupta, LDC

PS to Director
Sh. A.K. Bhowal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JABALPUR