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ICAR-Agricultural Technology Application Research Institute, Zone-VII
Umiam, Meghalaya-793103
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Phone	:	0364-2570081
Fax	:	0364-2570396, 2570483
Email	:	icarzcu3@gmail.com
Website	:	http://www.icarzcu3.gov.in

Chief Editor
A.K. Tripathi

Prepared and edited by
A.K.Singha
R. Bordoloi
Amrutha, T.

Compiled by
Ophilia Mawlong
Careen Nongrum
Sarah Wahlang
Mesaya R. Marak
Azriel M. Tariang
Hejbina Mehjabin Hussain
Sumit Hajong

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PREFACE

Greetings from Team ICAR-ATARI, Umiam!

The ICAR- Agricultural Technology Application Research Institute (ATARI), Umiam with its headquarters at Umiam, Meghalaya is primarily responsible for systematic coordination, monitoring and reviewing of mandated activities such as technology assessment, demonstrations, planting material production, training programmes and other extension activities of 43 KVKs in five North Eastern States of India, viz. Manipur, Meghalaya, Mizoram, Nagaland and Tripura. In addition, the institute is also engaged in formulation and implementation of need based research projects as part of strengthening agricultural extension research and knowledge management. The institute has been implementing three institutionally funded projects namely; Profit Gap Analysis of Rice (Oryza sativa L.) Cultivation in North Eastern Region of India, An appraisal of the ARYA (Attracting and Retaining Youth in Agriculture) Project in the NEH Region and Diversity of Traditional Food Systems of Indigenous Tribes in NER: A Socio-Economic Analysis and externally funded projects like NICRA, CFLD on Oilseeds & Pulses and seed hub (Pulses), ARYA, Farmers FIRST Programme, NEMA, DAMU and various special programmes like NARI, KSHAMTA, HYDROPONIC, Micro-Irrigation, STRY (Skill Training for Rural Youth) sponsored by MANAGE, Hyderabad. Besides, flagship programmes like Mera Gaon Mera Gaurav (MGMG), Krishi Kalyan Abhiyan I and II, Awareness programme on PM Kisan Sanman Nidhi, Swachhta Hi Sewa etc. were also successfully implemented.

The ICAR-ATARI Zone VII, Umiam, has effectively utilized the services of its scientists and project staffs during the lockdown period and published first eBook entitled "Prospect of Northeast Agriculture in Post COVID 19 Scenario" consisting of 16 chapters concerning various issues of North Eastern Hill Agriculture. The institute also brought out few other publications like Youth Empowerment under Attracting and Retaining Youth in Agriculture (Technical Bulletin), Turning over a new leaf in agriculture with NICRA experiences (Technical Bulletin), Pulse production for livelihood and nutritional security under cluster frontline demonstration (CFLD) programme (Technical Bulletin), Sustainable Livelihood Development of Farmers through Farmer First programme (Technical Bulletin) etc.

The KVKs under ICAR-ATARI, Umiam received a number of awards and recognitions during 2020 for their outstanding achievements in different areas of agricultural development. During the period, KVK Bishnupur received many awards, viz. "Research excellence Award" -2020, "Outstanding/Best KVK Scientist" and "Award of Excellence best extension worker" and Best KVK Award amongst the North East KVKs-2020 was conferred to KVK Imphal west, Manipur. Best Woman Scientist of the Year (2020) award conferred to Senior Scientist & Head, KVK Kolasib, Mizoram. Moreover, two farmers from Bishnupur, Manipur received the prestigious Best State Level Farmer Award from SAMETI, Government of Manipur. The institute is giving major emphasis on digitalization and e-office as part of which PFMS is successfully implemented and online submission of performance report is made compulsory for the KVKs. The institute also serves as feedback mechanism to research and extension systems while maintaining a very close liaison with ICAR headquarters and has made significant progress in research, capacity building and other extension activities during 2020.

Through this document an attempt has been made to highlight the significant achievements of the institute and the KVKs during 2020. I express my sincere thanks and gratitude to Dr. T. Mohapatra, Secretary, DARE & DG, ICAR, Govt. of India, Dr. A.K. Singh, DDG (AE), Dr. V.P. Chahal, ADG (AE), Dr. Randhir Singh Poswal, ADG (AE) and all the colleagues of Agricultural Extension Division in the Council HQ for their constant encouragement, guidance and support in executing the mandates of the institute. I also thankfully acknowledge the commendable efforts and contributions made by Dr. A.K. Singha (Pr. Scientist) and his entire team including project staff of the institute in bringing out this publication within a stipulated time period.

Place: Umiam, Meghalaya

(A.K. Tripathi)
Director (Acting)

CONTENTS

EXECUTIVE SUMMARY

The ICAR-Agricultural Technology Application Research Institute (ATARI), Zone-VII which oversees 43 KVKs spread across five North Eastern states of Manipur, Meghalaya, Nagaland, Mizoram and Tripura has been working tirelessly to fulfil the needs and aspiration of various stakeholders including farmers in the region. The support received from Directorate of Extension Education of Central Agricultural University, Imphal as well as 12 host organizations enabled the Institute to meet the needs of various stakeholders including KVKs in providing technological and methodological backstopping, information support, skill upgradation, entrepreneurship development etc. related to crops and other livestock enterprises. During 2020, the ICAR-Agricultural Technology Application Research Institute, Zone-VII, Umiam, has been implementing three institutionally funded projects namely; Profit Gap Analysis of Rice (*Oryza sativa* L.) Cultivation in North Eastern Region of India, An appraisal of the ARYA (Attracting and Retaining Youth in Agriculture) Project in the NEH Region and Diversity of Traditional Food Systems of Indigenous Tribes in NER: A Socio-Economic Analysis and five externally funded projects namely; National Innovations on Climate Resilient Agriculture (NICRA) for technology demonstration in farmers' fields through 14 selected KVKs, Attracting and Retaining Youth in Agriculture (ARYA) through 6 selected KVKs, Farmer FIRST Project (FFP) through ICAR Research Complex for NEH Region, Umiam, Meghalaya and Central Agricultural University, Imphal and Cluster Demonstration on Oilseeds and Pulses under NMOOP/NFSM through 23 KVKs and Skill Development Training Programme under Ministry of Skill Development and Entrepreneurship, Govt. of India through 21 KVKs and Skill Training of Rural Youth (STRY) on 125 different job roles by 40 KVKs with financial assistance of Rs. 52.50 lakh by MANAGE, Hyderabad.

The institute was also successful in implementing special programmes like NARI, KSHAMTA, PKVY and DFI. The ICAR-ATARI Zone VII, Umiam, has effectively utilized the services of its scientists and project staffs during the lockdown period and published first eBook entitled "Prospect of Northeast Agriculture in Post COVID 19 Scenario" consisting of 16 chapters concerning various issues of North Eastern Hill Agriculture. The institute also published a book titled "Integrated Farming System's for Doubling farmer's income in NEH region of India", four technical bulletins and four other reports. The institute also brought out few other publications like Youth Empowerment under Attracting and Retaining Youth in Agriculture (Technical Bulletin), Turning over a new leaf in agriculture with NICRA experiences (Technical Bulletin), Pulse production for livelihood and nutitional security under cluster frontline demonstration (CFLD) programme (Technical Bulletin), Sustainable Livelihood Development of Farmers through Farmer First programme (Technical Bulletin) etc.

During the period, the KVKs of the region conducted various On-Farm Testing (OFTs) through field level assessment of 284 technologies with 1205 trials benefiting 2105 farmers and refined 3 technologies with 66 trials under various thematic areas of crop enterprises with close technical support and guidance from ICAR-ATARI, Zone-VII. In addition, the KVKs evaluated 88 technologies with 434 trials and refined one technology with 5 trials in various thematic areas of livestock enterprises.The systematic coordination and monitoring mechanism of the ICAR-ATARI, Zone-VII helped the KVKs to successfully conduct as many as 5560 frontline demonstrations in 2428.02ha area to demonstrate the production potential of newly released technologies in the farmers' fields at different locations in a given farming system. These included frontline demonstrations in oilseeds (743), pulses (299), other crops (2215), livestock enterprises (1126) and other enterprises (1177). During 2020, ICAR-ATARI organized 15 HRD programmes for staff of KVKs including Heads of KVKs, newly recruited SMS and skilled supporting staff (SSS) under Zone VII.

Besides extension and research prioritization, the institute also organized programmes to review the progress of KVK activities and for action plan formulation of KVKs for the next year. Annual and Mid-term Zonal review workshops were organized to review the activities of CFLD Pulses and Oilseeds as well as NICRA Projects.

During the year 2020, KVKs organized various training programmes for the extension personnel in the zone to upgrade their knowledge and skills in the frontier areas of agricultural technology development. During the period, the KVKs organized a total of 198 courses benefiting 3709 in-service extension personnel under various courses. The KVKs conducted 33 courses in different areas of horticulture with 657 extension personnel benefitting, 22 courses in crop production benefitting 411 extension personnel and 27 courses in livestock and production management benefitting 500 extension personnel. The other important thrust areas covered were soil health and fertility management/ INM (11 courses, 280 participants), plant protection (12 courses, 251 participants), home science/women empowerment (11 courses, 241 participants), capacity building and group dynamics (10 Courses, 187 participants), others (51 Course, 830 participants), etc. In addition, the KVKs in the zone organized 296 sponsored training courses benefitted 5552 participants, as well as 132 vocational training courses for 1457 participants in various areas of income-generating activities/ enterprises.

In regard of women's empowerment, the KVKs in the zone conducted skill oriented trainings in various areas of crop and livestock enterprises to43655 women, accounting for 65.64 percent of the total beneficiaries (66510). The KVKs in the region also organised a total of 28270 extension activities for the benefit of 213521 farmers, farm women, agri-preneurs, extension personnel and rural youth including school children in the region under the close supervision and guidance of this institute, to raise awareness about improved agricultural technologies and their role in the region.

The KVKs in Zone-VII produced high-quality seeds, planting materials and bio-products during the period, including 34780 ql of quality seeds of cereals, pulses, oil seeds, vegetables and other crops, 21.07 lakh of planting materials of fruits, vegetables, forest species, plantation, ornamental crops and other crops, 51613.6 ql of bio-products and 31.06 lakh of livestock and fingerlings. The institute also successfully organised an annual action plan workshop for the year 2020 to formulate and finalise the KVKs activities, as well as an Annual Zonal Workshop of KVKs (2020) to review the progress and achievements of KVKs, as a mandatory activity. Through a regular monitoring mechanism, the institute made serious efforts to strengthen the Directorate of Extension Education (DEE) and Agricultural Technology Information Centres (ATIC) under the zone.

During the year, Central Agricultural University, Imphal made 35 visits by its Director of Extension Education (DEEs) and other scientists in KVKs under its jurisdiction. The Directorate also organised five review meetings to oversee the activities of KVKs and organised a HRD Programmes for knowledge empowerment and technology backstopping to the KVKs with total 30 KVKs involved and 98 participants/ staff were participated. As many as 20 publications including newsletters (4), training manuals (8), farm magazine (4), kisan dairy (01), calendar (03) were brought out by the Directorate during the period.

During the year under report, the KVKs analysed 7824 samples comprising of soil samples (6086), water samples (645) and plant samples (1093) to ascertain strength and weaknesses of the soil, water quality and plants health and suggested balanced nutrients for crop growth. In the process, 471 villages had been covered and as many as 14524 farmers were benefitted from this.During the period, as many as 11604 numbers of Soil Health Cards (SHCs) were distributed to 12733 farmers.The ICAR-ATARI, Zone-VII has been implementing an innovative initiative "Mera Gaon Mera Gaurav (MGMG)" with the help of KVKs under the zone to promote the direct interface of scientists with the farmers to hasten the lab to land process. The main objective of this scheme is to provide farmers with required information, knowledge and advisories on regular basis by adopting villages. During the period, a total of 43 KVKs were involved in the programme by adopting 550 villages and benefiting 8650 farmers under MGMG. During 2020, KVKs rendered Kisan Mobile Advisory Services in connection with transfer of technologies by providing information, advices, solutions and suggestions to various problems related to agriculture and allied activities by sending as many as 36572 messages which benefitted 282541 farmers in remote districts of the zone.

1.0 INTRODUCTION

1.1. Genesis of ICAR-Agricultural Technology Application Research Institute (ATARI)

The Indian Council of Agricultural Research established 8(Eight) Zonal Coordinating Units with a staff strength of 6 (Six) in each unit for implementation of Lab-to-Land programme covering 50,000 farm families across the country during 1979. Subsequently, the ICAR decided to have these units to monitor the KVK Project and increased the staff strength to 8 (Eight). During the VIIIth Plan (1992-1997), when the total number of KVKs was 261, the ICAR revised the staff strength of Zonal Coordinating Unit to 15 (Fifteen). During the XIth Plan, each Zonal Coordinating Unit was responsible for an annual budget of around Rs. 55 crores on average. For proper management of a large number of KVKs, the Zonal Coordinating Units were upgraded to the status of Project Directorate, named Zonal Project Directorate (ZPD), with total sanctioned staff strength of 17 w.e.f. March 19, 2009. Keeping in view of its revised mandates, the ZPD was promoted to the status of a research institute called Agricultural Technology Application Research Institute (ATARI) on August 11, 2015.

1.2. ICAR-Agricultural Technology Application Research Institute (ATARI), Zone-VII

The ICAR-AgriculturalTechnologyApplication Research Institute (ATARI), Zone-VII with its headquarters at Umiam, Meghalaya is primarily responsible for monitoring and reviewing the technology assessment, refinement, demonstration, training programmes and other extension activities conducted by KVKs in North East Hills Region, which comprises of five states of Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Besides, the institute is also engaged in providing guidance to the KVKs to accomplish their technical activities, ensuring the smooth flow and access of technologies to the KVKs, enabling the Directorate of Extension Education of CAU, Imphal in the zone to oversee the activities of KVKs. The ICAR-ATARI, Zone-VII also takes up need based Human Resource Development (HRD) programmes for KVK staff with adequate financial support, liaison with different stakeholders and other line departments in the region.Presently the zone has 43 KVKs under 12 different host institutes.

1.3. Mandates of the Institute (ATARI)

- Coordination and monitoring of technology application and frontline extension education programmes, and
- Strengthening agricultural extension research and knowledge management.

1.4. Major achievements at a glance

During 2020, the ICAR-Agricultural Technology Application Research Institute, Zone- VII, Umiam through its selected KVKs, research institute and agricultural university has been implementing **Five** externally funded projects namely; ***National Innovations on Climate Resilient Agriculture(NICRA)***for technology demonstration on farmers' fields through **14** selected KVKs, ***Attracting and Retaining Youth in Agriculture (ARYA)*** through **6** selected KVKs, ***Farmer FIRST Projects (FFP)*** through ICAR Research Complex for NEH Region, Umiam, Meghalaya and Central Agricultural University, Imphal and ***Cluster Demonstration on Oilseeds and Pulses under NMOOP/NFSM*** through **23** KVKs. The institute also takes up research; it has three institutionally funded project namely *Profit Gap Analysis of Rice (Oryza sativa L.) Cultivation in North Eastern Region of India, An appraisal of the ARYA (Attracting and Retaining Youth in Agriculture) Project in the NEH Region and Diversity of Traditional Food Systems of Indigenous Tribes in NER: A Socio-Economic Analysis***.** The scientists of ICAR-ATARI, Zone VII, also serve as Co-PIs for a number of national network research projects across India.

The ICAR-ATARI Zone VII, Umiam, has effectively utilized the services of its scientists and project staffs during the lockdown period and published first eBook entitled "Prospect of Northeast Agriculture in Post COVID 19 Scenario" consisting of 16 chapters concerning various issues of North Eastern Hill Agriculture. The institute also published a book titled "Integrated Farming System's for Doubling farmer's income in NEH region of India", four technical bulletins and four other reports.

During the period, the institute was effective in promoting climate resilient agricultural technologies in the North East Hill region through 14 NICRA KVKs under its jurisdiction. Moisture conservation measures (in-situ and ex-situ), soil conservation measures through modified bed technology, INM, composting and farm by product incorporation in vermicomposting are among the interventions carried out under NRM interventions. Along with their mandated activities, the KVKs under Zone-VII, rendered special assistance to the farmers in the form of laboratory based analysis of soil, water and plant samples in order to recommend balanced fertilizers,water and plant health improvement. During the period, the KVKs analyzed a total 7824 samples comprising of soil samples (6086), water samples (645) and plant samples (1093). A total of 471 villages were covered in the process, with 14524 farmers benefitted from this. As part of their mandated activities, KVKs in the region analysed soil samples to ascertain the nutrient status of the farmers' plots and make recommendation for balanced fertilization. As many as 11640 numbers of Soil Health Cards (SHCs) were distributed to 12733 farmers on different occasions and farmers' programmes organized by KVKs in the zone.

The demonstrations conducted during the year were 5560 covering a total area of 2428.02 ha and developed or created a total 251 units under different modules. Under crop production module interventions such as cultivation of improved crop varieties which could combat the different climatic aberrations that occurred, early planting of crops to escape moisture stress, cultivation of cover crops, protected cultivation of high value horticulture crops, inter cropping systems of crops, cultivation in jhum lands with suitable drought tolerant crops such as dragon fruit, popularization of high yielding varieties of crops, popularization of year round mushroom cultivation for income generation *etc.* Altogether, 3257 such demonstrations were conducted, covering an area of 893.39 ha in the region.

Interventions under livestock and fisheries module include cultivation of improved fodder for livestock population and horizontal expansion of improved shelter for livestock, improved breed, animal health camps and checkups, composite fish culture, IFS and many more. During 2020, total1126demonstrationswere conducted by benefitting 381 farmers in the region.Under livestock and fishery module 10003 animals were distributed/ treated and 223 units were developed. Institutional interventions such as custom hiring centers, contingency measures, and climate literacy through village weather stations, with a total of 100 demonstrations conducted, benefiting 541 farmers and covering a total area of 123.5 ha with 7 units constructed/developed.

In order to involve the practicing farmers in research problem identification, prioritization and to conduct experiments in farmers'field utilizing the resources available with them ICAR-ATARI, Zone-VII implemented the Farmer FIRST project which focuses on farmer's land, Innovations, Resources,Science and Technology where more than 332 farm families are being benefitted from FFP. Considering the need of retaining youth in agricultural sector towards sustaining food production has initiated a programme on Attracting and Retaining Youth in Agriculture (ARYA). During 2020, the six ARYA KVKs conducted 42 training programmes on various enterprises under the project, benefiting 882 rural youth and establishing 114 different demonstration units. In addition, KVKs conducted 70 demonstrations for 689 youth under ARYA project.

During the year 2020-21, through its 26 KVKs 3077 Cluster Frontline Demonstrations were conducted on Oilseeds and Pulses in 5 North-eastern States of Manipur, Meghalaya, Nagaland, Mizoram and Tripura spanning 1315 hectares. The total area covered by Pulses (Kharif & Rabi Season 2020-21) was 435 ha through 1029 demonstrations and in oilseeds, total area covered (Kharif & Rabi Season 2018-19) was 880 ha through 2048 demonstrations. Further more, with close technical support and guidance from ICAR-Agricultural Technology Application Research Institute (ATARI),

Zone-VII, the KVKs conducted various On-Farm Testing (OFTs) by field level assessment of 284 technologies with 1205 trials benefiting a total of 2105 farmers and refined 3 technologies with 66 trials under various thematic areas of crop enterprises during the period. Besides, the KVKs assessed 88 technologies with 434 trials and refined one technology with 5 trials in various thematic areas of livestock enterprises in the zone.Thesystematiccoordination and monitoring mechanism of the ICAR-ATARI, Zone-VII helped the KVKs to successfully conduct as many as 5560 frontline demonstrations in 2428.02 ha area to demonstrate the production potential of newly released technologies in the farmers' fields at different locations in a given farming system. These included frontline demonstrations in Oilseeds (743), Pulses (299), other crops (2215), Livestock enterprises (1126) and other enterprises (1177) respectively.

In collaboration with various allied institutions and organizations, the institute organized **19** different HRD programmes for KVK personnel, farmers, rural youth, and other agri-preneurs in the region during the year 2020. The institute also successfully organised an annual action plan workshop for the year 2020-21 to formulate and finalise the KVKs activities, as well as an Annual Zonal Workshop of KVKs (2020-21) to review the progress and achievements of KVKs. In 2020, the KVKs organized 3314 training programmes in various sectors of agriculture and related activities (Fig. 4 & 5), benefiting 66510 farmers and farm women, rural youth, in-service extension professionals, civic bodies, NGOs, entrepreneurs and others. There were 2074 courses for farmers and farm women with 43655 participants, 614 courses for rural youth with 12137 participants and 198 courses for extension personnel with 3709 participants. In addition, the KVKs in the zone conducted 296 sponsored training courses for 5552 participants, as well as 132 vocational training courses for 1457 participants in various areas of income-generating activities or enterprises. With regard to empower farm women, as many as 23249 women representing 53.25 per cent of the total beneficiaries (43655) were imparted skill-oriented trainings in different areas of crop and livestock enterprisesl.khjjm,jljlb waws by the KVKs under the zone. KVKs in the region also organized 28270 extension activities for the benefit of 213521 farmers, farm women, agri-preneurs, extension personnel, and rural youth including school children in the region, all under the close supervision and guidance of ICAR-ATARI Zone VII.

During 2020, KVKs in Zone-VII produced high-quality seeds, planting materials, and bio-products, including 34780 q of quality seeds of cereals, pulses, oil seeds, vegetables, and other crops, 21.07 lakh of planting materials of fruits, vegetables, forest species, plantation, ornamental crops and other crops, 51613.6 q of bio-products, 35629 livestock, and 30.70 lakh of fingerlings. KVK Thoubal in Manipur was selected as a Seed Hub KVK Centre under ICAR-ATARI, Umiam to address the seed requirements of the farmers in the Zone and also to increase the pulse production in the region. During 2020, total 593.91 ql of pulse seeds were produced in an area of 98 ha by Thoubal KVK.

As part of regular activity, the institute made sincere efforts in strengthening of the Directorate of Extension Education (DEE) and Agricultural Technology Information Centre (ATIC) under the zone through regular monitoring mechanism. During the year, Director of Extension Education (DEEs) of Central Agricultural University, Imphal and other scientists in KVKs under its jurisdiction made a total 30 visits.The Directorate also conducted five review meetings to oversee the operations of KVKs, as well as five HRD programmes to empower KVKs and provide technology support, with a total of 19 KVK participants/staff. As many as 20 publications including newsletters (04), farm magazine (4), kissan dairy (1), training manual (8), calendar (3) were published by DEE during 2020.

During 2020, the Government of India announced nation wide lockdown due to COVID 19, ICAR-ATARI, Umiam and its KVKs quickly prepared the crop specific advisories and disseminated the same utilizing various ICT platforms for smooth functioning of farming activities. The KVKs in Zone VII provided Kisan Mobile Advisory Services in connection with technology transfer by providing information, advice, solutions and suggestions to various problems related to agriculture and allied activities by sending 36572 messages to 282541 farmers in remote districts of the zone.

1.5. Profile of the Institute

1.5.1. Organisational Structure of ICAR-Agricultural Technology Application Research Institute (ATARI), Zone-VII

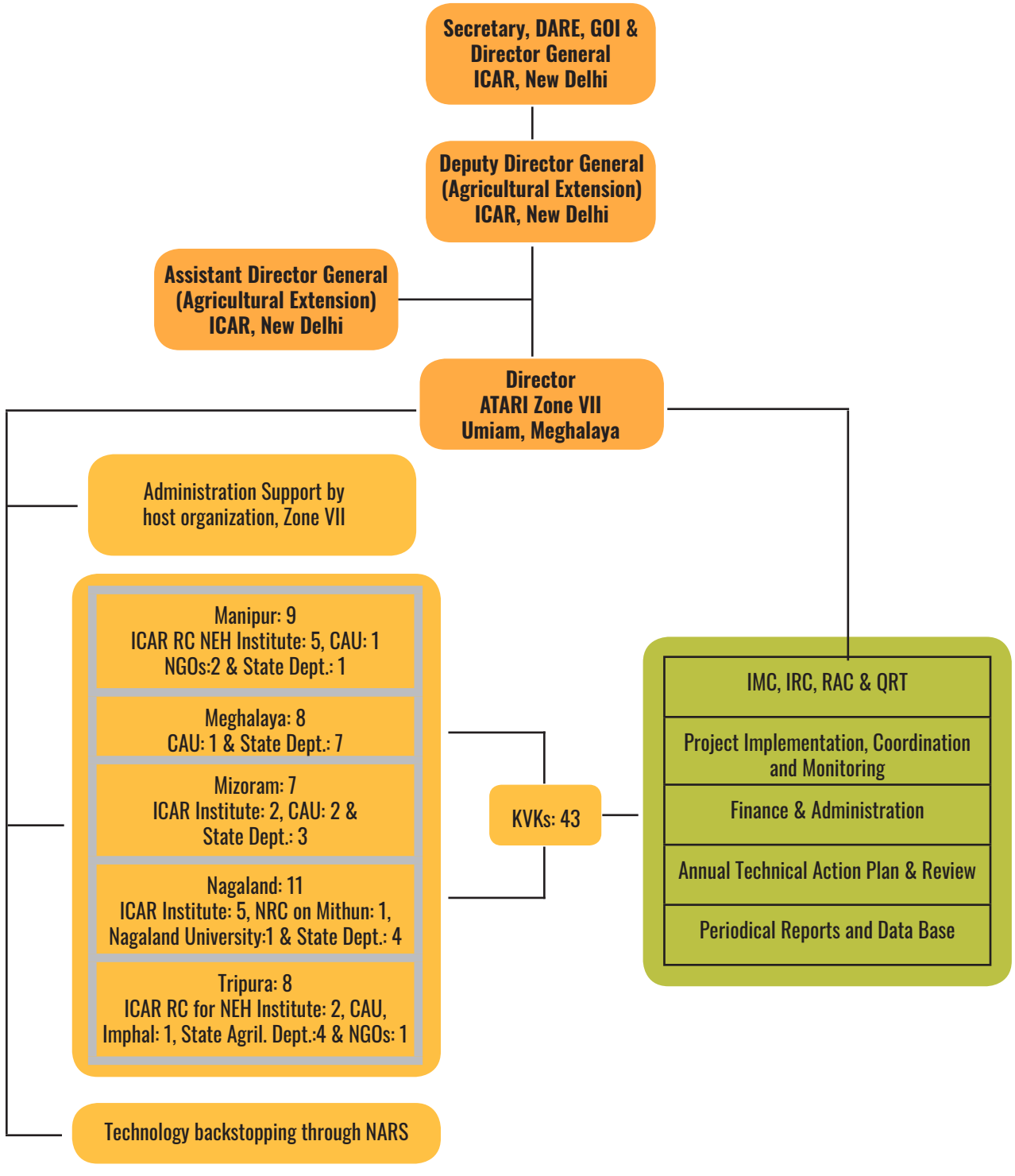

Fig 1: Organizational Structure of ICAR-ATARI, Zone VII, Umiam

1.5.2. Operational area

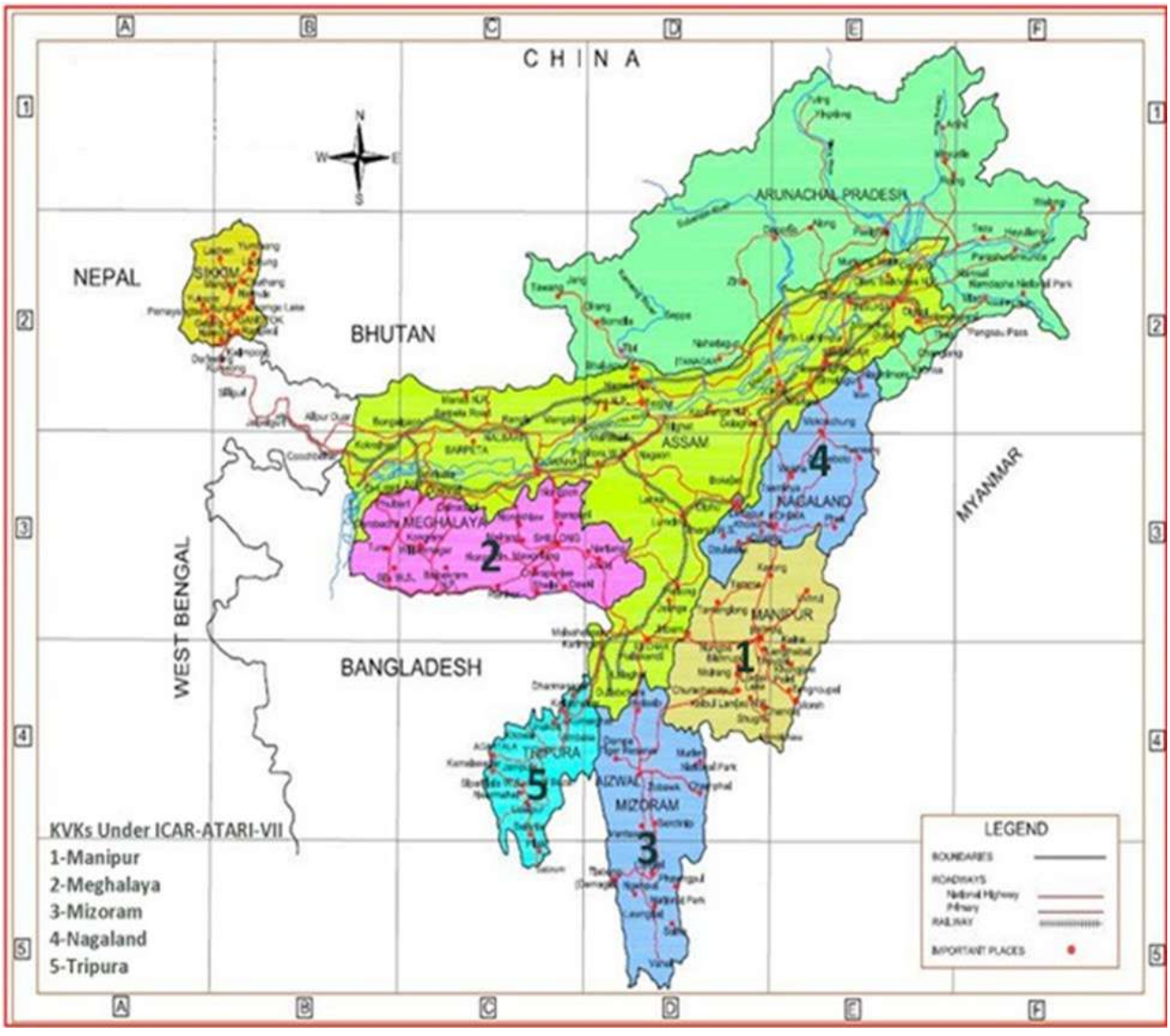

Fig 2: Operational area of ICAR-ATARI, Zone VII, Umiam

1.6. Staff Position of Agricultural Technology Application Research Institute (ATARI), Zone-VII

Out of the sanctioned staff strength of 20, presently the Agricultural Technology Application Research Institute, Zone-VII has 10 staff in position. The details of the staff position of the institute are given in **Table 1.**

Table 1: Present Staff Position of Agricultural Technology Application Research Institute, Zone-VII

Sl. No.	Category	Sanctioned Strength	In Position	Vacant
1.	Director	1	0	1
2.	**Scientific Post**			
	Principal Scientist	1	1	0
	Senior Scientist	3	1	2
	Scientist	2	2	0
	Total	**6**	**4**	**2**
3.	**Technical Staff**			
	Asst. Chief Technical Officer	1	1	0
	Driver	1	0	1
	Total	**2**	**1**	1
4.	**Administrative Post**			
	Assistant Finance & Accounts Officer	1	0	1
	Assistant Administrative Officer	1	0	1
	Private Secretary	1	1	0
	Assistant	2	0	2
	U.D.C	1	1	0
	Stenographer Grade-III	1	1	0
	LDC	2	0	2
	Total	**9**	**3**	**6**
5.	Supporting Staff			
	(SSG-I, II, III, IV)	2	**2**	0
	Total	**20**	**10**	**10**

1.7. Budget provisions

Table 2: Statement of host institute-wise and sub-head-wise break-up of revised estimate for 2020-21 in respect of ATARI & KVKs, Zone- VII, Umiam (NEH + TSP + other than NEH & TSP)

(Rs.inlakhs)

Sl.No	NameofKVK	Details	RecurringContingencies									NonRecurringContingencies						GRAND TOTAL
			Pay& Allow.	TA	HRD	KSHAMTA	NARI	Hydrophonics	Contig.	Pension	TOTAL	Equip./Fur.	HydrophonicNRC	Works	Lib	Vehicle	TOTAL	
	ICAR-ATARI,ZONE-VII	RE	168.73542	2.57385	1.48000	0.00000	0.00000	0.00000	38.33976	61.35000	272.47903	0.38734	0.00000	23.34866	0.00000	0.00000	23.73600	296.21503
II.	KVK, ZONE-VII																	
A.	ICARINSTITUTE																	
1	ICARRESEARCHCOMPLEX	RE	1644.03866	29.80000	10.20000	7.00000	7.00000	1.00000	224.23868	0.00000	1923.27734	25.80000	2.00000	49.87400	0.00000	0.00000	77.67400	2000.95134
2	NRC MITHUN	RE	127.98062	2.30000	0.60000	0.50000	0.50000	0.00000	17.88938	0.00000	149.77000	1.80000	0.00000	0.00000	0.00000	0.00000	1.80000	151.57000
	TOTALICARKVKs	RE	1772.01928	32.10000	10.80000	7.50000	7.50000	1.00000	242.12806	0.00000	2073.04734	27.60000	2.00000	49.87400	0.00000	0.00000	79.47400	2152.52134
B.	AGRIL. UNIVERSITY																	
1	CENTRAL UNIVERSITY	RE	693.51650	14.60000	5.75000	2.50000	2.50000	0.00000	97.44350	0.00000	816.31000	9.60000	1.00000	296.00000	0.00000	0.00000	306.60000	1122.91000
2	NAGALAND UNIVERSITY	RE	280.29218	2.30000	0.75000	0.50000	0.50000	0.00000	17.38782	0.00000	301.73000	1.80000	0.00000	0.00000	0.00000	0.00000	1.80000	303.53000
	TOTALSAU/CAUsKVKs	RE	973.80868	16.90000	6.50000	3.00000	3.00000	0.00000	114.83132	0.00000	1118.04000	11.40000	1.00000	296.00000	0.00000	0.00000	308.40000	1426.44000
C.	STATEGOVT.																	
1	MANIPUR	RE	210.05624	2.30000	0.75000	0.50000	0.50000	0.00000	18.38376	0.00000	232.49000	1.80000	0.00000	0.00000	0.00000	0.00000	1.80000	234.29000
2	MEGHALAYA	RE	388.51879	6.90000	2.25000	1.50000	1.50000	1.00000	58.46742	0.00000	460.13621	21.15000	0.00000	100.00000	0.00000	0.00000	121.15000	581.28621
3	MIZORAM	RE	1023.78391	16.10000	5.25000	3.50000	3.50000	1.00000	123.71891	0.00000	1176.85282	12.60000	1.00000	0.00000	0.00000	0.00000	13.60000	1190.45282
4	NAGALAND	RE	876.80281	9.20000	3.00000	2.00000	2.00000	1.00000	71.16265	0.00000	965.16546	7.20000	0.00000	0.00000	0.00000	0.00000	7.20000	972.36546
5	TRIPURA	RE	116.48164	7.60000	2.50000	2.00000	2.00000	0.00000	53.44935	0.00000	184.03099	7.60000	0.00000	225.14000	0.00000	0.00000	232.74000	416.77099
	TOTALSTATEGOVT.KVKs	RE	2615.64339	42.10000	13.75000	9.50000	9.50000	3.00000	325.18209	0.00000	3018.67548	50.35000	1.00000	325.14000	0.00000	0.00000	376.49000	3395.16548
D.	NGO																	
1	UTLOU, BISHNUPUR	RE	175.50000	2.30000	0.60000	0.50000	0.50000	0.00000	16.39000	0.00000	195.79000	1.80000	0.00000	0.00000	0.00000	0.00000	1.80000	197.59000
2	FEEDS, SENAPATI	RE	214.36342	2.30000	0.60000	0.50000	0.50000	0.00000	17.38473	0.00000	235.64815	1.80000	1.00000	0.00000	0.00000	0.00000	2.80000	238.44815
3	SRSK,KOLKATA	RE	133.73981	2.30000	0.75000	0.50000	0.50000	0.00000	17.69019	0.00000	155.48000	1.80000	0.00000	0.00000	0.00000	0.00000	1.80000	157.28000
	TOTAL NGOs	RE	523.60323	6.90000	1.95000	1.50000	1.50000	0.00000	51.46492	0.00000	586.91815	5.40000	1.00000	0.00000	0.00000	0.00000	6.40000	593.31815
	TOTAL KVKs already established	RE	5885.07458	98.00000	33.00000	21.50000	21.50000	4.00000	733.60639	0.00000	6796.68097	94.75000	5.00000	671.01400	0.00000	0.00000	770.76400	7567.44497
	NewKVKstoREEstablished	RE	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
GRANTTOTALZONE-VII,BARAPANI		RE	6053.81000	100.57385	34.48000	21.50000	21.50000	4.00000	771.94615	61.35000	7069.16000	95.13734	5.00000	694.36266	0.00000	0.00000	794.50000	7863.66000

2.0 ACHIEVEMENTS

2.1. Brief Account of KVK Genesis, mandate and growth

2.1.1. KVK Genesis

The Education Commission (1964-66) recommended that a concerted effort be made to establish specialised institutions to provide pre and post-matriculate vocational education in agriculture and allied fields to meet the training needs of a large number of youths in rural areas. The Commission further suggested that such institutions be named as Agricultural Polytechnics. The Commission's recommendations were thoroughly discussed by the Ministry of Education, Ministry of Agriculture, Planning Commission, ICAR and other associated institutions between 1966 and 1972. Finally, the ICAR mooted the idea of establishing KVKs as innovative institutions for imparting vocational training to the practicing farmers, school dropouts and field level extension functionaries. ICAR Standing Committee on Agricultural Education in its meeting held in August, 1973 observed that since the establishment of KVKs was of national importance because it would help in accelerating agricultural production and improving the socio-economic conditions of the farming community and that all related institutions should be involved in implementing this scheme. As a result, in 1973, the ICAR formed a committee chaired by Dr. Mohan Singh Mehta of Seva Mandir in Udaipur (Rajasthan) to devise a thorough plan for implementing this scheme. The Committee submitted its report in 1974.

The first KVK, on a pilot basis, was established in 1974 at Puducherry (Pondicherry) under the administrative control of the Tamil Nadu Agricultural University (TNAU), Coimbatore. In 1976-77, the Planning Commission approved the proposal of the ICAR to establish 18 KVKs during the Fifth Five Year Plan. With the growing demand for more such KVKs, the Governing Body (GB) of the ICAR approved 12 more KVKs in 1979 and they were established in the same year from Agricultural Produce Cess Fund (AP Cess Fund). Pending the clearance of Sixth Five-Year Plan scheme on KVK by the Planning Commission, the GB of the ICAR again approved 14 KVKs in 1981, which were established during 1982-83 from AP Cess Fund.

A High Level Evaluation Committee on KVK constituted by the ICAR in 1984, after thorough review of the programme, strongly recommended for establishment of more KVKs in the country. Keeping this in view the Planning Commission approved to establish 44 new KVKs during the Sixth Plan. Thus by the end of Sixth Plan, 89 KVKs had started functioning in the country. During the Seventh Plan, 20 new KVKs were established. The success of KVKs at many locations created a great demand for establishment of more KVKs in the remaining districts of the country. Accordingly, the Planning Commission further approved 74 new KVKs to be established during the period 1992-93. Again in the Eighth Plan (1992-97), 78 new KVKs were approved and the same were established in the country, making the total number of functional KVKs 261 by the end of the Eighth Plan. The number of KVKs increased to 290 during Ninth Plan with the establishment of 29 more KVKs.

On the occasion of the Independence Day Speech on 15th August, 2005 the Hon'ble Prime Minister of India announced that by the end of 2007 there should be one KVK in each of the rural districts of the country. This has taken the total number of KVKs to 551 at the end of Tenth Plan. At present, there are 722 KVKs established in the Country. This is an excellent network for exchange of technology and empowerment of farmers to enhance productivity and profitability.

All KVKs are working towards minimising the time lag between generation of technology at the research institution and its adoption in location specific farmer fields for increasing production, productivity and net farm income on a sustained basis.

2.1.2. KVK Mandates

The mandate of KVK is *Technology Assessment and Demonstration for its wider Application and to enhance Capacity development (TADA-CD).*To implement the mandate effectively through creation of awareness about improved agricultural technologies; the following activities have been defined for each KVK.

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

ii. Out scaling of farm innovations through frontline demonstration to showcase the specific benefits/ worth of technologies on farmers' fields.

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

iv. Work as Knowledge and Resource Centre for improving overall agricultural economy in the operational area.

v. Conduct frontline extension programmes and provide farm advisories using ICT and other media on varied subjects of interest to farmers

vi. Data documentation, characterization and strategic planning of farming practices.

KVK should produce technology related quality inputs/products (seeds, planting materials, bio-agents, livestock, fingerlings etc.) and make them available to farmers while operating as a single window Agricultural Technology Information Centre (ATIC). Besides, identifying and documenting selected farmer-led innovations and converge them with on-going schemes and programmes within the mandate of KVK.

2.1.3. Growth of KVKs under ICAR-ATARI, Zone VII, Umiam

The first KVK in the region was established in Kolasib district of Mizoram in February, 1979 during Rolling year (1978-1980) to impart training to furnish the farmers with skill and knowledge required for practicing advanced agricultural and allied practices. Gradually with the increase in number, the sphere of KVKs also widened to shoulder other responsibilities like conducting front line demonstrations, on-farm trials, providing trainings to other stakeholders *etc.* During the IXth plan,

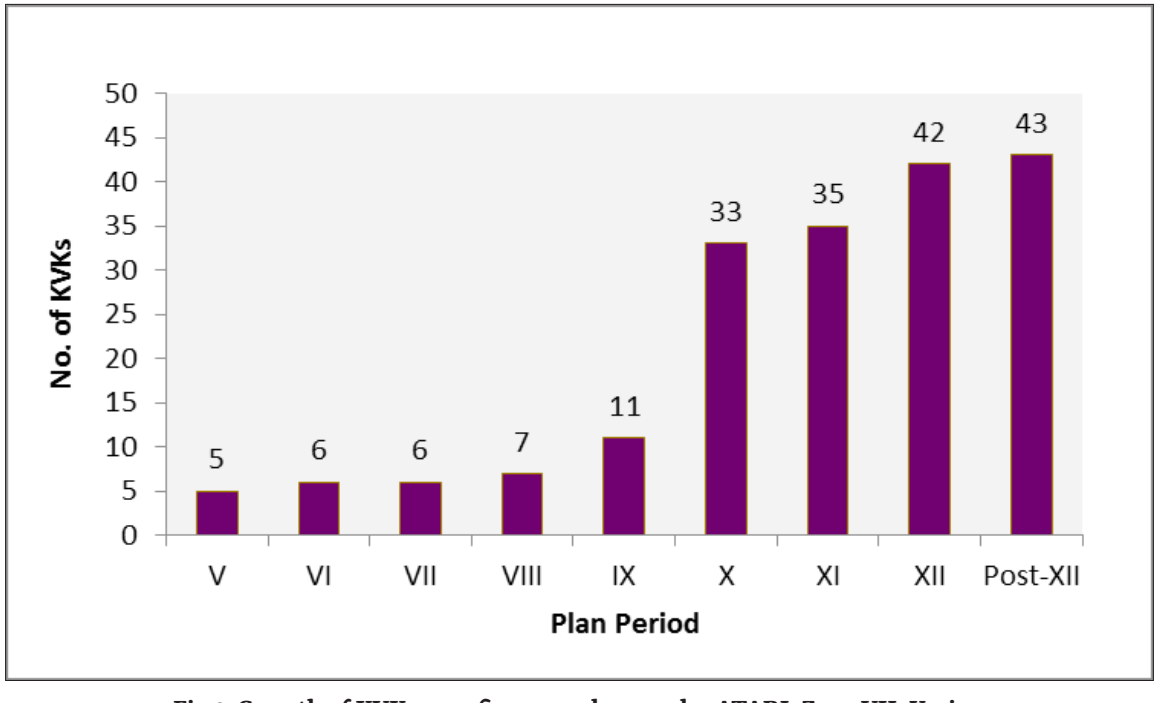

Fig 3. Growth of KVKs over five year plans under ATARI, Zone VII, Umiam

the zone had only 13 KVKs with most of them were under ICAR administration. Presently in Zone-VII, Umiam, KVKs are functioning under 12 different host organisations namely; ICAR Research Complex for NEH Region, Umiam (14), Central Agricultural University, Imphal (5), Department of Agriculture, Govt. of Manipur (1), Department of Agriculture, Govt. of Meghalaya (3), Department of Agriculture, Govt. of Nagaland (4), Department of Agriculture (Research & Education), Govt. of Mizoram (7), Dept. of Agriculture and Farmers Welfare, Govt. of Tripura (4), NRC on Mithun, Jharnapani, Nagaland (1), Nagaland University, Kohima (1), Utlou Joint Farming Cum Pisciculture Co-operative Society (UJFPCS), Bishnupur, Manipur (1), Foundation for Environment & Economic Development Services (FEEDS), Senapati, Manipur (1) and Sri Ramakrishna Seva Kendra, Kolkata, West Bengal (1). The plan-wise growth of KVKs in the Zone VII is given below in figure 4.

Table 3: State and host organization wise KVKs under ICAR-ATARI Zone VII, Umiam

State	KVKs (No.)	Host Institutions
Manipur (9)	1	UJFPCS, Bishnupur, Manipur (NGO)
	5	ICAR RC for NEH Region, Barapani
	1	CAU Imphal, Manipur
	1	FEEDS, Hengbung (NGO)
	1	State Dept of Agriculture
Meghalaya (7)	3	State Dept of Agriculture
	2	ICAR RC for NEH Region, Barapani
	2	CAU Imphal, Manipur
Mizoram (8)	1	CAU Imphal, Manipur
	7	State Dept. of Agriculture Education and Research
Nagaland (11)	5	ICAR RC for NEH Region, Barapani
	4	State Dept. of Agriculture
	1	NRC on Mithun
	1	Nagaland University
Tripura (8)	4	State Dept of Agriculture
	2	ICAR RC for NEH Region, Barapani
	1	Rama Krishna Seva Kendra (NGO), Kolkata
	1	CAU Imphal, Manipur
Total	**43**	

2.2. Manpower and Infrastructural facilities in KVKs

2.2.1. Account of Manpower in KVKs

Presently the KVKs under ICAR-ATARI, Zone VII, Umiam have 524 staff are in position out of 688 sanctioned strength in different positions like Sr. Scientist & Head, Subject Matter Specialist, Programme Assistant, Assistant, Superintendant, Stenographer Grade III, Driver and Supporting Staff (Table 4), accounting 76.16 per cent staff are in position. The remaining vacancies of different cadres are in the process of recruitment by the concerned host institutes. The State and KVK-wise present staff position of KVKs under ICAR-ATARI, Umiam is given in **Table 4**.

Table 4: State-wise and KVK-wise present staff position of KVKs under ICAR-ATARI, Zone VII, Umiam

Statement on Manpower at different KVKs (Status of posts)																																		
Sl. No.	Name of the State	Name of the KVK	Name of the Host Organization	Sr. Scientist and Head			Subject Matter Specialist/T-6			Farm Manager/T-4			Program Assistant (computer)/T-4			Program Assistant (lab technician)/T-4			Assistant			Stenographer grade III			Driver/T-1			Skilled Support Staff			Total		
				S	F	V	S	F	V	S	F	V	S	F	V	S	F	V	S	F	V	S	F	V	S	F	V	S	F	V	S	F	V
1	Manipur	Bishnupur	NGO	1	1	0	6	5	1	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	15	1
2		Churachandpur	ICAR	1	0	1	6	6	0	1	1	0	1	0	1	1	1	0	1	0	1	1	1	0	2	1	1	2	2	0	16	12	4
3		Imphal East	CAU	1	0	1	6	6	0	1	0	1	1	1	0	1	1	0	1	0	1	1	1	0	2	2	0	2	2	0	16	13	3
4		Imphal West	ICAR	1	0	1	6	5	1	1	1	0	1	1	0	1	1	0	1	0	1	1	0	1	2	2	0	2	2	0	16	12	4
5		Senapati	NGO	1	1	0	6	6	0	1	1	0	1	0	1	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	15	1
6		Tamenglong	ICAR	1	0	1	6	6	0	1	1	0	1	1	0	1	1	0	1	0	1	1	1	0	2	2	0	2	2	0	16	14	2
7		Thoubal	SG	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	16	0
8		Ukhrul	ICAR	1	0	1	6	6	0	1	1	0	1	0	1	1	0	1	1	0	1	1	1	0	2	1	1	2	2	0	16	11	5
9		Chandel	ICAR	1	0	1	6	6	0	1	1	0	1	1	0	1	0	1	1	0	1	1	1	0	2	1	1	2	2	0	16	12	4
Total				9	3	6	54	52	2	9	8	1	9	6	3	9	7	2	9	3	6	9	8	1	18	15	3	18	18	0	144	120	24

1	Meghalaya	East Khasi Hills	SG	1	1	0	6	5	1	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	15	1
2		Jaintia Hills	SG	1	1	0	6	5	1	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	15	1
3		Ri-Bhoi	ICAR	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	0	1	1	0	1	2	1	1	2	2	0	16	13	3
4		West Garo Hills	ICAR	1	0	1	6	3	3	1	0	1	1	1	0	1	1	0	1	0	1	1	0	1	2	2	0	2	2	0	16	9	7
5		West Khasi Hills	SG	1	1	0	6	5	1	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	15	1
6		South Garo Hills	CAU	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	0	1	1	1	0	2	2	0	2	2	0	16	15	1
7		East Garo Hills	CAU	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	0	1	1	1	0	2	2	0	2	2	0	16	15	1
Total				7	6	1	42	36	6	7	6	1	7	7	0	7	7	0	7	3	4	7	5	2	14	13	1	14	14	0	112	97	15
1	Mizoram	Aizawl	CAU	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	0	1	1	1	0	2	2	0	2	2	0	16	15	1
2		Champai	SG	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	1	1	16	15	1
3		Kolasib	SG	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	16	0
4		Lawngtlai	SG	1	1	0	6	5	1	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	15	1
5		Lunglei	SG	1	0	1	6	4	2	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	13	3
6		Mamit	SG	1	1	0	6	5	1	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	15	1
7		Saiha (Chimtuipui)	SG	1	1	0	6	5	1	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	15	1
8		Serchip	SG	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	16	0
Total				8	7	1	48	43	5	8	8	0	8	8	0	8	8	0	8	7	1	8	8	0	16	16	0	16	15	1	128	120	8

1	Nagaland	Dimapur	ICAR	1	0	1	6	3	3	1	1	0	1	1	0	1	1	0	1	0	1	1	1	0	2	1	1	2	2	0	16	10	6
2		Kohima	SG	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	16	0
3		Mokokchung	SG	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	2	0	2	2	0	16	16	0
4		Mon	SG	1	1	0	6	6	0	1	1	0	1	1	0	1	0	1	1	1	0	1	0	1	2	2	0	2	2	0	16	14	2
5		Phek (Medziphema)	ICAR	1	0	1	6	4	2	1	1	0	1	1	0	1	0	1	1	1	0	1	1	0	2	1	1	2	2	0	16	11	5
6		Tuensang	SG	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	0	1	1	1	0	2	2	0	2	2	0	16	15	1
7		Wokha	ICAR	1	0	1	6	4	2	1	0	1	1	0	1	1	1	0	1	0	1	1	1	0	2	2	0	2	1	1	16	9	7
8		Zunheboto	CAU	1	1	0	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	1	1	2	2	0	16	15	1
9		Longleng	ICAR	1	1	0	6	1	5	1	0	1	1	1	0	1	1	0	1	0	1	1	1	0	2	0	2	2	1	1	16	6	10
10		Kiphire	ICAR	1	0	1	6	0	6	1	0	1	1	0	1	1	0	1	1	0	1	1	0	1	2	0	2	2	0	2	16	0	16
11		Peren	ICAR	1	0	1	6	3	3	1	0	1	1	0	1	1	0	1	1	0	1	1	0	1	2	0	2	2	1	1	16	4	12
Total				11	6	5	66	45	21	11	7	4	11	8	3	11	7	4	11	5	6	11	8	3	22	13	9	22	17	5	176	116	60

1	Tripura	South Tripura	ICAR	1	0	1	6	4	2	1	0	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	1	2	0	2	2	0	2	16	4	12
2		Khowai	NGO	1	1	0	6	6	0	1	1	0	1	0	1	1	0	1	1	1	0	1	1	0	2	2	0	2	2	0	16	14	2
3		North Tripura	SG	1	0	1	6	6	0	1	1	0	1	1	0	1	1	0	1	0	1	1	0	1	2	1	1	2	2	0	16	12	4
4		Dhalai	SG	1	0	1	6	6	0	1	1	0	1	1	0	1	1	0	1	1	0	1	0	1	2	1	1	2	1	1	16	12	4
5		West Tripura	ICAR	1	0	1	6	2	4	1	0	1	1	0	1	1	0	1	1	0	1	1	0	1	2	0	2	2	0	2	16	2	14
6		Gomati	SG	1	1	0	6	6	0	1	1	0	1	0	1	1	1	0	1	0	1	1	0	1	2	0	2	2	1	1	16	10	6
7		Unakoti	SG	1	0	1	6	5	1	1	1	0	1	0	1	1	1	0	1	0	1	1	0	1	2	0	2	2	0	2	16	7	9
8		Sepahijala	SG	1	1	0	6	4	2	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	2	0	2	2	0	2	16	10	6
Total				8	3	5	48	39	9	8	6	2	8	3	5	8	5	3	8	3	5	8	2	6	16	4	12	16	6	10	128	71	57
ATARI Total				43	25	18	258	215	43	43	35	8	43	32	11	43	34	9	43	21	22	43	31	12	86	61	25	86	70	16	688	524	164

Note: S-Sanctioned, F-Filled, V-Vacant, CAU- Central Agricultural Univeristy, SG-State Government, NGO- Non-Government Organization

2.2.2. Brief account of infrastructural facilities in KVKs

With regard to infrastructure and other special facilities, 36 of the 43 KVKs have completed their administrative buildings, while seven KVKs are still operating on their proposed sites. Farmers' hostels and staff quarters have been constructed in 17 KVKs and 32 KVKs, respectively. In addition, the Zone has 419 functional demonstration units spread throughout various KVKs, with Tripura having the most (330), followed by Mizoram (36), Manipur (36), Nagaland (27) and Meghalaya (22). At present, soil and water testing facilities are available in 28 KVKs and other special facilities such as e-connectivity (11), Rain water harvesting structures (56), Portable carp hatchery (8), Integrated Farming Systems (265), Minimal Processing Facilities (12), etc are also available in KVKs in the Zone.

Mini Food Processing Unit, KVK Bishnupur

Soil Testing Lab, KVK Kolasib

Administrative Building of KVK Jaintia Hills

Table 5: Summary of present infrastructure facilities and other special facilities at KVKs under ICAR-ATARI, Zone-VII, Umiam

Information on infrastructure facilities at KVKs																	
Sl. no	State	KVK	Administrative Building (Y/N)	Staff Qarteres (Y/N)	Farmers' Hostel (Y/N)	Demonstration Unit	Soil and Water Testing Laboratory	Rain Water harvesting structure	Integrated Farming System	Minimal processing facility	e-Connectivity (ERNET)	Carp hatchery	Solar Panel	Micro-nutient Facility	Tractor	Four Wheeler	Two Wheeler
1	Manipur	Bishnupur	Y	Y	Y	2	1	1	0	1	1	2	0	0	2	1	1
2		Churachandpur	Y	Y	Y	6	1	3	1	2	0	2	1	2	3	1	0
3		Imphal East	Y	Y	N	8	1	7	2	0	0	0	3	0	3	1	0
4		Imphal West	N	N	Y	1	1	0	1	1	1	1	1	1	2	1	0
5		Senapati	Y	Y	Y	6	1	1	1	0	0	0	0	0	1	1	1
6		Tamenglong	Y	N	N	3	0	1	0	0	0	0	1	0	1	1	0
7		Thoubal	Y	N	N	6	0	1	1	1	0	1	0	0	1	1	0
8		Ukhrul	Y	Y	N	2	1	2	0	2	0	0	8	0	1	1	0
9		Chandel	Y	Y	N	3	1	1	1	0	1	0	1	1	2	1	0
Total			8	6	4	37	7	17	7	7	3	6	15	6	15	9	1

1	Meghalaya	KVK East Khasi Hills	Y	N	N	7	2	1	1	0	0	0	0	0	1	1	0
2		Jaintia Hills	Y*	N	N	0	0	0	1	0	0	0	0	0	1	1	0
3		Ri-Bhoi	Y	N	Y	0	0	0	1	0	0	0	0	0	1	1	0
4		West Garo Hills	N	Y	Y	1	0	0	0	0	1	0	0	0	2	1	1
5		West Khasi Hills	Y*	N	N	4	1	1	0	0	1	0	0	1	1	1	0
6		South Garo Hills	Y*	N	N	0	0	0	0	0	0	0	0	0	2	1	0
7		East Garo Hills	Y*	N	N	0	0	1	0	0	0	0	0	0	2	1	0
Total			6	1	2	12	3	3	3	0	2	0	0	1	10	7	1
1	Mizoram	Aizawl	Y	Y	Y	0	0	1	0	1	0	0	0	0	0	1	1
2		Champhai	Y	Y	Y	3	1	1	0	0	0	0	0	0	0	2	1
3		Kolasib	Y	Y	Y	4	1	1	1	0	0	0	0	0	0	1	1
4		Lawngtlai	Y	Y	Y	2	1	1	1	0	1	0	0	0	0	1	1
5		Lunglei	Y	Y	Y	5	1	5	3	0	0	0	3	0	0	2	1
6		Mamit	Y	Y	Y	8	1	2	1	0	1	1	0	0	0	0	1
7		Saiha (Chimtu-ipui)	Y	Y	Y	3	1	1	1	0	0	0	0	0	0	1	1
8		Serchipp	Y	Y	Y	11	1	4	0	0	0	0	0	0	1	1	0
Total			8	8	8	36	8	15	8	0	3	1	3	0	8	8	1

1	Nagaland	Dimapur	N	N	Y	2	1	2	0	0	0	0	1	0	1	1	0
2		Kohima	Y	Y (5nos.)	N	3	0	1	1	0	0	0	0	0	0	1	0
3		Mokokchung	Y	Y	N	4	1	1	0	1	0	0	0	0	0	1	0
4		Mon	Y	Y (5 nos)	N	6	0	2	0	0	1	0	0	0	0	1	0
5		Phek (Medziphe-ma)	Y	Y	N	5	1	0	1	0	0	0	0	0	1	1	0
6		Tuensang	Y	Y	N	3	1	0	0	0	0	0	0	0	1	1	0
7		Wokha	Y	Y	Y	4	2	3	1	0	1	0	0	0	2	1	0
8		Zunheboto	Y	Y	N	0	0	0	1	0	0	0	0	0	1	1	0
9		Longleng	Y	N	N	0	1	0	0	1	0	0	1	0	1	1	0
10		Kiphire	N	N	N	0	0	0	0	0	0	0	0	0	1	1	0
11		Peren	N	N	N	0	0	0	0	0	0	0	0	0	1	1	0
Total			8	15	2	27	7	9	4	2	2	0	2	0	9	11	0

1		South Tripura	N	N	N	4	1	2	1	1	1	1	0	0	1	1	1
2		Khowai	Y	Y	Y	24	1	6	1	1	1	0	1	3	1	1	0
3		North Tripura	Y*	N	N	8	0	0	1	0	0	0	0	0	1	1	0
4	Tripura	Dhalai	Y*	N	N	4	1	1	1	0	0	0	0	0	1	1	0
5		West Tripura	N	N	N	0	0	0	0	0	0	0	0	0	1	1	0
6		Gomati	Y*	N	N	92	1	2	0	1	0	0	0	0	0	1	0
7		Unakoti	Y*	N	N	198	0	0	0	0	0	0	0	0	0	1	0
8		Sepahijala	Y*	N	N	0	0	0	0	0	0	0	0	0	2	1	0
Total			6	1	1	330	4	11	4	3	2	1	1	3	7	8	1
	Grand Total		36	32	17	442	30	55	26	12	12	8	21	10	49	43	4

Note: (*) - Under construction

2.3. Technology assessment and refinement

During the period, the KVKs in Zone-VII assessed and refined numerous agricultural technologies on farmers' fields in order to analyse the site specificity of agricultural technologies under various farming systems.

The **Table 6** shows that a total 284 technologies were taken up by KVKs on different areas of crop enterprises for their assessment to identify location specific technologies under local farming situations with 1205 trials benefitting 2105 farmers. The highest number of technologies (78) was assessed in the state of Manipur with 326 trials. This was followed by Nagaland (67) with 205 trials, Mizoram (61) with 216 trials, Meghalaya (48) with 191 trials and Tripura (30) with 267 trials. During the period, about 88 technologies were assessed, with 434 trials related to livestock enterprises such as cattle, piggery, fishery, poultry, duckery, goatery, rabbitry and so on, which could benefit a total of 628 farmers in the zone. In terms of refinement, 3 distinct Crop Based technologies were refined on farmers' fields, with 66 trials benefiting 83 farmers. Only one technology related to livestock enterprises were refined via five trials benefitting six farmers based on local needs and farming systems.

Table 6: State wise summary of Agricultural Technologies Assessed and Refined by KVKs during 2020

Sl. No.	Agricultural Technologies Assessed During 2020						
	Area	**States**					
1	**Crops Based Technologies**	**Manipur**	**Meghalaya**	**Mizoram**	**Nagaland**	**Tripura**	**Total**
i)	Technologies (no.)	78	48	61	67	30	**284**
ii)	Trials(no.)	326	191	216	205	267	**1205**
iii)	Beneficiaries (no.)	341	660	260	442	402	**2105**
2	**Livestock Technologies**						
i)	Technologies (no.)	28	22	14	16	8	**88**
ii)	Trials(no.)	99	108	57	99	71	**434**
iii)	Beneficiaries (no.)	99	127	71	212	119	**628**
Agricultural Technologies Refined during 2020							
1	**Crops Based Technologies**	**Manipur**	**Meghalaya**	**Mizoram**	**Nagaland**	**Tripura**	**Total**
i)	Technologies (no.)	0	0	1	2	0	**3**
ii)	Trials(no.)	0	0	3	63	0	**66**
iii)	Beneficiaries (no.)	0	0	20	63	0	**83**
2	**Livestock Technologies**						
i)	Technologies (no.)	0	1	0	0	0	**1**
ii)	Trials(no.)	0	5	0	0	0	**5**
iii)	Beneficiaries (no.)	0	5	0	0	0	**5**

2.3.1. Technology Assessment

During the year 2020-21, on an average 284 technologies were taken up on different areas of crop enterprises by the KVKs for their assessment to identify location specific technologies under local farming situations with 1205 trials and benefitting 2105 farmers in the Zone VII. The major thematic areas included for assessment were varietal evaluation with 313 trials, integrated nutrient management (125), integrated pest management (156), integrated crop management (68), integrated disease management (31), resource conservation technology (36), value addition (73),drudgery reduction (21),weed management (9), water management (6), biological control (5), mushroom cultivation (9), farm machineries/mechanization (9), soil health management (14) etc. (**Table 7).**

Table 7: Summary of Crops Based Technologies assessed under different thematic areas during 2020

Sl. No.	Thematic areas	No. of Technologies Assessed	No. of Trials	No. of Locations	Farmer Beneficiaries (No.)
1.	Varietal Evaluation	85	313	218	353
2.	Integrated Nutrient Management	29	125	61	192
3.	Integrated Crop Management	19	68	47	74
4.	Integrated Pest Management	34	156	84	171
5.	Integrated Disease Management	9	31	22	34
6.	Weed Management	3	9	7	8
7.	Water management	2	6	4	6
8.	Value addition	15	73	50	189
9.	Seed / Plant production	5	14	15	60
10.	Post-harvest lost/ technology	6	23	12	23
11.	Resource Conservation Technologies (RCTs)	11	36	25	36
12.	Drudgery reduction	4	21	6	20
13.	Cropping system	2	9	4	28
14.	Canopy Management	1	2	2	20
15.	Biological control	2	5	4	20
16.	Storage technique	3	10	7	13
17.	Farm Machineries	3	9	7	9
18.	Mushroom cultivation	3	9	9	11
19.	Soil Health Management	3	14	4	14
20.	Protected Cultivation	1	3	2	3
21.	Fertigation Technique	1	3	2	3
22.	Soil & Water Conservation	1	3	2	3
23.	Disease Management	1	3	1	4
24.	Soil Fertility Management	1	10	1	10
25.	Others	40	250	92	801
Total		**284**	**1205**	**688**	**2105**

During 2020, a total of 88 technologies with 434 trials related to livestock enterprises such as cattle, piggery, fishery, poultry, duckery, goatery, rabbitry and so on were assessed in 285 different locations, benefiting 628 farmers. Breed evaluation (96), production and management (93), feed and fodder management (58), nutrition management (60), fish production (52), integrated farming system (18), disease management (6), breed introduction (5) etc. are the major thematic areas under livestock technologies assessment (**Table 8).**

Table 8: Summary of Livestock Technologies Assessed under different thematic areas during 2020

Sl. No.	Thematic areas	No. of Technologies Assessed	No. of Trials	No. of Locations	Farmer Beneficiaries (No.)
1.	Disease Management	2	6	6	6
2.	Evaluation of breed	18	96	53	115
3.	Breed Introduction	1	5	5	5
4.	Feed and fodder Management	15	60	39	58
5.	Nutrition Management	10	60	36	67
6.	Fish production	14	52	44	64
7.	Integrated Farming System	5	18	17	18
8.	Production and Management	12	93	55	140
9.	Housing	2	4	4	107
10.	Others	9	40	26	48
Total		**88**	**434**	**285**	**628**

2.3.2. Technology Refinement

Three crop based technologies related to cereals, oilseeds, vegetables and fruit crops were taken up for refinement with 66 trials at various locations (**Table 9**). Two technologies were refined under the thematic area impact assessment by conducting 63 trials benefiting 80 farmers and one technology was refined under the mushroom cultivation by conducting three trials benefiting three farmer beneficiaries.

Table 9: Summary of Crop based Technologies refined under different thematic areas during 2020

Sl. No.	Thematic areas	No. of Technologies Refined	No. of Trials	No. of Locations	Farmer Beneficiaries (No.)
1.	Impact assessment	2	63	11	80
2.	Mushroom cultivation	1	3	3	3
Total		**3**	**66**	**14**	**83**

Table 10: Summary of Livestock Technologies refined under different thematic areas during 2020

Thematic areas	No. of Technologies Refined	No. of Trials	No. of Locations	Farmer Beneficiaries (No.)
Improved Housing system	1	5	5	5

In livestock sector, one technology refined with five trials under thematic area Improved Housing System with five farmer beneficiaries (**Table 10).**

2.4. Front Line Demonstrations

KVKs under ICAR-ATARI, Umiam conducted Frontline demonstrations (FLDs) on farmers' fields at various locations in a given farming system to demonstrate the production potential of newly released technologies, as well as organise various extension activities and programmes for farmers, farm women, and extension workers to disseminate various technologies. During 2020, the KVKs conducted a total of 5560 frontline demonstrations covering 2428.02 ha in close collaboration with farmers to assess the production potential of improved agricultural technologies such as oilseeds (743), pulses (299), other crops (2215), livestock enterprises (1126) and other enterprises (1177).

2.4.1. FLD on Oilseeds

During the year 2020 a total of 743 demonstrations were conducted in different oilseed crops like groundnut, rapeseed, mustard, sesamum, soybean and toria covering 242ha area (**Table 11**). Demonstration on different varieties of Soybean (DSB 19, VL 63, JS-95-60, VL-77, PK 1225, JS-335) produced an average yield of 11.56 q/ha, a 44.27 percent increase above the local check yields of 8.02 q/ha. Similarly, Groundnut cultivars such as ICGS 76, TG 37 A produced 16.98 q/ha compared to the local check 10.92 q/ha with 67.70 per cent increase in yield over local check. Rapeseed cultivars such as (TS-38, Pusa Mustard-27, TS-67) produced an average yield of 9.33 q/ha in demonstration, compared to only 7.09 q/ha for the local check, a yield increase of 31.32 percent. While Toria varieties such as TS-67 and Tripura Toria yielded 8.13 q/ha on average against a local check of 6.10 q/ha, an increase of 39.74 percent and Mustard variety NRCHB-101 yielded 9.04 q/ha on average against a local check of 6.71 q/ha, an increase of 35.33 percent.Among the oilseed crops, the highest number of demonstrations (250)was conducted in Mustard, covering an area of 74 ha followed by Rapeseed (139) with an area of 74 ha and Toria (110) with 26.5 ha area. The highest percentage increase in yield was observed in Groundnut (67.70 %) with highest B: C ratio of 2.82 followed by Soyabean (42.28 %) ,Toria (39.74 %) and Mustard (35.33 %).

Table 11: Frontline Demonstration on Oilseeds Crops During 2020

Crops	Varieties	No. Of Farmers/ Demo.	Area (ha)	Average yield (q/ha)		Avg. % Increase	Avg. cost of cultivation (Rs./ha)		Avg. Benefit-Cost ratio
				Demo.	Check		Demo.	Check	
Soybean	DSB 19, VL 63, JS-95-60, VL-77, PK 1225, JS-335	76	23.5	17.42	12.28	42.28	35994.87	31251.67	2.70
Groundnut	ICGS 76, TG 37 A,	90	33	16.98	10.92	67.70	40410.00	33410.00	2.82
Rapeseed	TS-38, Pusa Mustard-27, TS-67,	139	74	9.33	7.09	31.32	20925.83	18916.67	2.13
Mustard	NRCHB-101	250	74	9.04	6.71	35.33	18770.50	16867.83	2.27
Toria	TS- 67, Tripura Toria	110	26.5	8.13	6.10	39.74	21131	20568.667	2.2
Sesamum	Tripura Siphing	78	11	8.5	5	70	29823	25750	2.28
Total		743	242	11.56	8.02	44.27	27842.53	24460.81	2.40

2.4.2. FLD on Pulses

A total of 509 demonstrations covering an area of 165.95 ha were conducted on various pulse crops such as Black gram, Green gram, Lentil, Arhar, French bean, Field pea and Lathyrus (Table 12). The highest demonstrations were conducted in Fieldpea (94) varieties such as Aman, Prakash, Arkeland Rachna, covering 24 ha with an average yield of 21 q/ha compared to a local check of 14 q/ha, resulting in a 38 per cent increase in yield over the local check. Peas (3.00) with varieties like Pusa Pragati and Azad had the most promising B:C ratio.

Table 12: Frontline Demonstration on Pulses Crops During 2020

Crops	Varieties	No. Of Farmers/ Demo.	Area (ha)	Average yield (q/ha)		Avg. % Increase	Avg. cost of cultivation (Rs./ha)		Avg. Bene-fit-Cost ratio
				Demo.	Check		Demo.	Check	
Blackgram	PU-31, Tripura Maskolai, IPU 2-43	47	18	9.29	7.83	19.59	30926.67	22506.67	2.13
Field pea	Aman, Prakash, Arkel, Rachna, Aman	94	24	21	14	38	33318	28111	2
Peas	Pusa pragati, Azad	12	3	28	22	25	12225	10250	3
Frenchbean	Anupama, Kholar	48	4	39.59	26.82	44.96	29312.50	18625.00	2.09
Greengram	IPM 2-3	10	5	6.3	-	-	24500	-	2.27
Lentil	HUL-57, WBL-77	40	19.50	8.45	6.79	29.60	25922.50	25977.50	2.64
Lathyrus	Ratan	20	8	5.6	3.9	43.59	14944	16500	1.49
Arhar	TS3R	3	0.75	9.82	6.74	45.70	33000	33000	2.6
Rajmah	Arka Arjun, TR 1	25	12	10.78	8.95	20.37	40266	38375	2.38
Total		509	165.95	22.41	16.73	40.33	25175.77	22197.65	2.13

2.4.3. FLD on Other Crops

During the year 2020, a total of 2215 demonstrations were conducted on cereal crops, vegetables, fruits, flowers, spices and condiments, cash crops, cole crops, stem and tuber crops and fodder crops covering 557.64 ha in 28 units. Rice varieties such as CAU R1, Maniphou-11, Maniphou-12, RC Maniphou 13, RCM-10, TS3R, SAVA 134, Shahsarang, Shahsarang 1, Local, Abhshek, Local Jhum Paddy, Gomati, Kalikhasha, Pusa sugandhi 5, BRRI-75 t, Indam-200017 covered the largest area of 233 ha. The highest number of demonstrations (663) was also conducted under the same crop. Mushrooms had the highest B:C ratio (7.00), followed by capsicum (5.21) and lemon (5.21). (4.48). While Bitter gourd had the highest percentage increase in yield (87.50 %), followed by Broadbean (64.17 %) and Radish (59.48 %). The average demonstration yield of rice was 37 q/ha, compared to 27 q/ha for the local check (Table 13). Significant number of demonstrations were also conducted in maize (88 demonstrations) varieties like RCM-1-76, HQPM5, HQPM1, RCM-156, HQPM 5, RCM 76, Mimban (Local), Disha-3502, VMH-45 and HQPM followed by tomato (151 demonstrations) varieties namely Arka Rakshak, Arka Samrat, Samrudhi, Chiranjevi and Emerald.

FLD on HQPM-1

Table 13: Frontline Demonstration on Other Crops during 2020

Crops	Varieties	No. Of Farmers/ Demo.	Area (ha)	Average yield (q/ha)		Avg. % Increase	Avg. cost of cultivation (Rs./.ha)		Avg. Benefit-Cost ratio
				Demo.	Check		Demo.	Check	
CEREALS									
Paddy	CAU R1, Maniphou-11, Maniphou-12, RC Maniphou 13, RCM-10, TS3R, SAVA 134, Shahsarang, Shahsarang 1, Local, Abhshek, Local Jhum Paddy, Gomati, Kalikhasha, Pusa sugandhi 5, BRRI-75 t, Indam- 200017	663	233	37	27	30	41838	36810	2.03
Maize	RCM-1-76, HQPM5, HQPM1, RCM-156, HQPM 5, RCM 76, Mimban (Local), Disha-3502, VMH-45, HQPM	385	88	39	28	36	35783	32346	2.34
Wheat	HD2967	10	4	21	0	0	30500	0	2
Finger Millet	KMR-340	10	4	20	16	19	21765	23000	3
Sub Total		1068	328.60	28.96	18.04	21.29	32471.56	23038.94	2.35
VEGETABLES									
Tomato	Arka Rakshak, Arka Samrat, Samrudhi, Chiranjevi, Emerald	151	26.52	274.71	204.67	30.22	106288.98	70907.17	3.36
Brinjal	Arka Anand, NS 797	60	5.02	191.33	141.67	32.15	118533.33	86000.00	3.14
Chilli	Arka Meghana	10	0	91	80	13	98500	0	4
Okra	Arka Nikita, Super green	28	5.3	75	59.5	28.25	85500	76000	2.4
Broccoli	Green Magic, Centurio	49	9.02	222.78	184.88	19.59	107094.25	56093.75	3.58
Garden Pea	Arka Priya, Arkel	35	5	35	23	42	31933	27720	3.45
Broadbean	Local cv. Hawaimubi	10	2	59.10	36.00	64.17	81470.00	93680.00	3.63
Cowpea	Local Cultivar	8	2	56.50	55.00	2.73	68200.00	34500.00	3.13
Cabbage	Rareball, Green Hero, Golden Acre, Mahy 139, Improved Bahar, Rhyozeki, Wonderball, BC-76	73	17.70	231.47	167.01	40.06	108962.67	94180.83	2.98
Community vegetable nursery management on cabbage	Mahy 139	40	0.06	0	0	100	0	0	2.07
Cauliflower	Pusa Snowball	10	3	190.00	121.00	57.02	58500.00	59300.00	3.24
Frenchbean	Arka Anoop, Zorin, Arka Arjun	76	6.75	103.08	75.39	39.65	106867.50	87234.17	3.69
Bean	Local	10	2.5	55	49	12.25	79200	0	2.9
Pumpkin	Arjuna,Mai Ban (local)	16	3	223.20	154.25	44.93	76250.00	70500.00	2.65
Cucumber	Indam Swadist, Long green, Local	27	4.25	308.07	64.70	8.75	90414.17	34195.83	2.75
Capsicum	Arka Athulya, California Wonder	23	0.12	190.00	103.00	0	89000.00	0	5.21
Mustard	Local	10	5	7.26	5.22	39.08	65000	60000	2.23
Potato	Kufri Megha, Kufri Jyoti, Kufri Gird-hari,HPS II/67 (TPS)	78	19.1	111.63083	85.015	45.28	61165	56239.8333	4.0475
Carrot	Pusa Vrishti	15	3.75	130	95	36.84	110638	0	2.35
Radish	Arka Nishant	10	1	185	116	59.48	102322	80500	5.4
Bitter Gourd	Radha	10	2	90	48	87.5	167000	128000	1.75

Bottle Gourd	Dhari loki	10	0.5	188.32	130.54	44.26	102308.6	92308.6	2.73
Sub Total		759	123.11	137.19	90.83	51.04	87052.17	54880.01	3.23
SPICES									
Chilli	Local, Mizo birds eye chilli, Arka Meghana	25	8	94	52	40.00	50517	45488	2
Ginger	Vareda, Nadia, local,Thinglaidum (IPM)	50	19	140	113	23.00	91389	84276	3
Turmeric	Megha Turmeric – 1	5	0	2.55	1.74	46.55	78000	0	2.51
Onion	Nasik red, AFDR	24	2	157.01	142.56	11.46	209400	81350	2.3
Sub Total		104	28.52	98.37	77.35	27.17	107326.47	52778.36	2.53
FRUITS									
Mandarin Orange	Khasi Mandarin, Local	125	31.5	27734.584	13048.897	57.42	179315.163	112371.333	3.76
Lemon	Kachai lemon	10	10	83.5	19.4	0	2.98	0	4.48
Pine apple	Giant Kew, Kew, Queen	39	14.75	106	69.25	24.45	63625	30255	1.41
Kiwi fruit	Allison	2	0.15	2700	0	0	52800	0	4.6
Peach	Alton	5	1	58.2	36.64	58.84	81600	61200	2.14
Dragon Fruit	Hylocereus Undatus, Hylocereus costaricensis	10	4	0	0	0	0	0	0
Papaya	Red Lady	5	1	0	0	0	0	0	0
Grape	Bangalore Blue	10	5	55	48	14.58	84300	0	3.2
Prunus nepalensis (Sohiong)	Local	4	0	0	0	0	6750	1500	2.6
Sub Total		210	67.4	3415.25	1469.13	132.47	52043.68	22814.04	2.47
FLORICULTURE									
Gladiolus		10	5	140000	125000	12	250000	240000	2.8
Anthurium	Maxima/ IDM	5	0.075	4895	3105	57.65	14500	11520	2.62
Sub Total		15	5						2.71
MUSHROOM									
Mushroom	Oyster Mushroom	34	24 units	225.4	195	13.33	6000	5650	7.64
Sub Total		34	24 units						7.64
OTHERS									
Stevia	Morita	5	1	8.21	6.45	27.29	81470	93680	3.63
Green Manuring		0	1	23.4	19.8	14.1	1300	1590	1.9
INM	Ginger	3	0.4	101	92.76	18.2	45400	40000	2.3
IPM	Maize	3	1.5	21.3	18	18.5	35000	30000	1.8
Colocasia	Local	4	1	120	80	33.33	35000	0	3.02
Nutritional Gardening	16 vegetables spp. (Cabbage, Pea, Coriander, Carrot, Onion, Maize, Beans, Spinach, Tomato, Lettuce, Cauliflower, Chilli, Mustard, Pakchoy, Chinese Cabbage, Feenugreek, etc)	10	4 units	70% saving in food budget	21% saving in food budget	45% increased saving in food budget	3746	2720	0.56
Sub Total		25	4.90						
Total		2215	557.53						

Table 14: State-wise details of FLDs on Oilseeds, Pulses and Other Crops during 2020

Crops	Manipur			Meghalaya			Mizoram			Nagaland			Tripura			Total Farmers/ Demo.	Total Area (ha.)
	KVK	Farmers/ Demo	Area (ha.)	KVK	Farmers/ Demo	Area (ha.)	KVK	Farmers/ Demo	Area (ha.)	KVK	Farmers/ Demo	Area (ha.)	KVK	Farmers/ Demo	Area (ha.)		
OILSEEDS																	
Soybean	4	41	11	0	0	0	1	10	6.5	3	25	6	0	0	0	76	23.5
Groundnut	1	8	2	0	0	0	0	0	0	1	20	1	1	62	30	90	33
Rapeseed & Mustard	3	84	50	2	102	36	0	0	0	1	10	2	4	193	60	389	148
Toria	0	0	0	0	0	0	0	0	0	3	51	16	1	59	10.5	110	26.5
Sesamum	0	0	0	0	0	0	0	0	0	0	0	0	1	78	11	78	11
Sub Total	8	133	63	2	102	36	1	10	6.5	8	106	25	7	392	111.5	743	242
PULSES																	
Blackgram	3	37	16	1	5	2	0	0	0	0	0	0	0	0	0	42	18
Field pea	5	38	13.5	1	5	2	1	5	2.5	4	46	6	1	5	0	99	24
Garden Pea	0	0	0	0	0	0	0	0	0	2	12	2.5	0	0	0	12	2.5
Frenchbean	1	4	1	0	0	0	0	0	0	1	44	3	0	0	0	48	4
Rajma	0	0	0	0	0	0	2	25	12	0	0	0	0	0	0	25	12
Greengram	1	10	5	0	0	0	0	0	0	0	0	0	0	0	0	10	5
Lentil	1	30	17.5	0	0	0	1	10	2	0	0	0	0	0	0	40	19.5
Arhar	1	3	0.75	0	0	0	0	0	0	0	0	0	0	0	0	3	0.75
Lathyrus	0	0	0	0	0	0	0	0	0	0	0	0	1	20	8	20	8
Sub Total	12	122	53.75	2	10	4	4	40	16.5	7	102	11.5	2	25	8	299	93.75
CEREALS																	
Paddy	8	190	101.75	3	62	25	2	15	5.5	5	92	20.5	7	304	80.1	663	232.85
Maize	5	35	15.75	0	0	0	4	42	30.3	5	130	14	4	178	28.2	385	88.25
Finger millet	0	0	0	0	0	0	0	0	0	0	0	0	1	10	4	10	4
Wheat	1	10	3.5	0	0	0	0	0	0	0	0	0	0	0	0	10	3.5
Sub Total	14	235	121	3	62	25	6	57	35.8	10	222	34.5	12	492	112.3	1068	328.6
VEGETABLES																	
Tomato	2	12	1.75	2	40	2.02	6	80	15.25	1	19	7.5	0	0	0	151	26.52
Chilli	0	0	0	1	10	0.02	0	0	0	0	0	0	0	0	0	10	0.02

Capsicum	1	3	0.1	1	20	0.02	0	0	0	0	0	0	0	0	0	23	0.12
Broccoli	2	9	1.75	1	20	0.02	0	0	0	2	10	3.25	1	10	4	49	9.02
Okra	0	0	0	0	0	0	1	20	5	1	8	0.3	0	0	0	28	5.3
Brinjal	0	0	0	1	80	0.12	1	10	5	0	0	0	1	10	0	100	5.12
Cabbage	3	15	4.5	2	15	3	2	20	7	3	23	3.2	0	0	0	73	17.7
Potato	0	0	0	0	0	0	1	5	5	2	13	2.5	4	60	11.6	78	19.1
Pumpkin	1	6	1	0	0	0	1	10	2	0	0	0	0	0	0	16	3
Bitter gourd	0	0	0	0	0	0	0	0	0	0	0	0	1	10	2	10	2
Cucumber	1	3	3	0	0	0	2	20	0.25	1	4	1	0	0	0	27	4.25
Bottle gourd	0	0	0	0	0	0	0	0	0	0	0	0	1	10	0.5	10	0.5
Cow pea	1	8	2	0	0	0	0	0	0	0	0	0	0	0	0	8	2
Garden Pea	1	6	1	0	0	0	0	0	0	0	4	1.5	1	25	2	35	4.5
French Bean	1	16	2	0	0	0	4	40	3.25	2	20	1.5	0	0	0	76	6.75
Broad beans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bean (Local)	1	10	2	0	0	0	1	10	2.5	0	0	0	0	0	0	20	4.5
Tapioca	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cauliflower	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mustard leaf	1	10	3	0	0	0	1	10	5	0	0	0	0	0	0	20	8
Radish	0	0	0	0	0	0	1	10	1	0	0	0	0	0	0	10	1
Carrot	0	0	0	0	0	0	1	15	3.75	0	0	0	0	0	0	15	3.75
Sub Total	15	98	22.1	8	185	5.2	22	250	55	12	101	20.75	9	125	20.1	759	123.15
SPICES																	
Chilli	2	7	3.02	0	0	0	1	10	2	1	8	3	0	0	0	25	8.02
Ginger	0	0	0	3	10.46	16	1	5	0.5	2	25	1.5	1	10	0.5	50.46	18.5
Turmeric	0	0	0	0	0	0	0	0	0	1	5	0	0	0	0	5	0
Onion	0	0	0	0	0	0	0	0	0	2	24	2	0	0	0	24	2
Sub Total	2	7	3.02	3	10.46	16	2	15	2.5	6	62	6.5	1	10	0.5	104.46	28.52
FRUITS																	
Khasi Mandarin	1	10	10	3	86	12	2	20	7	2	9	2.5	0	0	0	125	31.5

Kiwi fruit	0	0	0	1	2	0.15	0	0	0	0	0	0	0	0	0	2	0.15
Grape	0	0	0	0	0	0	1	10	5	0	0	0	0	0	0	10	5
Dragon fruit	0	0	0	0	0	0	1	5	1.5	0	0	0	1	5	2.5	10	4
Papaya	0	0	0	0	0	0	1	5	1	0	0	0				5	1
Pineapple	0	0	0	2	26	13	1	1	0.25	1	10	1	1	2	0.5	39	14.75
Peach	0	0	0	1	5	1	0	0	0	0	0	0	0	0	0	5	1
Lemon	1	10	10	0	0	0	0	0	0	0	0	0	0	0	0	10	10
Prunus nepalensis (Sohiong)	0	0	0	1	4	0	0	0	0	0	0	0	0	0	0	4	0
Sub Total	2	20	20	8	123	26.15	6	41	14.75	3	19	3.5	2	7	3	210	67.4
FLORICULTURE																	
Gladiolus	0	0	0	0	0	0	1	10	5	0	0	0	0	0	0	10	5
Anthurium	0	0	0	0	0	0	1	5	0.075	0	0	0	0	0	0	5	0.075
Sub Total	0	0	0	0	0	0	2	15	5.075	0	0	0	0	0	0	15	5.075
MUSHROOM																	
Oyster mushroom	1	10	10 units	0	0	0	0	0	0	2	24	14 units	0	0	0	34	
Sub Total	1	10	10 units	0	0	0	0	0	0	2	24	14 units	0	0	0	34	0
OTHERS																	
Stevia morita	1	5	1	0	0	0	0	0	0	0	0	0	0	0	0	5	1
Green Manuring	0	0	0	0	0	0	0	0	0	1		1	0	0	0	0	1
INM	0	0	0	0	0	0	0	0	0	1	3	0.4	0	0	0	3	0.4
IPM	0	0	0	0	0	0	0	0	0	1	3	1.5	0	0	0	3	1.5
Colocasia	0	0	0	0	0	0	0	0	0	1	4	1	0	0	0	4	1
Nutritional Gardening	0	0	0	0	0	0	0	0	0	1	10	4 units	0	0	0	10	
Sub Total	1	5	1	0	0	0	0	0	0	5	20	3.9	0	0	0	25	4.9
TOTAL	55	630	284	26	492	112.35	43	428	136.13	53	656	105.65	33	1051	255	3257	893.39

Table 15: State wise summary of FLDs on oilseeds, pulses and other crops in 2020

State-wise Summary	Manipur		Meghalaya		Mizoram		Nagaland		Tripura		Total Farmers/ Demo.	Total Area (ha.)
	Farmers/ Demo	Area (ha.)	Farmers / Demo	Area (ha.)	Farmers / Demo	Area (ha.)	Farmers / Demo	Area (ha.)	Farmers/ Demo	Area (ha.)		
Total Oilseeds	133	63	102	36	10	7	106	25	392	112	743	242
Total pulses	122	54	10	4	40	17	102	12	25	8	299	94
Total (other crops)	375	167	380	72	378	113	448	69	634	136	2215	558
Grand Total	630	283.87	492.46	112.35	428	136.13	656	105.65	1051	255.40	3257.46	893.39 28 Units

2.4.4. FLD on Livestock

In the livestock sector, the KVKs conducted 1126 demonstrations in 2020, covering 10003 animals, poultry, and other birds as well as fingerlings. The demonstrations under livestock comprised of Poultry (541), Piggery (186), Goatery (170), Fishery (133), Duckery (36), Dairy (15) and others (45) (**Table 16**). The percentage change in parameters ranged from 109.16 percent in the Duckery for performance parameters like Body weight, Egg production and Egg weight to 14.95 percent in the Goatery for performance parameters like litter size at birth and weaning, individual body weight at birth, body weight at weaning etc.

FLD on Kamrupa breed

Table 16: Frontline Demonstrations on Livestock Enterprise during 2020

Sl. No.	Enterprises	Name of Breed/Species	No. of farmers/ Demons	No. of animals, poultry birds etc.	Performance parameters / indicators	% change in the parameter
1.	Piggery	Rani, CB Hampshire, Large White Yorkshire x Hampshire cross, Local	186	658	Litter size at birth & weaning, individual body wt. at birth, weaning, 20th & 32nd week	70.30
2.	Poultry	CARI-Nirbheek, Kamrupa, Vanaraja, Srinidhi, Gramapriya & White Pekin, Kuroiler, Rainbow Rooster, Japanese quail	541	8310	Egg production, Egg weight, disease resistance, mortality rate	87.62
3.	Goatery	CB Black Bengal & Local	170	82	Litter size at birth & weaning, Individual body wt at birth, body weight at weaning	14.95
4.	Dairy	Cross bred/ Bovine & Local	15	20	General health, Milk Production, Mortality, Av. Daily Milk Yield (Lit/day), average fat (%) & average SNF (%)	21.66

5.	Fishery	Amur Carp and Jayanti Rohu, Grass carp, Common Carp, Catla, Rohu, Mrigal	133	30	Fish Yield, B: C Ratio, Avg. Wt. During Stocking Avg. Wt. During Harvesting, growth performance	71.54
6.	Duckery	Khaki Campbell, White Pekin Duck	36	853	Body weight, Egg production and Egg weight	109.16
7.	Others	Fodder cultivation (Guinea grass var. BG-2), Fodder conversation (hay making), Feed management	45	50	Shelf life Palatability , Occurance of GIR disorder, Yield	41.125
	Total		**1126**	**10003**		**59.48**

Table 17 shows the state wise details of FLDs on Livestock Enterprises undertaken by KVKs in the zone in the year 2020. A perusal of the table depicts that out of 1126 demonstrations, the maximum number of demonstrations (521) were conducted in the state of Nagaland with highest in Poultry sector with a total number of 427 demonstrations followed by Tripura state (220), Meghalaya (131) and Manipur (131).While maximum number of inputs such as animals/ birds/ units *etc.* were supplied among the famers for conducting demonstrations by the KVKs in Nagaland (130 piglets and 6480 poultry birds) followed by Manipur (1489 animals) and Meghalaya (531 animals).

Table17: State-wise Details of FLDs on Livestock Enterprises during 2020

Enterprises	Manipur		Meghalaya		Mizoram		Nagaland		Tripura		Total farmers/ Demo.	Total animals/ units
	No. of farmers/ Demo.	No. of animals/ units	No. of farmers/ Demo.	No. of animals/ units	No. of farmers/ Demo.	No. of animals/ units	No. of farmers/ Demo.	No. of animals/ units	No. of farmers/ Demo.	No. of animals/ units		
Piggery	19	47	15	20	63	61	69	130	20	400	186	658
Poultry	44	960	15	300	25	450	427	6480	30	120	541	8310
Goatery	10	29	0	0	20	40	0	0	140	13	170	82
Dairy	0	0	0	0	10	0	5	20	0	0	15	20
Fishery	24	0	79	0	0	0	0	0	30	30	133	30
Duckery	24	453	12	400	0	0	0	0	0	0	36	853
Others	10	0	10	10	5	0	20	40	0	0	45	50
Total	131	1489, 1257750 fingerlings/ha	131	730	123	551	521	6670	220	563, 18700 slips / demo	1126	10003, 1337350 fingerlings/ha, 223 slips / demo

2.4.5. FLD on Other Enterprises

The KVKs had focused their demonstrations not just on crops and livestock, but also on livelihood improvement initiatives. Considering the growing importance of secondary agriculture in securing a sustainable rural livelihood, the KVKs of the Zone VII have taken a number of initiatives to popularise secondary agricultural ventures such as beekeeping, mushroom cultivation, waste material utilisation, vermicompost production, nutritional gardens etc.In the year 2020, 1117 demonstrations were organized

FLD on Vermicompost production

by KVKs of the region in enterprises such as Farm implements and machinery (69), Mushroom production (Oyster Mushroom) with 55 demonstrations, Promotion of nutritional gardens (30), Impact assessment (288), Value addition and food processing (168), Vermicompost of Eisenia foetida & Eudrillusm eugeniae, Silpauline (108) etc. (**Table 18**).

Table 18: Frontline Demonstrations on Other Enterprises during 2020

Enterprises	Activities	No. of farmers/ Demonstrations	No. of animals, poultry birds etc.	Performance parameters / indicators	% change in the parameter
Farm Implements & Machinery					
Charcoal Briquette	Charcoal & mud	10	0	Energy cost Demo- Rs. 1200/ month/ household Farmer practice- Rs. 2500/ month/ household	48
Treadle pump	Tomato, cucumber chilli,	3	0	Volume of water pumped (l/h) Labour requirement Cost of operation	14.5
Pheromone trap	Pest Management in Cucurbits	3	0.125	0	0
Vegetable transplanter	Tomato var Arka Rakshak	3	0.75	0	0
Low Water Harvesting	Cabbage	5	5 units	332.50 kg	
Energy saving device (revolving milking stand and stool)		5	0		
Health and Sanitation (Sanitary Napkin Destroyer)		1	0		
Rotavator	Rapeseed	3	5	0	0
Maize sheller	Maize	8	8 unit	Shelling capacity	103.19
Paddy Thresher	Paddy	8	10	Broken grains (per cent) Total grain loss (per cent) Threshing capacity kg/h Threshing efficiency (per cent) Labour requirement (man-days/ha) Cost of operation (Rs/ha)	50.75
Serrated sickle	Paddy	10	10	Improved Serrated sickle Area covered (m2/ha):54 Effective field cap (ha/ hr):0.0054 Man-hr req/ha:185 No of labour req/ha:22 Cost of harvesting (Rs/ha):5500	0

Chaff cutter	Fodder	10	0	Effectiveness (Avg.quantity/ hr), Expenditure (/hour basis in Rs), Farmers acceptance	33.33
Total		**69**	**25.88, 13 units**		**49.95**
Value addition and Food processing	Popularization and value addition of horticultural crops	168	15	Acceptability; Marketability: After value addition, Shelf Life	51.37
Mushroom	Oyster Mushroom	55	23	Yield; B:C ratio	22.53
Vermicompost	Vermicomposting	108	98	Yield (kg/unit), Economics(Rs./unit), B:C ratio	66.47
Nutritional Garden	Vegetables	30	0	Yield, Economics(Rs./unit), B:C ratio	71.5
Poly house		5	3	Yield of crop: (Kg/100 m2)	203.3
IFS	Rice –fish farming, Animal cum-fish based	38	1202	Fish Production, Rice yield, B:C Ratio	46.03
Jalkund		6	6	Increase in income- Yield of crop	0
Impact Assessment	Impact Studies	228	2	Technology gap, Extension gap, Extension Index, Socio personal characteristics of the respondents, Adoption rate	61.17
Fisheries					
Others	Post harvest technology, Fodder production, Zero Energy Cool Chamber, Income Generation, Dudgery Reduction, Iron revolving milking stool, etc	470	159.75	Yield, effectiveness of the machineRelevancy of message, Acceptance of message, etc	269.06
Sub total		**1108**	**1508.75**		**98.93**
Total		**1177**	**1534.63**		

The state-wise details of FLDs on other enterprises conducted by KVKs under Zone-VII during 2020 are given in Table 19. The table shows that out of 5 states under the zone, the KVKs in Manipur conducted highest number of FLDs on other enterprises (470) followed by Nagaland, Mizoram, Meghalaya and Tripura with 290, 207, 177 and 33 nos. of demonstrations, respectively.

Table 19: State-wise Details of FLD on Other Enterprises during 2020

Enterprises	No. of farmers/Demonstrations					Total Farmers/ Demonstrations (No.)
	Manipur	Meghalaya	Mizoram	Nagaland	Tripura	
Farm implements and machinery	22	13	0	25	9	69
Value addition and Food processing	40	0	20	97	11	168
Mushroom	14	38	0	0	3	55
Vermicompost	5	23	15	65	0	108
Apiculture	0	0	0	0	0	0
Nutritional Garden	10	20		0	0	30
Poly house	0	0	5	0	0	5
IFS	20	18	0	0	0	38
Jalkund	0	6	0	0	0	6
Impact Assessment	40	45	50	93	0	228
Fisheries	0	0	0	0	0	0
Others	319	14	117	10	10	470
Total	**470**	**177**	**207**	**290**	**33**	**1177**

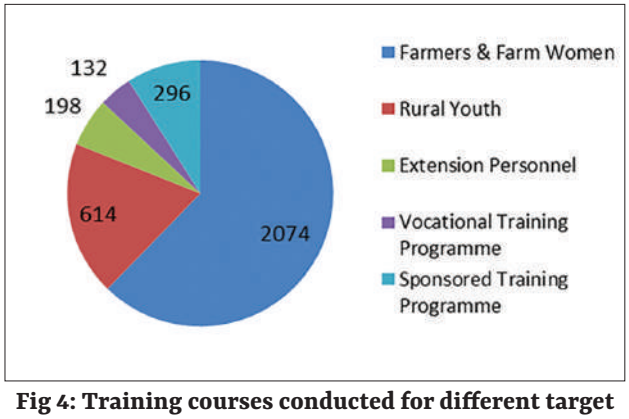

Fig 4: Training courses conducted for different target groups in the region

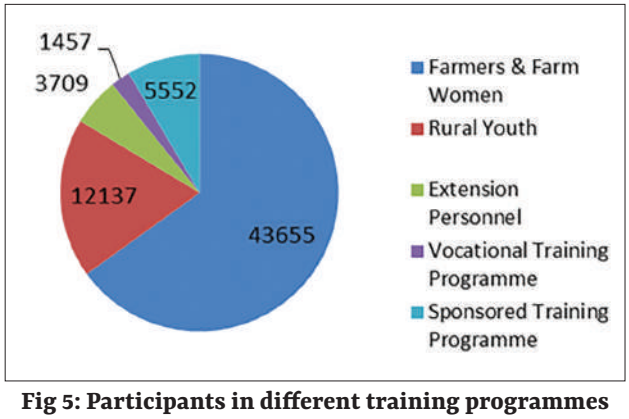

Fig 5: Participants in different training programmes organized by KVKs

2.5. Training Programmes

The KVKs organised a number of training programmes to provide farmers, farm women, and rural youth with up-to-date knowledge and skills in improved agricultural and allied activities as well as to keep extension functionaries abreast of recent technological breakthroughs, government schemes and to improve their managerial skills to effectively deal with the farming community. The duration of the training sessions varied based on the amount of knowledge and skill that required to be transferred to the intended beneficiaries as well as budget provision for the same. The programmes encompassed a number of thematic areas covering

almost all the enclaves of rural livelihood options. During the year 2020, as indicated in the **Table 20**, a total of 3314training programmes were conducted by the KVKs in different areas of agriculture and allied activities benefitting 66510 farmers and farm women, rural youth, in-service extension personnel, civic bodies, NGOs, entrepreneurs etc.

Sponsored Training Programme by KVK South Garo Hills

The highest numbers of training programmes (620) were conducted for farmers and farm women that could benefit 17980 representing 12017 farmers and farm women from the state of Meghalaya followed by Mizoram (15245) and Nagaland (13751). A total of 614 training programmes were conducted for rural youth by the KVKs under the Zone VII. Meghalaya state (235) conducted the highest trainings for rural youth followed by Manipur (122), Mizoram (86), Nagaland (92) and Tripura (79) and benefitted 12137 rural youth across the five North-eastern states. While, 198 training programmes were conducted by the KVKs under the zone for the benefit of 12137 extension personnel. The table also shows that a total of 132 Vocational and 296 Sponsored training programmes were conducted during 2020 benefitting 1457 and 5552 of different target groups including unemployed rural youth, NGOs members, SHGs etc.

Table 20: State-Wise Summary for Training Programmes during 2020

Training	Courses (No.)						Participants (No.)					
	Man	Meg	Miz	Nag	Tri	Total	Man	Meg	Miz	Nag	Tri	Total
Farmers & Farm Women	321	620	324	606	203	**2074**	6808	12017	9762	10118	4950	**43655**
Rural Youth	122	235	86	92	79	**614**	2234	3626	2435	1543	2299	**12137**
Extension Personnel	49	44	41	31	33	**198**	715	526	1051	681	736	**3709**
Vocational Training Programme	28	35	18	38	13	**132**	277	440	266	218	256	**1457**
Sponsored Training Programme	52	69	85	61	29	**296**	1014	1371	1731	1191	245	**5552**
Total	**572**	**1003**	**554**	**828**	**357**	**3314**	**11048**	**17980**	**15245**	**13751**	**8486**	**66510**

**Note: Man-Manipur, Meg-Meghalaya, Miz-Mizoram, Nag-Nagaland, Tri-Tripura*

2.5.1. Training programmes for Rural Youth

During 2020, the KVKs of ICAR-ATARI Zone VII, organized training courses for rural youth and total 614 training courses were conducted which benefitted 12137 rural youth on various agricultural technologies. Among the participants, 6227 were female representing 51.31 percent this indicates the interest of rural young women in agriculture activities in the region. The thrust areas under which these programmes had been conducted includes Productivity enhancement of crop production (80), Horticultural crops (64), value addition (63), mushroom production (51) and poultry production (48) etc. (**Table 21**).

Training on Mushroom Production

Table 21: Details of training programmes conducted for Rural Youth in 2020

Area of trainings	Courses (No.)	Participants (No.)								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop Production	80	195	45	240	713	668	1381	908	713	1621
Horticulture	64	50	29	79	578	634	1212	628	663	1291
Mushroom Production	51	86	102	188	334	568	902	420	670	1090
Beekeeping	21	82	32	114	421	109	530	503	141	644
Fisheries	36	170	50	220	272	241	513	442	291	733
Post Harvest Technology	13	0	20	20	59	241	300	59	261	320
Small scale processing	4	0	0	0	3	76	79	3	76	79
Value addition	63	13	70	83	292	806	1098	305	876	1181
Home Science/Women Empowerment	10	0	0	0	70	158	228	70	158	228
Integrated farming	41	106	20	126	327	293	620	433	313	746
Vermiculture	27	10	2	12	296	276	572	306	278	584
Sericulture	3	8	2	10	5	0	5	13	2	15
Agril Engineering	3	0	0	0	42	36	78	42	36	78
Dairying	9	32	9	41	91	72	163	123	81	204
Piggery	25	28	29	57	208	229	437	236	258	494
Poultry production	48	101	38	139	276	355	631	377	393	770
Rabbit farming	3	0	0	0	41	24	65	41	24	65
Sheep and goat rearing	4	13	5	18	38	28	66	51	33	84
Quail farming	0	0	0	0	0	0	0	0	0	0
Production of quality animal products	1	0	0	0	4	10	14	4	10	14
Other	108	94	36	130	852	914	1766	946	950	1896
Total	**614**	**988**	**489**	**1477**	**4922**	**5738**	**10660**	**5910**	**6227**	**12137**

2.5.2. Training programmes for Farmers and Farm Women

During 2020 as many as 2074 skill oriented training programmes were organized by the KVKs for 43655 farmers and farm women, which included 20406 male and 23249 female participants. Livestock Production and Management is one of the major thematic areas of the training programmes, with 399 courses benefiting 5729 participants, 93 courses in different horticultural technologies benefiting 8944 participants, 171 courses of Soil Health and Fertility Management/ INM including vermicomposting benefiting 4058 participants, 152 courses of Home Science/Women empowerment, Plant Protection (180) and 155 courses on fisheries benefiting 3463, 4088, and 304 participants, respectively. A summary of training programmes organized for the farmers and farm women in the region during the reporting period has been produced in **Table 22**.

Training of Farmers and Farm Women

Table 22: Details of training programmes conducted for Farmers and Farm Women during 2020

Area of trainings	Courses (No.)	Participants (No.)								Overall Total
		General			SC/ST			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop Production	330	343	122	465	3335	3314	6649	3678	3436	7114
Horticulture										
a) Vegetable Crops	215	154	112	266	2046	2505	4551	2200	2617	4817
b) Fruits	94	69	22	91	1105	911	2016	1174	933	2107
c) Ornamental Plants	18	4	6	10	152	246	398	156	252	408
d) Plantation crops	13	29	10	39	111	155	266	140	165	305
e) Tuber crops	24	35	18	53	247	274	521	282	292	574
f) Spices	26	0	0	0	185	344	529	185	344	529
g) Medicinal and Aromatic Plants	9	6	13	19	71	114	185	77	127	204
Soil Health and Fertility Management	171	367	91	458	1705	1895	3600	2072	1986	4058
Livestock Production and Management	272	323	180	503	2264	2962	5226	2587	3142	5729
Home Science/Women empowerment	152	75	196	271	647	2545	3192	722	2741	3463
Agril. Engineering	45	47	66	113	475	525	1000	522	591	1113
Plant Protection	180	429	197	626	1660	1802	3462	2089	1999	4088
Fisheries	155	368	117	485	1485	1072	2557	1853	1189	3042
Production of Input at site	43	66	34	100	415	495	910	481	529	1010
Capacity Building and Group Dynamics	96	158	34	192	1057	1608	2665	1215	1642	2857
Agro-forestry	231	180	180	360	793	1084	1877	973	1264	2237
Total	**2074**	**2653**	**1398**	**4051**	**17753**	**21851**	**39604**	**20406**	**23249**	**43655**

2.5.3. Training programmes for Extension Personnel

During the year 2020 different training programmes for the extension personnel in the zone were organized to upgrade their knowledge and skills in the frontier areas of agricultural technology development. A total 198 courses benefiting 3709 in-service extension personnel had been arranged in the region during the period under report (**Table 23**). During the year, the KVKs conducted 33 horticulture courses, benefiting 657 extension workers and 22 crop production courses, benefiting 411 extension personnel. Under livestock and production management 27 training courses were organized for 500 extension staff to upgrade recent technologies related to livestock. The other important thrust areas covered were Housing management (20 courses, 333 participants), soil health and fertility management/ INM (11 courses, 280 participants), home science/women empowerment (11 courses, 241 participants), capacity building and group dynamics (10 Courses, 187 participants) and others (51 Course, 830 participants).

Training of Extension Personnel

Table 23: Details of training programmes conducted for Extension Personnel during 2020

Area of trainings	Courses (No.)	Participants (No.)								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop Production	22	49	14	63	188	160	348	237	174	411
Plant Protection	12	32	5	37	135	79	214	167	84	251
Soil Health Management	11	15	0	15	104	161	265	119	161	280
Horticulture	33	70	28	98	289	270	559	359	298	657
Agril Engineering	1	10	9	19	0	0	0	10	9	19
Home Science/Women Empowerment	11	0	30	30	0	211	211	0	241	241
Capacity building & Group Dynamics	10	62	0	62	73	52	125	135	52	187
Livestock and Production Management	27	75	15	90	241	169	410	316	184	500
Housing Management	20	33	10	43	98	192	290	131	202	333
Others	51	39	26	65	416	349	765	455	375	830
Total	**198**	**385**	**137**	**522**	**1544**	**1643**	**3187**	**1929**	**1780**	**3709**

2.5.4. Sponsored training programmes

During the year, the KVKs in the zone held 296 training courses, which were sponsored by various agencies/organizations and benefited 5552 participants. There were 2986 men and 2566 women among the total number of participants **(Table 24).** The participants in the sponsored training programmes comprised of farmers, farm women, rural youth, in-service extension personnel and members of different NGOs and civic bodies. The training programmes were organized to upgrade their knowledge and skills in major areas, including crop production(10 courses, 86 participants), horticulture (59 courses, 973 participants), livestock and fisheries (51 courses, 1191 participants), soil health and fertility management(14 Courses, 293 participants), post harvest technology and value addition (19 courses, 390 participants) etc.

Table 24: Details of Sponsored training programmes conducted by KVKs during 2020

Area of trainings	Courses (No.)	Participants (No.)								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop production and management										
Increasing production and productivity of crops	10	37	7	44	27	15	42	64	22	86
Commercial production of vegetables	30	8	2	10	240	240	480	248	242	490
Production and value addition	0	0	0	0	0	0	0	0	0	0
Fruit plants	15	0	0	0	167	72	239	167	72	239
Ornamental plants	14	0	0	0	182	62	244	182	62	244
Spices crops	0	0	0	0	0	0	0	0	0	0

Soil health and fertility management	14	16	3	19	151	123	274	167	126	293
Production of inputs at site	14	0	0	0	64	146	210	64	146	210
Methods of protective cultivation	10	0	0	0	163	74	237	163	74	237
Post harvest technology and value addition	19	0	0	0	103	287	390	103	287	390
Livestock and fisheries	51	151	35	186	600	405	1005	751	440	1191
Home science	24	8	1	9	34	168	202	42	169	211
Agricultural extension	3	0	0	0	4	37	41	4	37	41
Others	92	39	6	45	992	883	1875	1031	889	1920
Total	**296**	**259**	**54**	**313**	**2727**	**2512**	**5239**	**2986**	**2566**	**5552**

2.5.5. Vocational training programmes

During the year 2020, the KVKs in the region organized 132 vocational training courses, benefiting 1457 participants in the zone. 703 males and 754 females were among the total number of participants (**Table 25**). Farmers, farm women, and rural adolescents covered the majority of the participants in the vocational training programmes. The training programmes were designed to improve their knowledge and skills in key areas such as crop production and management (8 courses, 109 participants), horticulture (40 courses, 227 participants) and income generation activities (38 courses, 369 participants).

Table 25: Details of Vocational training programmes conducted by KVKs during 2020

Area of trainings	Courses (No.)	Participants (No.)								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop production and management	8	3	0	3	71	35	106	74	35	109
Horticulture										
Floriculture	1	0	0	0	11	4	15	11	4	15
Fruit production	12	0	0	0	28	17	45	28	17	45
Vegetable production	5	0	0	0	41	51	92	41	51	92
Post harvest technology and value addition	22	6	15	21	87	160	247	93	175	268
Livestock and fisheries										
Dairy farming	0	0	0	0	0	0	0	0	0	0
Composite fish culture	4	0	0	0	48	25	73	48	25	73
Sheep and goat rearing	1	0	0	0	10	6	16	10	6	16
Piggery	4	0	0	0	18	2	20	18	2	20
Poultry farming	11	0	0	0	41	52	93	41	52	93

Income generation activities										
Vermicomposting	11	15	0	15	32	40	72	47	40	87
Repair and maintenance of farm machinery &implements	6	0	0	0	17	8	25	17	8	25
Rural crafts	8	0	0	0	0	25	25	0	25	25
Seed production	1	0	0	0	15	10	25	15	10	25
Sericulture	0	0	0	0	0	0	0	0	0	0
Mushroom cultivation	9	5	2	7	43	82	125	48	84	132
Nursery, grafting etc.	2	0	0	0	15	30	45	15	30	45
Agril. para workers, para0vet training	1	0	0	0	16	14	30	16	14	30
Other	26	32	10	42	149	166	315	181	176	357
Total	**132**	**61**	**27**	**88**	**642**	**727**	**1369**	**703**	**754**	**1457**

2.6. Extension Activities

KVKs in the zone engaged in a number of extension programmes and activities in 2020. The KVKs utilised modern technological advancements such as ICT in addition to traditional media of technology dissemination to reach out to the unreached. A vast stretch of the region being extreme remote to access, technology dissemination is a huge challenge. In this particular context, the efforts put by the KVKs during 2020 to disseminate the improved farming technologies by exploiting over thirty types of possible extension approaches suitable for North Eastern region, is noteworthy.

Farmers-Scientist Interaction

The KVKs in the region organised 28270 extension programs/activities, reaching out to around 213521 farmers and other targeted beneficiaries in the region, including farm women, rural youth, civil society groups and school children on various aspects of agri-business potential. Field tours and visits, group activities, mass outreach programmes, camps and campaigns and publications were the five major groups of extension activities conducted by the KVKs. The highest activities (11216) were undertaken as part of group field trips and visits, while the most beneficiaries (1055323) were addressed through various mass outreach programmes like Kisanmela, Exhibition, Field Day etc. A detail of the extension activities including number of beneficiaries is given in **Table 26**.

Table 26: Details of Extension Activities organized by KVKs during 2020

Categories	Extension Activities	Activities (No.)	Participants (No.)								
			General			SC/ST			Grand Total		
			-1			-2			(1+2)		
			Male	Female	Total	Male	Female	Total	Male	Female	Total
Field Trips and Visits	Diagnostic visits	2699	595	363	958	3672	3116	6788	4267	3479	7746
	Scientists visit to farmers field	3594	1440	832	2272	5252	4982	10234	6692	5814	12506
	Exposure visits	57	192	113	305	611	554	1165	803	667	1470
	Farmers Visit to KVK	4866	2062	917	2979	3421	2072	5493	5483	2989	8472
	Total	**11216**	**4289**	**2225**	**6514**	**12956**	**10724**	**23680**	**17245**	**12949**	**30194**
Group activities	Farmers Scientist Interaction	259	232	157	389	4141	4089	8230	4373	4246	8619
	Group Discussion	700	964	603	1567	5703	4979	10682	6667	5582	12249
	Group Meeting	22	0	0	0	33	109	142	33	109	142
	KisanGosthi	36	118	65	183	485	567	1052	603	632	1235
	Mahila Mandal Conveners' meetings	18	0	100	100	47	309	356	47	409	456
	Self Help Group Conveners meetings	14	32	81	113	11	109	120	43	190	233
	Method Demonstrations	804	943	610	1553	4952	4165	9117	5895	4775	10670
	Farm Science Club Conveners meet	16	43	28	71	170	125	295	213	153	366
	Lecture Delivered as resource person	329	803	669	1472	3917	3690	7607	4720	4359	9079
	Ex-trainees Sammelen	16	95	103	198	149	178	327	244	281	525
	Total	**2214**	**3230**	**2416**	**5646**	**19608**	**18320**	**37928**	**22838**	**20736**	**43574**
Mass outreach programmes	Advisory Services	10384	3456	1808	5264	27903	19673	47576	31359	21481	52840
	Kisan Mela	18	139	52	191	1762	1778	3540	1901	1830	3731
	Exhibition	39	173	312	485	7384	6257	13641	7557	6569	14126
	Farmers Seminar/ workshop	66	448	210	658	623	490	1113	1071	700	1771
	Field Day	192	624	220	844	2076	1847	3923	2700	2067	4767
	PRA	17	100	74	174	366	295	661	466	369	835
	Celebration of important days	284	1008	905	1913	7027	6242	13269	8035	7147	15182
	TV Talks	66	0	0	0	1013	1017	2030	1013	1017	2030
	Radio talks	138	0	0	0	1000	1000	2000	1000	1000	2000
	Film shows	223	443	366	809	3238	2794	6032	3681	3160	6841
	News paper coverage	426	0	0	0	720	680	1400	720	680	1400
	Total	**11853**	**6391**	**3947**	**10338**	**53112**	**42073**	**95185**	**59503**	**46020**	**105523**

Camps and Campaigns	Plant/Animal Health Camp	111	739	340	1079	1851	1651	3502	2590	1991	4581
	Awareness Camp (Kharif & Rabi)	186	1822	787	2609	3500	2809	6309	5322	3596	8918
	Soil testing Campaigns	40	194	122	316	453	186	639	647	308	955
	Soil health camp	165	732	138	870	504	780	1284	1236	918	2154
	Vaccination camp	8	0	0	0	146	130	276	146	130	276
	Total	**510**	**3487**	**1387**	**4874**	**6454**	**5556**	**12010**	**9941**	**6943**	**16884**
Publications	Training/ practical manual	82	68	54	122	1412	498	1910	1480	552	2032
	Extension literature	219	0	0	0	3648	2430	6078	3648	2430	6078
	Research Papers	11	0	0	0	0	0	0	0	0	0
	Popular articles	270	0	0	0	0	0	0	0	0	0
	Electronic media (CD/DVD)	49	0	0	0	32	43	75	32	43	75
	Technology showcasing	11	165	129	294	73	56	129	238	185	423
	Leaflets/folders	30	0	0	0	650	650	1300	650	650	1300
	News letter	7	0	0	0	270	235	505	270	235	505
	KMAS	199	0	0	0	400	400	800	400	400	800
	Others	1599	349	324	673	2812	2648	5460	3161	2972	6133
	Total	**2477**	**582**	**507**	**1089**	**9297**	**6960**	**16257**	**9879**	**7467**	**17346**
Grand Total		**28270**	**17979**	**10482**	**28461**	**101427**	**83633**	**185060**	**119406**	**94115**	**213521**

The state-wise details of extension programmes and activities conducted by KVKs under Zone-VII during 2020 are presented in **Table 27.**The highest extension activities were conducted in Mizoram (8029) followed by Manipur (7983), Meghalaya (5470), Tripura (3646) and Nagaland (3142).

Table 27:State-wise Extension Activities organized by KVKs during 2020

Sl No	Name of the State	Extension Activities	Activities (No.)	Participants (No.)											
				General -1			SC/ST -2			Extension Officials -3			Grand Total (1+2)		
				Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
1	Manipur	Advisory services	3408	1821	1160	2981	14024	5993	20017	80	20	100	15845	7153	22998
2	Manipur	Diagnostic visits	551	314	223	537	545	258	803	25	45	70	859	481	1340
3	Manipur	Field day	22	353	95	448	276	143	419	111	45	156	629	238	867
4	Manipur	Group Discussion	99	467	364	831	623	469	1092	85	155	240	1090	833	1923
5	Manipur	Exhibition	11	88	115	203	686	338	1024	28	83	111	774	453	1227
6	Manipur	Scientists visit to farmers fields	1145	771	574	1345	1002	607	1609	40	140	180	1773	1181	2954
7	Manipur	Farmers visit to KVK	1632	1267	446	1713	419	174	593	0	0	0	1686	620	2306

8	Manipur	Kishan Gosthi	5	93	52	145	108	67	175	32	49	81	201	119	320
9	Manipur	Kishan Mela	7	68	34	102	263	227	490	46	69	115	331	261	592
10	Manipur	Plant/ Animal Health camp	17	388	245	633	227	211	438	0	0	0	615	456	1071
11	Manipur	Farm science club	7	32	22	54	51	30	81	3	12	15	83	52	135
12	Manipur	Farmers semi-nar/ workshop	6	72	64	136	152	40	192	29	59	88	224	104	328
13	Manipur	Method demonstration	176	414	275	689	543	399	942	16	45	61	957	674	1631
14	Manipur	Celebration of important days	58	521	660	1181	1789	947	2736	430	1000	1430	2310	1607	3917
15	Manipur	Exposure visits	12	56	53	109	116	105	221	12	23	35	172	158	330
16	Manipur	Extension literature	14	0	0	0	0	0	0	0	0	0	0	0	0
17	Manipur	Leaflets/folders	15	0	0	0	0	0	0	0	0	0	0	0	0
18	Manipur	Newspaper coverage	110	0	0	0	0	0	0	0	0	0	0	0	0
19	Manipur	Radio talk	23	0	0	0	0	0	0	0	0	0	0	0	0
20	Manipur	Popular articles	136	0	0	0	0	0	0	0	0	0	0	0	0
21	Manipur	Training manual	2	33	14	47	7	1	8	0	0	0	40	15	55
22	Manipur	Electronic media (CD/DVD)	14	0	0	0	32	43	75	0	0	0	32	43	75
23	Manipur	Awareness camp	54	376	258	634	429	354	783	20	14	34	805	612	1417
24	Manipur	Lecture delivered as resource person	120	532	401	933	930	770	1700	42	25	67	1462	1171	2633
25	Manipur	Farmer Scientist Interaction	30	163	133	296	482	335	817	75	52	127	645	468	1113
26	Manipur	Ex-trainee Sammelan	5	87	101	188	45	71	116	0	0	0	132	172	304
27	Manipur	PRA	7	51	41	92	48	48	96	0	0	0	99	89	188
28	Manipur	Soil test campaign	22	103	49	152	228	71	299	2	3	5	331	120	451
29	Manipur	Soil health camp	143	565	51	616	70	25	95	5	3	8	635	76	711
30	Manipur	Film show	20	118	117	235	283	169	452	23	70	93	401	286	687
31	Manipur	TV Talks	52	0	0	0	0	0	0	0	0	0	0	0	0
32	Manipur	Vaccination camp	1	0	0	0	0	0	0	0	0	0	0	0	0
33	Manipur	Technology showcasing	9	165	129	294	58	39	97	0	0	0	223	168	391
34	Manipur	Research papers	7	0	0	0	0	0	0	0	0	0	0	0	0
35	Manipur	SHG formation	12	32	81	113	11	79	90	6	45	51	43	160	203
36	Manipur	Mahila Mandal Convener meet	9	0	100	100	47	210	257	19	59	78	47	310	357
37	Manipur	Others	22	148	159	307	44	107	151	0	0	0	192	266	458
	Total		**7983**	**9098**	**6016**	**15114**	**23538**	**12330**	**35868**	**1129**	**2016**	**3145**	**32636**	**18346**	**50982**

38	Meghalaya	Advisory services	1881	10	5	15	6157	9054	15211	4	4	8	6167	9059	15226
39	Meghalaya	Diagnostic visit	485	5	0	5	1210	1672	2882	5	4	9	1215	1672	2887
40	Meghalaya	Field day	53	25	10	35	403	562	965	4	4	8	428	572	1000
41	Meghalaya	Group Discussion	208	15	5	20	1476	2299	3775	14	6	20	1491	2304	3795
42	Meghalaya	Group meeting	12	0	0	0	13	9	22	0	0	0	13	9	22
43	Meghalaya	Exhibition	6	0	0	0	193	327	520	0	0	0	193	327	520
44	Meghalaya	Scientists visit to farmers fields	733	20	10	30	1591	1890	3481	4	4	8	1611	1900	3511
45	Meghalaya	Farmers visit to KVK	55	60	40	100	446	396	842	0	0	0	506	436	942
46	Meghalaya	Kishan Gosthi	21	0	0	0	275	373	648	4	4	8	275	373	648
47	Meghalaya	Kishan Mela	5	0	0	0	85	103	188	0	2	2	85	103	188
48	Meghalaya	Plant/ Animal Health camp	18	0	0	0	218	288	506	8	8	16	218	288	506
49	Meghalaya	Farmers semi-nar/ workshop	45	0	0	0	186	256	442	4	4	8	186	256	442
50	Meghalaya	Method demonstration	201	15	0	15	1219	1615	2834	4	4	8	1234	1615	2849
51	Meghalaya	Celebration of important days	63	0	0	0	1714	2222	3936	16	16	32	1714	2222	3936
52	Meghalaya	Exposure visits	24	0	0	0	148	218	366	0	0	0	148	218	366
53	Meghalaya	Extension literature	41	0	0	0	305	435	740	0	0	0	305	435	740
54	Meghalaya	Leaflets/folders	3	0	0	0	500	500	1000	0	0	0	500	500	1000
55	Meghalaya	Newspaper coverage	23	0	0	0	500	500	1000	0	0	0	500	500	1000
56	Meghalaya	News letter	1	0	0	0	50	50	100	0	0	0	50	50	100
57	Meghalaya	Radio talk	15	0	0	0	1000	1000	2000	0	0	0	1000	1000	2000
58	Meghalaya	Popular article	2	0	0	0	0	0	0	0	0	0	0	0	0
59	Meghalaya	Training manual	35	0	0	0	315	310	625	0	0	0	315	310	625
60	Meghalaya	Electronic media (CD/DVD)	1	0	0	0	0	0	0	0	0	0	0	0	0
61	Meghalaya	Awareness camp	33	0	0	0	624	725	1349	0	0	0	624	725	1349
62	Meghalaya	Lecture delivered as resource person	87	0	0	0	1077	1374	2451	4	4	8	1077	1374	2451
63	Meghalaya	Farmer-Scientist interaction	89	0	0	0	957	1909	2866	0	0	0	957	1909	2866
64	Meghalaya	Ex-trainee Sammelan	4	0	0	0	80	100	180	0	0	0	80	100	180
65	Meghalaya	Soil test campaign	1	0	0	0	20	14	34	0	0	0	20	14	34
66	Meghalaya	Soil health camp	6	0	0	0	78	575	653	4	4	8	78	575	653
67	Meghalaya	Film show	66	0	0	0	1441	1196	2637	4	4	8	1441	1196	2637
68	Meghalaya	TV talk	3	0	0	0	1000	1000	2000	0	0	0	1000	1000	2000
69	Meghalaya	Research Paper	1	0	0	0	0	0	0	0	0	0	0	0	0

70	Meghalaya	KMAS	100	0	0	0	250	350	600	0	0	0	250	350	600
71	Meghalaya	Other	1149	0	0	0	1498	1425	2923	32	32	64	1498	1425	2923
	Total		**5470**	**150**	**70**	**220**	**25029**	**32747**	**57776**	**111**	**104**	**215**	**25179**	**32817**	**57996**
72	Mizoram	Advisory services	2882	23	0	23	3170	2126	5296	0	0	0	3193	2126	5319
73	Mizoram	Diagnostic visit	1146	15	15	30	1028	471	1499	0	0	0	1043	486	1529
74	Mizoram	Field day	49	0	0	0	815	473	1288	2	0	2	815	473	1288
75	Mizoram	Group Discussion	228	0	0	0	2796	1344	4140	0	0	0	2796	1344	4140
76	Mizoram	Exhibition	7	0	0	0	2621	2227	4848	23	6	29	2621	2227	4848
77	Mizoram	Scientists visit to farmers fields	714	0	0	0	906	602	1508	0	0	0	906	602	1508
78	Mizoram	Farmers visit to KVK	1930	0	0	0	1345	856	2201	0	0	0	1345	856	2201
79	Mizoram	Kishan Gosthi	3	0	0	0	44	16	60	0	0	0	44	16	60
80	Mizoram	Kishan Mela	2	0	0	0	1286	1359	2645	19	8	27	1286	1359	2645
81	Mizoram	Plant/ Animal Health camp	21	0	0	0	810	718	1528	0	0	0	810	718	1528
82	Mizoram	Farm science club	5	0	0	0	79	80	159	0	0	0	79	80	159
83	Mizoram	Farmers semi-nar/ workshop	1	0	0	0	112	85	197	0	0	0	112	85	197
84	Mizoram	Method demonstration	176	0	0	0	1263	720	1983	0	0	0	1263	720	1983
85	Mizoram	Celebration of important days	55	0	0	0	1466	820	2286	0	0	0	1466	820	2286
86	Mizoram	Exposure visits	3	0	0	0	69	43	112	0	0	0	69	43	112
87	Mizoram	Extension literature	121	0	0	0	3283	1995	5278	0	0	0	3283	1995	5278
88	Mizoram	Leaflets/folders	5	0	0	0	150	150	300	0	0	0	150	150	300
89	Mizoram	Newspaper coverage	90	0	0	0	220	180	400	0	0	0	220	180	400
90	Mizoram	News letter	6	0	0	0	220	185	405	0	0	0	220	185	405
91	Mizoram	Radio talk	6	0	0	0	0	0	0	0	0	0	0	0	0
92	Mizoram	Popular article	123	0	0	0	0	0	0	0	0	0	0	0	0
93	Mizoram	Training manual	34	0	0	0	1065	157	1222	0	0	0	1065	157	1222
94	Mizoram	Electronic media (CD/DVD)	7	0	0	0	0	0	0	0	0	0	0	0	0
95	Mizoram	Awareness camp	34	0	0	0	497	387	884	0	0	0	497	387	884
96	Mizoram	Lecture delivered as resource person	41	0	0	0	1047	613	1660	0	0	0	1047	613	1660
97	Mizoram	Farmer-Scientist interaction	56	0	0	0	1299	703	2002	8	2	10	1299	703	2002
98	Mizoram	PRA	3	0	0	0	216	209	425	0	0	0	216	209	425
99	Mizoram	Soil test campaign	9	0	0	0	151	60	211	0	0	0	151	60	211
100	Mizoram	Soil health camp	5	0	0	0	71	54	125	0	0	0	71	54	125

101	Mizoram	Film show	36	0	0	0	629	498	1127	0	0	0	629	498	1127
102	Mizoram	TV talk	10	0	0	0	13	17	30	0	0	0	13	17	30
103	Mizoram	Vaccination camp	3	0	0	0	134	121	255	0	0	0	134	121	255
104	Mizoram	Training manual	6	0	0	0	0	0	0	0	0	0	0	0	0
105	Mizoram	SHG formation	2	0	0	0	0	30	30	0	0	0	0	30	30
106	Mizoram	MahilaMandal Convener meet	6	0	0	0	0	32	32	0	0	0	0	32	32
107	Mizoram	Other	204	0	0	0	277	347	624	0	0	0	277	347	624
	Total		**8029**	**38**	**15**	**53**	**27082**	**17678**	**44760**	**52**	**16**	**68**	**27120**	**17693**	**44813**
108	Nagaland	Advisory services	704	0	0	0	3186	1893	5079	149	14	163	3186	1893	5079
109	Nagaland	Diagnostic visit	297	0	0	0	505	531	1036	75	6	81	505	531	1036
110	Nagaland	Field day	49	0	0	0	436	601	1037	0	0	0	436	601	1037
111	Nagaland	Group Discussion	86	0	0	0	468	714	1182	98	0	98	468	714	1182
112	Nagaland	Group meeting	10	0	0	0	20	100	120	0	0	0	20	100	120
113	Nagaland	Exhibition	7	0	0	0	933	849	1782	241	0	241	933	849	1782
114	Nagaland	Scientist visit to farmer`s field	638	0	0	0	965	1359	2324	235	17	252	965	1359	2324
115	Nagaland	Farmers visit to KVK	324	0	0	0	522	473	995	10	15	25	522	473	995
116	Nagaland	Kishan Gosthi	5	0	0	0	24	86	110	18	0	18	24	86	110
117	Nagaland	Kishan Mela	2	0	0	0	18	25	43	0	0	0	18	25	43
118	Nagaland	Plant/ Animal Health camp	46	0	0	0	428	369	797	0	0	0	428	369	797
119	Nagaland	Farm science club	2	0	0	0	10	10	20	0	0	0	10	10	20
120	Nagaland	Method demonstration	172	0	0	0	1437	1145	2582	117	6	123	1437	1145	2582
121	Nagaland	Celebration of important days	72	0	0	0	1193	1814	3007	241	0	241	1193	1814	3007
122	Nagaland	Exposure visits	6	0	0	0	66	53	119	0	0	0	66	53	119
123	Nagaland	Extension literature	20	0	0	0	60	0	60	0	0	0	60	0	60
124	Nagaland	Newspaper coverage	108	0	0	0	0	0	0	0	0	0	0	0	0
125	Nagaland	Radio talk	76	0	0	0	0	0	0	0	0	0	0	0	0
126	Nagaland	Popular article	3	0	0	0	0	0	0	0	0	0	0	0	0
127	Nagaland	Training manual	5	0	0	0	0	0	0	0	0	0	0	0	0
128	Nagaland	Electronic media (CD/DVD)	3	0	0	0	0	0	0	0	0	0	0	0	0
129	Nagaland	Awareness camp	27	0	0	0	250	392	642	306	0	306	250	392	642
130	Nagaland	Lecture delivered as resource person	44	0	0	0	394	600	994	866	0	866	394	600	994
131	Nagaland	Farmer-Scientist interaction	72	0	0	0	882	801	1683	102	0	102	882	801	1683

132	Nagaland	PRA	2	0	0	0	19	10	29	0	0	0	19	10	29
133	Nagaland	Soil health camp	5	0	0	0	68	71	139	26	0	26	68	71	139
134	Nagaland	Film show	55	0	0	0	631	758	1389	215	5	220	631	758	1389
135	Nagaland	TV talk	1	0	0	0	0	0	0	0	0	0	0	0	0
136	Nagaland	Vaccination camp	4	0	0	0	12	9	21	0	0	0	12	9	21
137	Nagaland	Research paper	3	0	0	0	0	0	0	0	0	0	0	0	0
138	Nagaland	KMAS	99	0	0	0	150	50	200	0	0	0	150	50	200
139	Nagaland	Technology showcasing	2	0	0	0	15	17	32	0	0	0	15	17	32
140	Nagaland	Mahila Mandal Convener meet	2	0	0	0	0	27	27	0	0	0	0	27	27
141	Nagaland	Other	191	1	0	1	730	668	1398	61	0	61	731	668	1399
		Total	**3142**	**1**	**0**	**1**	**13422**	**13425**	**26847**	**2760**	**63**	**2823**	**13423**	**13425**	**26848**
142	Tripura	Advisory services	1509	1602	643	2245	1366	607	1973	20	10	30	2968	1250	4218
143	Tripura	Diagnostic visits	220	261	125	386	384	184	568	0	0	0	645	309	954
144	Tripura	Field Day	19	246	115	361	146	68	214	0	0	0	392	183	575
145	Tripura	Group Discussion	79	482	234	716	340	153	493	0	0	0	822	387	1209
146	Tripura	Exhibition	8	85	197	282	2951	2516	5467	0	0	0	3036	2713	5749
147	Tripura	Scientists visit to farmers fields	364	649	248	897	788	524	1312	0	0	0	1437	772	2209
148	Tripura	Farmers Visit to KVK	925	735	431	1166	689	173	862	0	0	0	1424	604	2028
149	Tripura	Kishan Gosthi	2	25	13	38	34	25	59	0	0	0	59	38	97
150	Tripura	Kishan Mela	2	71	18	89	110	64	174	0	0	0	181	82	263
151	Tripura	Plant/ Animal Health camp	9	351	95	446	168	65	233	0	0	0	519	160	679
152	Tripura	Farm science club	2	11	6	17	30	5	35	0	0	0	41	11	52
153	Tripura	Farmers semi-nar/ workshop	14	376	146	522	173	109	282	0	0	0	549	255	804
154	Tripura	Method Demonstrations	79	514	335	849	490	286	776	0	0	0	1004	621	1625
155	Tripura	Celebration of important days	36	487	245	732	865	439	1304	0	0	0	1352	684	2036
156	Tripura	Exposure visits	12	136	60	196	212	135	347	0	0	0	348	195	543
157	Tripura	Extension literature	23	0	0	0	0	0	0	0	0	0	0	0	0
158	Tripura	Leaflets/folders	7	0	0	0	0	0	0	0	0	0	0	0	0
159	Tripura	News paper coverage	95	0	0	0	0	0	0	0	0	0	0	0	0
160	Tripura	Radio talk	18	0	0	0	0	0	0	0	0	0	0	0	0
161	Tripura	Popular articles	6	0	0	0	0	0	0	0	0	0	0	0	0
162	Tripura	Training manual	6	35	40	75	25	30	55	0	0	0	60	70	130
163	Tripura	Electronic media (CD/DVD)	24	0	0	0	0	0	0	0	0	0	0	0	0

164	Tripura	Awareness camp	38	1446	529	1975	1700	951	2651	6	0	6	3146	1480	4626
165	Tripura	Literature delivered to resource person	37	271	268	539	469	333	802	0	0	0	740	601	1341
166	Tripura	Farmer-Scientist interaction	12	69	24	93	521	341	862	0	0	0	590	365	955
167	Tripura	Ex-trainee Sammelan	1	8	2	10	24	7	31	0	0	0	32	9	41
168	Tripura	PRA	5	49	33	82	83	28	111	0	0	0	132	61	193
169	Tripura	Soil test campaign	8	91	73	164	54	41	95	0	0	0	145	114	259
170	Tripura	Soil health camp	6	167	87	254	217	55	272	0	0	0	384	142	526
171	Tripura	Film show	46	325	249	574	254	173	427	0	0	0	579	422	1001
172	Tripura	Mahila Mandal Convener meet	1	0	0	0	0	40	40	0	0	0	0	40	40
173	Tripura	Others	33	200	165	365	263	101	364	0	0	0	463	266	729
Total			**3646**	**8692**	**4381**	**13073**	**12356**	**7453**	**19809**	**26**	**10**	**36**	**21048**	**11834**	**32882**
GRAND TOTAL			**28270**	**17979**	**10482**	**28461**	**101427**	**83633**	**185060**	**4078**	**2209**	**6287**	**119406**	**94115**	**213521**

2.7. Women Empowerment through Technological Interventions

Training on Food Preservation

To empower farm women, female rural youth and female extension personnel, the KVKs organized various initiatives such as capacity building, skill improvement, drudgery reduction, formation of SHGs, resource mobilisation and other activities during 2020. A total 34576 women representing 51.98 percent of the total beneficiaries (66510) were imparted skill oriented trainings in different areas of crop and livestock enterprises/ farming. Out of 3709 extension personnel trained during 2020, 1780 were female extension personnel (47.99 %). Women empowerment was taken care with preference while conducting the sponsored and vocational training programmes also. About 2566 women accounting 46.22 percent of the total number of beneficiaries (5552) participated in the sponsored training programmes. While 51.75 percent (754) of the total number of beneficiaries (1457) participated in the vocational training programmes were female. The training programmes mainly included the specific aspects like nursery raising, post-harvest processing and value addition, vermi-compost production, drudgery reduction through use of farm implements and tools, duckery, tailoring, mushroom cultivation, bee keeping, goatery, piggery, poultry, dairying and floriculture.

2.8. Production of Seeds, Planting materials and Bio-products

Production of quality seeds and planting materials by the KVKs and their supply to the farmers were among the important activities undertaken by the KVKs in the zone. During the period, KVKs of the zone produced 4368.43 q of quality seeds, 2175452 planting materials, 492001 q of bio-products and 3106607 livestock and fingerlings which includs 3070924 fish fingerlings. A total 2432.61 q cereals seeds with highest in the state of Manipur (1217.8q), Oilseeds (377.79 q), Pulses (325.73 q),84.226 q seeds of Vegetables, (297.91 q) seeds of Spices, (530.102 q) seeds of fruits and 299.061q seeds of other crops such as fodder, fibre crops etc. were produced by the KVKs in the zone. Planting materials of fruits (78074),

Participatory seed & planting materials production at farmers' field

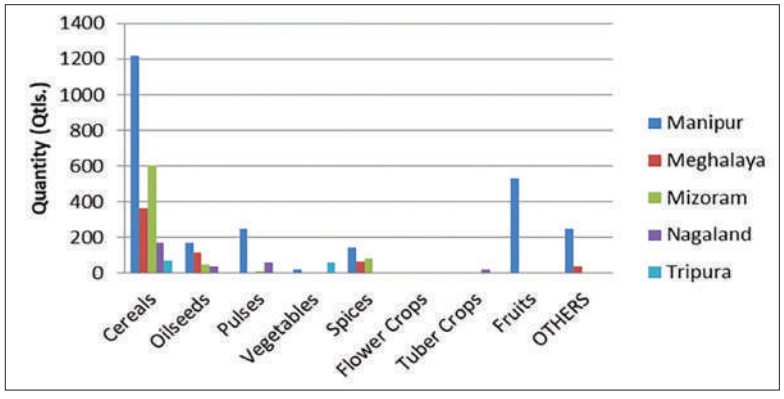

Fig 6: State-wise Production of Seed Materials by KVKs under Zone VII

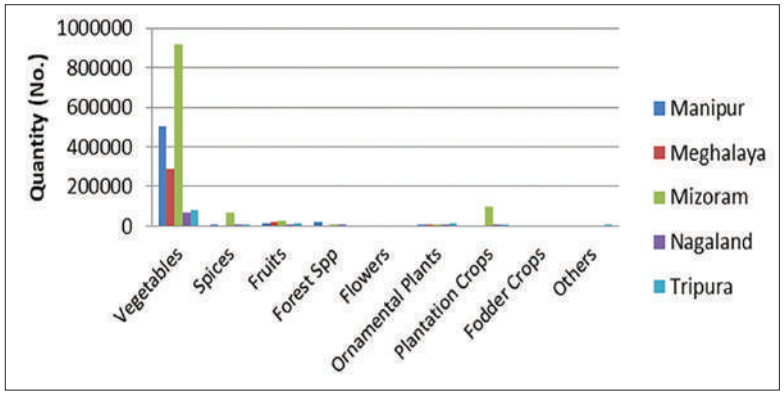

Fig 7: State-wise production of Planting Materials by KVKs under Zone VII

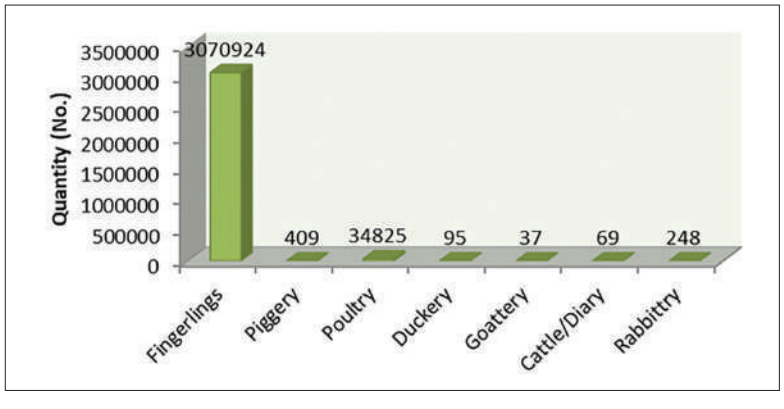

Fig 8: Enterprise wise representation of livestock and fingerlings

plantation crops (101489), vegetables (1858744), spices (85698), ornamental crops (27100), forest species (23747) and others (600) were produced for supply and distribution to farmers. The KVKs of the zone also produced 492001q of bio-products including 3150 q of bio-agents and 45309q of bio-fertilizers. Among the livestock products produced by the KVKs during the reporting period were 35629 livestock strains and 3070924 fingerlings (**Table 28**).

Table 28: State-wise details of Seeds and Planting materials production during 2020

Major Group/Class	State					Total
A. Seed Materials (in qt)	**Manipur**	**Meghalaya**	**Mizoram**	**Nagaland**	**Tripura**	
Cereals	1217.8	367.5	605.2	170.9	71.21	2432.61
Oilseeds	170.5	117.32	51.19	37.5	1.28	377.79
Pulses	246.8	4.2	13.27	59.15	2.31	325.73
Vegetables	20.6	1.05	0	0.5	62.076	84.226
Spices	143.2	65.1	82.2	7.4	0.011	297.911
Flower Crops						0
Tuber Crops				20	1	21
Fruits	530				0.102	530.102
Others (Specify)	250	40.76	2.5	4	1.801	299.061
Total	**2578.9**	**595.93**	**754.36**	**299.45**	**139.79**	**4368.43**
B. Planting Materials (No.)						
Vegetables	505217	289200	916450	67900	79977	1858744
Spices	4000		70000	5244	6454	85698
Fruits	12130	22100	27405	3420	13019	78074
Forest Spp	18572		5000	175		23747
Flowers						0
Ornamental Plants	60	2100	1000	6500	17440	27100
Plantation Crops			100000	800	689	101489
Fodder Crops						
Others					600	600
Total	**539979**	**313400**	**1119855**	**84039**	**118179**	**2175452**
C. Bio-Products (No.)						
Bio Fertilizers	12050	10000	1150	22109		45309
Bio Agents			1150			3150
Bio Pesticides			737			1150
Mushroom Spawn	2004.6					2004.6
Total	**14054.6**	**10000**	**3037**	**22109**	**0**	**492001**
D. Livestock &Fingerlings (No.)						
Livestock Strains	1974	3152	13383	277	16897	35686
Fingerlings	2823240	160684	0	0	87000	3070924
Total	**2825214**	**163836**	**13383**	**277**	**103897**	**3106607**

2.9. Scientific Advisory Committee (SAC) Meetings

During the year 2020, a total 43 SAC meetings were conducted by the KVKs of the zone. In the meetings, the committee members made the detailed review of the progress of the activities made by the KVKs along with the Action Plan for the following year was discussed and finalized for the particular district. Members from various line departments including input agencies, mass media, farmer representatives as well as financial institutions participated in the meetings and suggestions were made accordingly for further improvement and well-functioning of the KVKs in their respective districts.

Table 29: Scientific Advisory Committee (SAC) meetings of KVKs during 2020

Sl. No	State	SAC conducted (No.)
1	Manipur	9
2	Meghalaya	7
3	Mizoram	8
4	Nagaland	11
5	Tripura	8
	Total	**43**

2.10. Revolving Fund (RF)

KVKs reported opening balance of Rs. 8788174.64 on April 1, 2019, and generated income of Rs. 9647872.00 in 2020, with a closing balance of Rs. 9270370.14 by the end of March 2020. The revolving funds were used to generate revenue and resources from the available land of the KVK farm. KVKs produce high-quality seeds and planting materials for a variety of crops and enterprises, including rice, oilseeds, pulses, fruits, vegetables, spices, ornamental crops, plantation crops, bio-fertilizers, bio-agents, bio-pesticides, piglets, fingerlings, and chicks etc. and supplied to farmers and the concerned line departments for further supply and distribution to farmers during the period. The state-wise opening balance and the present status of revolving funds of KVKs are given below (**Table 30).**

Table 30: Status of Revolving Fund (RF) of KVKs during 2020

Status of Revolving Fund of KVKs during 2020					
Sl. No	**States**	**No of KVKs**	**Opening Balance (Rs.)**	**Income Generated during the Year (Rs.)**	**Closing Balance (as on 31st March 2019)**
1	Manipur	9	2407808.00	1857654.00	1010616.00
2	Meghalaya	5	881524.14	132647.00	789740.14
3	Mizoram	8	2406104.00	1928523.00	3603368.00
4	Nagaland	11	1335752.50	787391.00	1353480.00
5	Tripura	5	1756986.00	4941657.00	2513166.00
Total		38	8788174.64	9647872.00	9270370.14

2.11. Special Programmes

Indian Council of Agricultural Research has implemented 14 new initiatives namely, "**KSHAMTA**" (Knowledge Systems and Homestead Agriculture Management in Tribal Areas), "**NARI**" (Nutria-sensitive Agricultural Research Innovation), Hydroponics, Rainwater Harvesting Structure, Soil and Water testing, "**KMAS**" (Kisan Mobile Advisory Services, Creation of Seed Hubs),"**PKVY**"Paramparagat Krishi Vikas Yojana, "**MGMG**" (Mera Gaon Mera Gaurav) and"**DFI**" (Doubling Farmers Income) in several KVKs under the zone.A brief description of the programmes is discussed hereunder.

2.11.1 Knowledge Systems and Homestead Agriculture Management in Tribal Areas (KSHAMTA)

The Indian Council of Agricultural Research (ICAR) has launched a programme called KSHAMTA, which aims to boost agricultural development by utilising the local knowledge system existing in tribal areas. In 2020, the initiative has been implemented in 8 districts of the zone (**Table 31**) with a tribal population of more than 25 per cent (Chandel, Ri-Bhoi, Aizawl, Mamit, Kohima, Zunheboto, Dhalai, South Tripura). Trainings and demonstrations on Nutrition-rich crops and other activities like fisheries and animal husbandry in tribal areas were conducted by the KVKs in these areas.

Table 31: Number of KVKs undertaking KSHAMTA and NARI during 2020

State	No. of KVKs in KSHAMTA	No. of KVKs in NARI
Manipur	9	9
Meghalaya	7	7
Mizoram	8	8
Nagaland	11	11
Tripura	8	8
Total	**43**	**43**

Table 32: Status of KSHAMTA during 2020-21

States	KVKs (No.)	Adopted Villages (No.)	Farmers benefited (No.)	
			Demonstrations (No.)	Trainings (No.)
Manipur	9	15	255	880
Meghalaya	7	20	149	710
Mizoram	8	21	287	692
Nagaland	11	17	229	565
Tripura	8	8	165	201
Total	**43**	**81**	**1085**	**3048**

2.11.2 Nutri-sensitive Agricultural Research Innovation (NARI)

The aim of NARI is to raise awareness of nutrient-sensitive agriculture among farm women and rural youth through Subject Matter Specialists (Home Science) assigned to KVKs, encouraging them to cultivate nutri-rich crops in their kitchen gardens.

In the year 2020, all the 43 KVKs of the zone have been implementing this programme. The KVKs conducted a number of training, capacity building and awareness

Awareness Programme under NARI by KVK Khowai

programmes, Food fortification through inclusion of wild fruit, plants and vegetables; demonstration on nutritional garden development in the households along with the preparation of organic manure, compost from kitchen waste & bio pesticide, etc **(Table 33)**.

Table 33: Status of NARI during 2020-21

Sl. No.	States	KVKs (No.)	Nutri Smart Villages (No.)	Farmers benefited (No.)
1.	Manipur	9	19	1584
2.	Meghalaya	7	34	2653
3.	Mizoram	8	21	1136
4.	Nagaland	11	19	2082
5.	Tripura	8	15	1422
	Total	**43**	**108**	8877

2.11.3 Hydroponics

Nine KVKs namely Imphal East, Senapati, East Khasi Hills, Ri-Bhoi ,Wokha, Tuensang, Mamit, Champhai and Sepahijhala are implementing Hydroponics and are in their initial stage. The KVKs have completed the construction of Poly-houses (specifically for hydroponic), demonstration units, installation of pumps, *etc.* and activities are in progress **(Table 34)**.

Hydroponics Unit, KVK East Khasi HIlls

Table 34: Status of Hydroponics during 2020-21

Sl. No.	State	Name of KVKs	Progress of the Activities
1	Manipur	Imphal West	Construction in progress, will start functioning by 1st week of November
		Senapati	Installation completed, Started growing vegetables
2	Meghalaya	East Khasi Hills	Demo 1. Deep water culture (Iron trough) -Growing Lettuce
			Demo 2. NFT (Horizontal PVC pipe)- Growing Strawberry
			Demo 3. NFT (Vertical PVC pipe) -Parsley to be sown in two weeks time.
			Demo 4. Deep water culture (Wooden Frame - floating type) -Lettuce to be sown in two weeks time.
			Demo 5. NFT (Single vertical frame) -coriander to be sown in two weeks time.
			Demo 6. Aquaponics- Crops : Tomato, Cabbage- Fishes : Vietnam Koi - 25 nos.
			Demo 7. Deep water culture (Wooden trough) -celery , parsley to be sown in two weeks time.
		Ri-bhoi	One unit of hydroponics established at the cost of Rs. 1,00,000/- received during the financial year 2020-2021. Vegetables under production stage

3	Nagaland	Tuensang	1. On Farm Trail on Popularization of various hydroponic systems for cultivation of exotic leafy vegetables in Tuensang District was conducted during session 2020
			2. On Farm Trail on Varietal evaluation of cucumber on various hydroponic systems has been iniciated for the session 2021
		Wokha	Supply order given to firm for establishment
4	Mizoram	Champhai	Structure has been completed
		Mamit	Procurement is in progress
5.	Tripura	Sepahijhala	As KVK Sepahijal do not have any existing green house system; So, KVK Sepahijala could not able to set up any hydrophonics systems with Rs-100000/(Rupees one lakh only)
Total	**5**	**9**	

2.11.4 Rain Water Harvesting Structure

Rain Water Harvesting Unit by KVK Senapati

During the years 2020-21, 17 KVKs conducted various activities related to rain water harvesting and management, including training, demonstrations, the production of planting materials and other extension activities such as field visits, farmer-scientist interactions *etc.* to improve farmers' knowledge and skills in the construction and use of rain water harvesting structures. Some of the KVKs under the zone are also putting concerted efforts on awareness generation in rain water harvesting for timely utilization during lean season in fields. A detail of the achievements of rain water harvesting structure and its management by the KVKs is given in **Table 35.**

During the period under report, as many as 43 training programmes and 67 demonstrations were conducted by the KVKs on construction and use of rain water harvesting structures using locally available resources which could help in production of 74233 numbers of planting materials. During the same period, around 481 farmers visited to the KVKs for the said purpose and 213 nos. of visits were made by the KVK scientists to the farmers' fields to guide efficient construction of the structures.

Table 35: Achievement of Rain Water Harvesting Structures during 2020

State	KVK Name	No. of Training Programme	No. of Demonstration	No. of Planting Materials Produced	Visit by Farmers	Visit by KVK Staff
Manipur	Bishnupur	0	0	0	0	0
	Chandel	4	7	38	37	12
	Churachandpur	0	0	0	0	0
	Imphal East	2	8	5000	13	12
	Imphal West	2	2	2000	40	12
	Senapati	3	4	50000	6	3
	Tamenglong	0	0	0	0	0
	Thoubal	0	0	0	0	0
	Ukhrul	1	2	200	20	4
Total		**12**	**23**	**57238**	**116**	**43**

Meghalaya	East Khasi Hills	3	-	-	-	-
	Jaintia Hills	0	0	0	0	0
	Ri-Bhoi	0	0	0	10	10
	West Khasi Hills	4	2	0	8	26
	East Garo Hills	1	3	200	27	21
	SouthGaro Hills	2	5	3500	120	10
	West Garo Hills	-	2	2000	9	25
Total		**10**	**12**	**5700**	**174**	**92**
Mizoram	Aizawl	3	10	2000	74	23
	Champhai	1	1	0	18	6
	Kolasib	0	0	0	0	0
	Lawngtlai	0	0	0	0	0
	Lunglei	0	0	0	0	0
	Mamit	0	0	0	0	0
	Saiha	2	1	3000	60	15
	Serchhip		3			2
Total		**6**	**15**	**5000**	**152**	**46**
Nagaland	Dimapur	0	0	0	0	0
	Kiphire	0	0	0	0	0
	Kohima	1	1	6295	4	-
	Longleng	0	0	0	0	0
	Mokokchung	0	0	0	0	0
	Mon	0	0	0	0	0
	Phek	4	5		20	10
	Peren	0	0	0	0	0
	Tuensang	6	6		6	10
	Wokha	0	0	0	0	0
	Zunheboto	0	0	0	0	0
Total		**11**	**12**	**6295**	**30**	**20**
Tripura	Dhalai					
	Khowai	**4**	**5**	**-**	**9**	**12**
	North Tripura					
	South Tripura					
	West Tripura	0	0	0	0	0
	Sepahijala	0	0	0	0	0
	Gomati	0	0	0	0	0
	Unakoti					
Total		**4**	**5**	**0**	**9**	**12**
Grand Total		**43**	**67**	**74233**	**481**	**213**

2.11.5. Soil and Water Testing

2.11.5.a. Sample Analysis

In addition to their mandated activities, the KVKs in Zone-VII rendered special assistance to farmers in 2020 by conducting laboratory analyses of soil, water and plant samples in order to prescribe balanced fertilisers for soil, water and plant health improvement. The KVKs evaluated 7824 samples during the reporting period, including soil samples (6086), water samples (645) and plant samples (1093). About 471 villages were covered in the process, with a total 14524 farmers benefiting from sample analysis. The state-wise details of Soil, Water and Plant samples analysis is given in **Table 36.**

Table 36: Status of Soil, Water and Plant Testing labs in KVKs under Zone-VII during 2020

State	Samples tested/ Analysed	Nos.	Farmer beneficiaries (No.)	Village covered (No.)
Manipur	Soil Sample	2022	3950	124
	Water Sample	355	343	48
	Plant Sample	272	272	50
Meghalaya	Soil Sample	492	1407	32
	Water Sample	42	42	7
	Plant Sample	0	12	5
Mizoram	Soil Sample	1740	2578	65
	Water Sample	130	115	14
	Plant Sample	100	100	5
Nagaland	Soil Sample	768	2068	47
	Water Sample	82	82	7
	Plant Sample	0	0	0
Tripura	Soil Sample	1064	2730	51
	Water Sample	36	36	8
	Plant Sample	721	789	8
Total	Soil Sample	6086	12733	319
	Water Sample	645	618	84
	Plant Sample	1093	1173	68
Grand Total		7824	14524	471

2.11.5. b. Soil Health Cards (SHCs)

Under the SHC scheme, the Government issue soil health cards to farmers which will carry crop wise recommendations of nutrients and fertilizers required for the individual farms to help farmers to improve productivity through judicious use of inputs. KVKs in the zone tested soil samples in various soil testing labs including Mridaparikshak and analysed the strength and weaknesses (micro-nutrients deficiency) of the soil and suggested measures to deal with it. The results and

suggestions are displayed in the soil health cards (SHCs). As many as 11640 numbers of Soil Health Cards (SHCs) were distributed to 12733 farmers on different occasions and farmers' programmes organised by KVKs in the zone (**Table 37)**.

Table 37: State-wise details of Soil Health Cards (SHCs) distributed to the farmers during 2020

SL. No	State	SHCs Distributed (No.)	Farmers Benefitted (No.)
1	Manipur	4180	3950
2	Meghalaya	814	1407
3	Mizoram	2644	2578
4	Nagaland	2042	2068
5	Tripura	1960	2730
Total		11640	12733

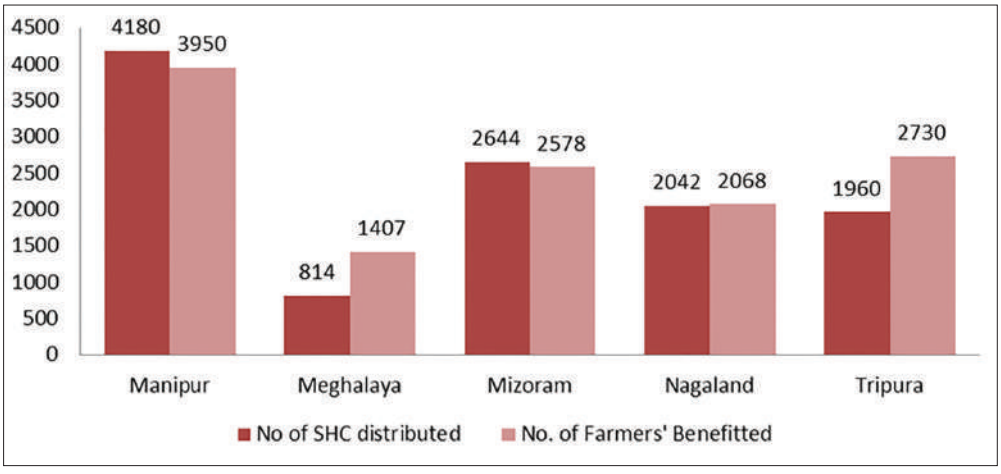

Fig 9: State-wise graphical representation of SHCs and farmers benefitted

2.11.6. Kisan Mobile Advisory Services rendered by KVKs

During 2020-21, KVKs provided Kisan Mobile Advisory Services in connection with technology transfer by providing information, solutions and suggestions to a various problems relating to agriculture and allied activities, as well as gathering feedback from farmers for further assessment and refinement in order to generate location-specific technologies. Table 38 shows that 36572 messages were sent to 282541 farmers in remote districts of the zone, benefiting a total 36572 people. The messages related to solution for crops (15521), livestock (4249), weather (7633) marketing (1215), awareness generation (4277) and other enterprises (3677).

Table 38: Kisan Mobile Advisory Services (KMAS) rendered by KVKs during 2020

Enterprise/Activity	Type of Message	Messages (No.)	Beneficiaries(No.)
Crop	Text only	5041	31607
	Voice only	7182	12601
	Voice and Text both	3298	4325
	Total	**15521**	**48533**
Livestock	Text only	1484	21253
Voice only		1697	6803
	Voice and Text both	1068	2732
	Total	**4249**	**30788**
Weather	Text only	5891	141761
	Voice only	330	4025
	Voice and Text both	1412	1252
	Total	**7633**	**147038**
Marketing	Text only	567	6871
	Voice only	215	410
	Voice and Text both	433	898
	Total	**1215**	**8179**
Awareness	Text only	1621	25158
	Voice only	636	2960
	Voice and Text both	2020	1934
	Total	**4277**	**30052**
Other Enterprise	Text only	1709	13668
	Voice only	751	2037
	Voice and Text both	1217	2246
	Total	**3677**	**17951**
Grand Total		**36572**	**282541**

2.11.7. Creation of Seed Hubs for increasing indigenous Production of Pulses in 2020

KVK Thoubal in Manipur was selected as a Seed Hub KVK Centre under ICAR-ATARI, Umiam for the construction of Seed Hubs to address the seed requirements of the farmers in order to increase the production of Pulses in the Zone. During Kharif season 2020, the KVK centre produced 135.8 q black gram (PU-31), moong (IPM-2-3) and arhar (TS-3R) pulse seeds; and 458 q of pulse seeds such as field pea (Aman), lentil (HUL-57) and chick pea (JG-16) in Rabi 2020-21, covering 98 ha as depicted in **Table 39.**

Table 39: Creation of Seed Hubs for indigenous production of pulses in 2020

Creation of Seed hubs (2020)					
Seed hub Centre	**Season (*rabi/ kharif*)**	**Crop**	**Variety**	**Area Sown (ha)**	**Production (q)**
Thoubal, Manipur	**Kharif**	Arhar	TS-3R	10	17.5
		Blackgram	PU-31	20	98.3
		Moong	IPM-2-3	10	20
	Sub Total			**40**	**135.8**
Thoubal, Manipur	**Rabi**	Chickpea	JG-16	8	54
		Lentil	HUL-57	40	349.91
		Fieldpea	Aman	10	54.2
	Sub Total			**58**	**458.11**
Total				**98**	**593.91**

2.11.8. Cluster Demonstration of Organic Farming through Paramparagat Krishi Vikas Yojana (PKVY)

The Paramparagat Krishi Vikas Yojana (PKVY), launched in 2015, is an extended component of Soil Health Management (SHM) under the Centrally Sponsored Scheme (CSS), National Mission on Sustainable Agriculture (NMSA). PKVY aims at supporting and promoting organic farming, in turn resulting in improvement of soil health. Model Organic Cluster Demonstrations aim at boosting/ promoting organic farming among rural youth/ farmers/ consumers/ traders by creating awareness on the latest technologies of organic farming. These are conducted at the farmer's field in clusters of 20 ha or 50 acres under PKVY.

For implementation of the programme in ICAR, ATARI, Zone-VII, Umiam, 36 KVKs were selected from 5 states in which they were given the responsibility to create clusters of 20 ha in each district to convert the area to an organic cluster and it has to involve the local small and marginal farmers. The general information as well as the activity report from the year 2020-21 is given in the tables 40 and 41:

Table 40: General information on Paramparagat Krishi Vikas Yojana (PKVY)

Name of State	KVK	No. of clusters formed	No. of Farmers registered	Area covered (Ha)	No. of LRP identified	Number of clusters linked to certification agency	No. of clusters in which organic production started	Name of crops produced organically in clusters
Manipur	8	22	174	125	12	14	33	Rice, Maize, French bean and broad bean,Paddy, Garden Pea,Pineapple, Onion, Black Rice,Lentil, Mustard, Chickpea, Black Ginger, Turmeric, Cassava,Turmeric,Cabbage
Meghalaya	7	17	224	121	12	0	15	Ginger and Pineapple,Paddy, Rapeseed and mustard, field pea, rapeseed, turmeric, plum, ginger, orange
Mizoram	7	11	215	120	8	11	11	Pineapple, dragon fruit, banana, cabbage,maize, field pea, pineapple
Nagaland	9	10	190	160	3	2	10	Paddy, Rajmah, pineapple, citrus, field pea, onion, large cardomom, mandarin, orange, chilli, potato, soybean, maize, colocasia, kiwi
Tripura	5	6	66	40	2	0	4	paddy, papaya, pineapple, lemon

Table 41: Details of state-wise activities under PKVY during 2020

State	KVK	Number of clusters linked to markets	Mobilization/ awareness camps organized		Farmers meetings organized		Training programmes organized		Exposure visits organized	
			No. of activities	No. of farmers	No. of activities	No. of farmers	No. of activities	No. of farmers	No. of activities	No. of farmers
Manipur	8	11	18	274	27	209	15	336	1	10
Meghalaya	7	9	19	399	24	367	18	502	2	36
Mizoram	7	9	11	212	17	246	11	226	0	0
Nagaland	9	1	7	127	15	299	15	322	0	0
Tripura	5	2	8	222	8	84	7	148	2	40

2.11.9. Mera Gaon Mera Gaurav (MGMG)

An innovative initiative "Mera Gaon Mera Gaurav" has been planned to promote the direct interface of scientists with the farmers to hasten the lab to land process. The objective of this scheme is to provide farmers with required information, knowledge and advisories on regular basis by adopting villages. At present, 8650 villages are covered under this programme. Various activities like training, demonstrations, awareness programmes, technology handouts, identifying problems at village levels were conducted and assisted by the KVKs to the farmer and farm women **(Table. 42)**

Table 42: Achievements under Mera Gaon Mera Gaurav (MGMG) during 2020

	No. of Villages covered				No. of Visits made				No. of Demonstrations				No. of farmers' meeting			
	No.	SC/ ST	Others	Total	No.	SC/ ST	Others	Total	No.	SC/ ST	Others	Total	No.	SC/ ST	Others	Total
Manipur	58	361	312	673	55	93	173	266	91	95	182	277	60	201	240	441
Meghalaya	147	1580	104	1684	153	945	6	951	73	615	5	620	64	646	0	646
Mizoram	87	1805	10	1815	102	748	30	778	118	528	16	544	66	749	18	767
Nagaland	138	2427	48	2475	127	956	0	956	56	926	0	926	34	644	0	644
Tripura	120	1495	508	2003	96	539	299	838	129	659	193	852	42	499	278	777
Total	**550**	**7668**	**982**	**8650**	**533**	**3281**	**508**	**3789**	**467**	**2823**	**396**	**3219**	**266**	**2739**	**536**	**3275**

2.11.10. Doubling Farmers Income (DFI)

The Hon'ble Prime Minister of India, Shri Narendra Modi on February 28, 2016 stressed upon doubling farmers' income by 2022, when the country shall complete 75 years of its Independence. He accentuated for shaping of his vision through farmer centric approach. The broader approach towards achieving the vision of 'Doubling of Farmers' Income by the year 2022 would be by increasing the net income from each unit of farm by reducing the cost of cultivation, increasing per unit yield and ensuring higher market return on the farmers' produce. For doubling farmers income agriculture has to be converted from production based activities to an income and job generating enterprise.

Dr. M.S. Swaminathan during his presentation on 3rd December 2017 at ICAR Headquarters, New Delhi had made an elaborate presentation highlighting the roadmaps for Doubling Farmers Income. The main components of the road map are:

- An agro-ecological approach involving attention to the farming systems adopted in the following zones: coastal zone; hill zone; arid zone; semi-arid zone; wet zone and islands.
- A farming systems approach which involves crops, horticulture, plantation crops, livestock, fish, forestry and agro-forestry. The doubling of the income will have to be in relation to the farming and agro-processing systems adopted by small producers
- Income can go up if the pricing formula suggested by the NCF namely C2 plus 50 is adopted. Further income depends on the quality of the food material, attention paid to avoid losses at the production, post-harvest stages and to value addition to primary products.

It has been seen that during last thirty years the real income from the farm sector rose by only 3 times. It is, therefore, important that the strategy has to focus on achieving higher growth rate on a consistent basis year after year. In doing so, the sources of income of agricultural households have to be recognized from all aspects.

All KVKs under the jurisdiction of ICAR-ATARI, Zone-VII were advised to take a benchmark survey of 2 villages each in their respective districts and regions for the purpose of doubling the income of farmers by 2022.

Two publications have been made by the institute viz., Strategy Document On Doubling Farmers Income in Meghalaya by ICAR- Agricultural Technology Application Research Institute, Umiam, Meghalaya and Technologies for Doubling Farmers' Income in NEH Region which helped the KVKs to adopt the right approaches in right direction with right technologies for the benefit of the farmers.

The list of adopted villages by the KVKs where DFI programmes are in implementation through KVKs interventions is given in **Table 43**. The villages under KVKs achieved the target of doubling their income and in process of achieving DFI are given in **Table 44**.

Table 43: List of adopted villages by KVKs

Name of State	Name of District/KVK	Name of Villages	No. of household in each village
Manipur	Bishnupur	Leimaram	472
		Kumbi	88
Manipur	Chandel	Chandonpokpi	40
		Modi Village	47
Manipur	Imphal East	Nungbrung	320
		Huikap	860
Manipur	Imphal West	Wangoi	475
		Laiphrakpam	115
Manipur	Thoubal	Lourembam	242
		Ukhongshang	290
Manipur	Senapati	Chawang Kiming	35
		Makhan village	155
Manipur	Ukhrul	Lungshang	100
		Lungsan	30
Manipur	Tamenglong	Tupul Pt-I	70
		Charoi-chagotlong	100
Manipur	Churachandpur	Saihenjang	41
		K. Salbung	75
Meghalaya	Ribhoi	Umrleng	120
		Madan Nonglakhiat	184
Meghalaya	East Garo Hills	Megagre Songgitcham	70
		Megagre Songgital	44

Meghalaya	South Garo Hills	Dobogre	125
		Bibragre	239
Meghalaya	East Khasi Hills	Tynring	200
		Pashang	63
Meghalaya	West Khasi Hills	Mawkynbat	62
		Phudbah	55
Meghalaya	Jaintia Hills	Niawkmai Village	93
		Lumkhudung	51
Meghalaya	West Garo Hills	Aminda Rangsa	52
		Aminda Simsang	92
Nagaland	Peren	Deukwarma	52
		New chalkot	84
Nagaland	Kohima	Nerhe Phezha	56
		New Tesophenyu	79
Nagaland	Kiphire	Pelunger	225
		Langkok Village	40
Nagaland	Dimapur	Zuheshe Village	87
		Maova Village	93
Nagaland	Tuensang	Chendang	146
		Kuthur	652
Nagaland	Mokokchung	Kupza	118
		Yimchalu	40
Nagaland	Mon	Langmeang	52
		Sowa Changle	32
Nagaland	Wokha	Koio	286
		Elumyo village	158
Nagaland	Zunheboto	Litta New	64
		Zaphumi	36
Nagaland	Phek	Gidemi	65
		Upper Khomi	120

Nagaland	Longleng	Nyang (Old)	475
		Lingtak (New)	113
Mizoram	Mamit	Rulpuihlim	90
		Darlak	234
Mizoram	Kolasib	Buhchangphai	251
		Lungmuat	182
Mizoram	Aizawl	Dakla Zau, Sihphir	40
		Muthi	51
Mizoram	Champhai	Tuipui	100
		Chawngtlai	370
Mizoram	Lawngtlai	Chawnhu	173
		Thingkah	284
Mizoram	Saiha	Noaotlah – III	63
		Riasikah	36
Mizoram	Lunglei	Rawpui	170
		Tuipui 'D'	100
Mizoram	Serchhip	Chekawan	55
		Lungchhuan	152
Tripura	Khowai	Nayanpur, Krishnapur	851
		East Ramchandra Ghat	1124
Tripura	North Tripura	Uptakhali GP	753
		Madhuban ADC Village	452
Tripura	South Tripura	West Pillak	220
		Paikhola	215
Tripura	West Tripura	Brajabashipara	60
		Dumtipara	115
Tripura	Dhalai	Dabbari	400
		Maharanipur	579
Tripura	Sepahijala	Latiacherra	429
		Chikoncherra	670
Total			**15452**

Table 44: Villages achieved the target of Doubling Farmers' Income by December, 2020

State	KVK/District	Villages
Meghalaya	East Garo Hills	Megagre Songgital
		Megagre Songgitcham
		Rongreng Baiza
		Warima
		Chachatgre
		Rangmalbadim
	West Khasi Hills	Mawkynbat
	South Garo Hills	Bibragre (46%)
		Dobogre (51%)
		Ongoing- Niawkmai
	Jaintia Hills	Ongoing- Lumkhudung
Mizoram	Champhai	Tuipui
		Tualte
	Siaha	Noaotlah-III
	Lawngtlai	Chawnhu
Nagaland	Phek	Gidemi
		Upper Khomi
	Tuensang	Chendang
Tripura	West Tripura	Brajabashipara
	Khowai	Nayanpur (North Krishnapur)
		Bhattapura & Namapara (East RamChandra Ghat)

2.11.11. Initiatives related to agriculture and allied sectors taken by KVKs under Zone VII during COVID 19

During COVID 19, the KVKs in Zone VII took a number of initiatives related to agriculture and allied sectors to reach out to farmers and ensure that agricultural operations ran smoothly without any hindrance. KVKs in the region managed to organize 66555 awareness programmes following COVID guidelines to raise farmer awareness and provide support during a critical period, benefiting 24954256 farmers. KVKs in the region also continued to provide advisories to the farming community related to crops (284680 advisories, 45091738 beneficiaries), livestock (70102 advisories, 18974037 beneficiaries) and market interventions (56365 advisories, 7241720 beneficiaries) (34677 advisories, 18974037 beneficiaries) (**Table 45).**

Table 45: KVK initiatives related agriculture and allied sectors during COVID 19

State	Awareness programs on Covid prevention		Crop related advisory given during Covid		Livestock / fisheries related advisory given during covid		Market enabling interventions taken up during covid		Any other covid related interventions taken during covid	
	No.	No. of beneficiaries	No.	No. of beneficiaries	No.	No. of beneficiaries	No.	No. of beneficiaries	No.	No. beneficiaries
Manipur	3092	1025706	12858	1831726	2957	745578	2286	289951	1364	204014
Meghalaya	4190	1534006	17841	2805397	4430	1187634	3490	446631	2191	311774
Mizoram	8380	3068012	35682	5610794	8860	2375268	6980	893262	4382	623548
Nagaland	17068	6595314	73473	11811151	18087	4957542	14828	1912724	8991	1307654
Tripura	33825	12731218	144826	23032670	35798	9708015	28781	3699152	17749	2554570
Total	**66555**	**24954256**	**284680**	**45091738**	**70132**	**18974037**	**56365**	**7241720**	**34677**	**5001560**

2.12. Awards and Recognition

During the year 2020, the KVKs under ICAR-ATARI, Umiam have received numerous awards and recognitions for their excellent performances and accomplishments, including contributions in various fields of agricultural and allied sectors. The Best KVK Scientist Award was awarded by the Society of Krishi Vigyan to KVK Bishnapur in the field of extension education for their contributions in teaching, research and extension. Research excellence Award 2020 conferred to SMS-Horticulture of KVK Bishnapur by InSc Unit of SDPL with Momento & Certificate for Research Work Publication. The Society of KrishiVigyan has awarded Senior Scientist and Head of KVK Kolasib the Best Woman Scientist Award of 2020 for her remarkable contribution to agriculture and allied sectors. The National Agri. Fair, organised by Central Agricultural University, Imphal, awarded KVK Imphal West, the Best KVK Award among the North East KVKs. The KVK head of East Garo Hills received a distinguished scientist award from the Society for Scientific Development in Agriculture and Technology (SSDAT), Meerut and SMS Plant Protection received a Young Researcher Award from the Institute of Scholars in Bengaluru, Karnataka. Dr. Manoj Singh Sachan of KVK Mon was awarded the Outstanding Scientist Award for the year 2020 by The Society of Tropical Agriculture, New Delhi, for the development of standard PoP of underutilised crops and large-scale promotion of HYVs/cultivars for DFI, as well as a Certificate of Appreciation for the year 2020 by SCPCRN, Government of Nagaland. Dr. Patu K. Zeliang, SMS PBG of KVK Peren was awarded the Young Scientist Award by the Society of Krishi Vigyan during the Society of Krishi Vigyan's 2nd National Conference on Advances in Sustainable Agriculture, held on September 26-28, 2020 **(Table 46)**. .

Smt.Trinity Saioo a leading women farmer of the state of Meghalaya has been awarded with Padma Shri for her work in developing rural women-owned sustainable organic farming. She has also trained 800 women farmers in her village Mulieh, Meghalaya, to grow the purest and most potent form of turmeric through organic methods. Shri.K. Biteshwor Singh, (KVK Bishnupur) an innovative farmer was conferred with Best State Level Farmer Award with cash award of Rs. 50000 by SAMETI, Govt. of Manipur. The Innovative Farmer Award 2020 was conferred to Mr. Charan Debbaarma by ICAR-CRIDA for his work in IFS and Innovative Maize Grower Award was endowed to Mr. Alen Debbarma, Mr. Anil Debbarma, Mr. Mantu Debbarma and to Mr. Chabi Kumar Debbarma of KVK Khowai, Tripura. The detailed summary on awards and recognitions are provided in **Table 47**.

Table 46: Awards and recognitions received by KVKs under ICAR-ATARI, Zone VII during 2020

Sl. No.	Name of Award/ recognition/ fellowship	Professional Society/ Govt./ ICAR/ Any other agency (pl. specify)	Value of award (Rs. In lakh)	Salient Contribution/ achievement
MANIPUR				
KVK: Bishnupur				
1	Best KVK Scientist Award conferred to SMS-Agronomy.	Society of KrishiVigyan	-	Best KVK Scientist award in the field of Agronomy
2	CFLD Pulses Award	ICAR, ATARI, Zone VII-Umiam	-	Effective implementation of CFLD on blackgram during 2019-20
3	Research excellence Award 2020 conferred to SMS-Horticulture.	InSc Unit of SDPL	Momento & Certificate	Research Work Publication
4	Award of Excellence best extension worker conferred to SMS-Horticulture.	ICAR-Indian Institute of Horticultural Research, Bengaluru	-	Popularization of Tomato var. ArkaRakshak in the area 12 hactares.
5	Second best paper presentation award conferred to SMS-Home Sc.	Society of Krishivigyan 2nd national conference on advances in sustainable agriculture	-	Enhancing farmer's income through value addition of pulses (nutripapad)
6	Best KVK Scientist Award in the field of Extension Education	Society of KrishiVigyan	-	Contribution in Teaching, Research and Extension
Chandel				
1	Award for effective implementation of CFLD on Lentil	ICAR – ATARI zone – VII, Umiam, Meghalaya	-	Effective implementation of CFLD on Lentil
2	3rd Best Exhibition Stall	CAU Agri Fair, 2020-21, Imphal	-	-
Churachandpur				
1	Best Woman Scientist Award	Society of KrishiVigyan	-	Base on extension activity and contribution of Research Paper
Imphal West				
1	Best KVK Award amongst the North East KVKs	National Agri. Fair organized by Central Agricultural University, Imphal	-	-Exhibits -FPOs Formation -Farm Mechanization -Technologies Demonstration -Production of Quality Seed & Planting Materials
MEGHALAYA				
KVK: East Garo Hills				
1	Young Researcher Award to SMS-PP	Institute of Scholar, Bengaluru, and Karnataka.	-	Extension cum research work
2	Distinguished Scientist Award to Head-KVK	Society for Scientific Development in Agriculture & Technology (SSDAT), Meerut	-	Extension, research and coordination

KVK: West Garo Hills				
1	Award of Appreciation for Effective Implementation of CFLD on KharifPulses in 2019-20	ICAT-ATARI,Zone-VII,Umiam	-	CFLD(Pulses) 2019-20
2	Best oral presenter for oral presentation on "Organic treatments of ginger during storage for effective management of rhizome in West Garo Hills, Meghalaya" in Technical Session 3 held on December 7, 2020 during Indian Phytopathological Society National Symposium (Virtual) On Plant Disease Management-experiences and aspirations	Indian Phytopathological Society	-	Storage of Ginger
MIZORAM				
KVK: Champai				
1	Certificate of Merit	Khawzawl Sanitation Task Force, Khawzawl, Mizoram	5000/-	1st position in Cleanliness competition 2020
2	CFLD on Field Pea	ICAR-ATARI, Zone-VII, Umiam	-	Effective Implementation of CFLD on Field Pea during 2019-20
KVK: Kolasib				
1	Best Woman Scientist of the Year *(Senior Scientist & Head, KVK Kolasib)*	Society of Krishi Vigyan	-	Outstanding contributions in Agriculture and Allied sectors
KVK: Lunglei				
1	1st Runner Up in Best Clean Office, Hnahthial District 2020.	Hnahthial Town Sanitation Task Force	Citation & Rs.3,000/-	Initiative under Swatch Bharat Abhiyan
KVK: Mamit				
1	Cleanliness Award	Village council, Lengpui	-	3rd Prize
2	Best paper Award	Society of Krishi Vigyan, Sasya Shyamala Krishi Vigyan Kendra, Arapanch, School of Agriculture and Rural Development, Ramakrishna Mission Vivekananda University, Ramakrishna Mission Ashram, Narendrapur, Kolkata 700 003 (West Bengal)	-	2nd Prize
KVK: Serchhip				
1	Best KVK Award for Effective Implementation of Rabi Pulses	ICAR	-	Integrated Nutrient Management in Lentil var. WBL-77, Integrated Nutrient Management in Rajma
2	1st prize in Poster making Competition	CAU, Imphal	-	Poster making on the topic Complimentary effects of of Soymilk to combat PEM & food colour chart

NAGALAND				
KVK: Mon				
1	Outstanding Scientist Award 2020 Dr. Manoj Singh Sachan	The Society of Tropical Agriculture, New Delhi	Certificate and memento	Development of standard PoP of underutilized crops & large scale promotion of HYVs/ cultivars for DFI.
2	Certificate of Appreciation 2020, Dr. Manoj Singh Sachan	Chairperson, SCPCRN, Government of Nagaland	Certificate	Intervention of Technology Demonstration components under NICRA project for the benefit of the farming community.
KVK: Peren				
1	**Young Scientist Award** to Dr Patu K. Zeliang, SMS PBG	Society Of Krishi Vigyan at the 2nd National Conference of Society of Krishi Vigyan on **Advances in Sustainable Agriculture**, held on 26.09.2020 to 28.09.2020	-	Upliftment of the farming Community through Extension services, capacity building and research works.
2	Dr. Patu K. Zeliang got **Second prize in Poster competition** for "Additional Income through Hybrid maize VHM 45 cultivation, a success story".	In the 2 days Workshop conducted from 25-26th Feb.2020 at College of Agriculture, CAU, Iroisemba, Imphal and ICAR- National Bureau of Agricultural Insect Resources (NBAIR). Bengaluru.	-	Conducted varietal evaluation of three hybrid maize varieties VHM 45, VHM 53 & All Rounder with local cultivar Lingta as check for 2 years. Recommended VHM 45 as best variety. Taken up for popularization in 3rd year.
TRIPURA				
KVK: Khowai				
1	Fellow of Society of Bio-Control Advancement to SMS-Plant Protection	Society of Bio-Control Advancement	Certificate & Memento	Promotion of Biological Control as one of the IPM tools in the Farmers Field
KVK: West Tripura				
1	Recognition	ICAR-ATARI , Zone VII, Umiam	Nil	Popularization of Pulses in the West Tripura district

Table 47: Awards and recognitions received by farmers of KVK, Zone VII during 2020

Sl. No.	Name of Award/ recognition/ fellowship	Professional Society/ Govt./ ICAR/ Any other agency (pl. specify)	Value of award (Rs. In lakh)	Salient Contribution/ achievement
MANIPUR				
KVK: Bishnupur				
1	CAU-Farmers' Science Congress 2020-21	Sponsored by ICAR, ATARI, Zone VII, Umiamorganised by DEE, CAU, Imphal	5000	Secured first position in oral competition on the topic "Ensuring higher profits in farming by Integrated Farming System in Bishnupur"
2	Best State Level Farmer Award conferred to K. Biteshwor Singh	SAMETI, Govt. of Manipur	50,000	Excellence performance in cultivation of horticultural crops in state level.
3	Best District Level Farmer Award conferred to N. Ingocha Singh	SAMETI, Govt. of Manipur	20,000	Excellence performance in cultivation of horticultural crops in district level.
4	Krishak awards 2021	Krishi Alert- New Holland Agriculture Powered By Honda	5100	Krishak awards 2021 in the area of farm entrepreneurship
KVK: Chandel				
1	2nd prize to Techa Hongcha and Y. Diana for exhibition under Citrus fruit biodiversity in the national seminar on "Conservation and commercialization of citrus biodiversity in NEH Region."	Directorate of Extension, CAU Imphal	2000/-	Food Processing & Value Addition
2	2nd prize to Techa Hongcha in poster competition in CAU Science Congress 2020-21 sponsored by ATARI Zone VI and VII at CAU Imphal	CAU Science Congress 2020-21 sponsored by ATARI Zone VI and VII at CAU Imphal	2000/-	Food Processing & Value Addition
3	Best stall award Techa Hongcha in Regional SARAS MELA, 2020, Imphal	DRDA, Government of Manipur	5000/-	Food Processing & Value Addition
KVK: Imphal West				
1.	Best Women farmers	State Agri & Horticulture department	10000	-SHGs Formation -Community Change Agent -Doubling Household Income

MEGHALAYA				
KVK Jaintia Hills				
1	Padma Shree Award 2020 (Smt.Trinity Saioo)	Minsitry of Home Affairs , Govt.of India, New Delhi	-	Developing rural women owned sustainable organic farming Trained around 800 women in her village, Mulieh Turmeric farming
2	Mahila Kisan Divas Award (Smt.Blossom Nongrum, Smt. Solin Suting, Smt. Angel Syngkon)	KVK, Jaintia Hills	-	Contribution towards agriculture
3	Exhibition of Farmer's Produce(2nd Prize) (Shri Lamphang Suia)	District Horticulture Office, WJHD, Meghalaya	-	Production of honey
MIZORAM				
KVK: Aizawl				
1	Best Farmer of the Mizoram State Award	CAU imphal, Manipur	-	Vegetable cropping system with off season tomato in hilly terrain of Aizawl District
KVK: Saiha				
1	IARI innovative farmer Award	IARI New Delhi	NA	Mithun farming
2	State level best farmer award	SAMETI, Mizoram	1,00,000	Agriculture (Paddy and Maize)
NAGALAND				
KVK: Peren				
1	**Third prize in Poster competition** to Mr. Hanglun Zeliang from Jalukiekam village for "Cultivation practices of rice in Peren district of Nagaland	In the 2 days Workshop conducted from 25-26th Feb.2020College of Agriculture, CAU, Iroisemba, Imphal and ICAR- National Bureau of Agricultural Insect Resources (NBAIR). Bengaluru.	Rs.2000 Memento & Certificate	Successfully conducted On farm Trial of Lowland rice RCM 9 in 2017 and FLD in 2018. RCM 9 taken up for seed production under Seed village programme in 2020.
KVK: Phek				
1	IARI Innovative farmer award	ICAR	-	Paddy thresher
KVK: Wokha				
1	Deen Dayal Upadhyay Anthyodaya Krishi Puruskar	Individual	50,000/-	IFS model farming

KVK: Zunehboto				
1	IARI –Innovative Farmer Award 2020	ICAR	-	i. Modified: Developed his own integrated method of farming called "HOLS MODEL FARMING" where cardamom, Kiwi, Zanthozyllum and Hodgsonia are grown along with fishery and Bee. The kiwi plants are in between and on top of cardamom which provides shades to cardamom. In the same field Xanthozyllum plants are planted which are almost 30-40 feet tall which is highly priced spice. In the border Hodgsonia plants are planted on local berry/ wild plants. These plants acts as a boundary wall and suppress the growth of unwanted trees. The kernel of these plants is used for consumption purpose.
1	IARI –Innovative Farmer Award 2020	ICAR	-	In the same plot, bee boxes are placed. The bees help in pollination of kiwi, Cardamom and other crops. Moreover it helps in generation of quality honey. In the same piece of land small ponds have been made so that it recharges the underground water level, helps in irrigation during lean period, acts as natural conditioner and provides an opportunity to rear fishes. ii.Developed: Developed an indigenous low cost tool called "Cardamom Cutter" which helps in harvesting of cardamom without damaging the bearing spikes.

TRIPURA				
KVK: Khowai				
1	Best Innovative Farmer Award to Mr. Charan Debbarma	ICAR-CRIDA,Hyderabad	Certificate & Memento	IFS,Nano Solar Pump, SRI in Paddy
2	Innovative Maize Farmer Award to Mr. Alen Debbarma	ICAR Research Complex for NEH Region Tripura Centre		Innovative Maize Cultivation
3	Innovative Maize Farmer Award to Mr. Anil Debbarma	ICAR Research Complex for NEH Region Tripura Centre		Do
4	Innovative Maize Farmer Award to Mr. Mantu Debbarma	ICAR Research Complex for NEH Region Tripura Centre		Do
5	Innovative Maize Farmer to Mr. Chabi Kumar Debbarma	ICAR Research Complex for NEH Region Tripura Centre		Do
6	Innovative Maize farmer award to Mr. Mitra Debbarma	ICAR Research Complex for NEH Region Tripura Centre		Do
KVK: West Tripura				
1	Best Garden Pea growing farmer	Department of Agriculture	-	High yield of pea
2	Best vegetable growing farmer	Department of Agriculture	-	High yield of vegetables

2.13. Linkages and Collaboration

During 2020, KVKs under ICAR-ATARI, Zone-VII established strong linkages with MANAGE, Hyderabad, National Fisheries Development Board (NFDB), Hyderabad, Agricultural Skill Council of India (ASCI), New Delhi, IARI, New Delhi, IIHR, Bangalore, CAU, Imphal, AAU, Jorhat, NABARD, ATMA, ICAR-RC NEH for different collaborative programmes and activities related to mass awareness and dissemination of latest technologies to the farmers in the zone.

The KVKs in the zone are also maintaining strong enabling, functional as well as diffusion linkages with different stakeholders including their host institutes, ATARI, Umiam, all line departments of their respective state governments and farmers of the respective districts in matters related to implementation of their mandated and other collaborative programmes such as conduct of on farm testing, frontline demonstration, identification and selection of trainees and training needs of farmers, rural youth and extension personnel for training programmes and conduct of several kinds of extension activities etc. KVKs have also close coordination with other agencies including NGOs and other public and private sectors. KVKs are directly involved in preparation of SREP of ATMA districts and in implementation of various schemes like Mission for Integrated Development in Horticulture, NREGS, SGSY, RKVY etc. Sr. Scientists & Heads and Subject Matter Specialists of KVKs also acted as resource persons for different collaborative HRD programmes sponsored by different organizations such as Assam Agricultural University, ICAR Research Complex for NEH Region, DRDA, NABARD, ATMA including HRD programmes organized by ICAR-ATARI, Zone-VII.

2.14. Performance of Agricultural Technology Information Centres (ATIC)

The ATIC at ICAR Research Complex for NEH Region, Barapani was sanctioned in 1999 by Indian Council of Agricultural Research. The rationale for establishment of ATIC were-

- To provide diagnostic services for soil and water testing, plant and livestock health
- To supply research products such as seeds and other planting materials, poultry strains, livestock breeds, fish seed, processed products etc. emerging from the institution for testing and adaptation by various clientele
- Providing information through published literature and communication materials as well as audio-visual aids
- Providing an opportunity to the institution/ SAU to generate some resource through the sale of their technologies.

Salient Achievements of ATIC, ICAR Research Complex for NEH Region, Umiam during 2020

- A total of 21 farmers visited the ATIC for technology information related to the production and management of various crops and livestock enterprises.
- A total of 21 copies of books and technical bulletins were sold which could generate revenue of Rs. 1300 and distributed 52 folders to the farmers in the zone.

2.15. Technology Backstopping

The details of activities conducted by Directorate of Extension Education, CAU, Imphal regarding the visits made to KVKs, review meetings held, HRD programme conducted and other publications made is presented in **Table 48**.

Table 48: Activities conducted by Directorate of Extension Education, CAU, Imphal

Sl. No.	Particulars	Number
1	No. of Visits by DEE to KVKs	30
2	No. of visits of other scientists to KVKs	5
3	No. of Review meetings held	5
4	Any other monitoring and review meeting held	4
5	HRD Programme conducted for knowledge empowerment and technology backstopping to the KVKs a) No of programme b) No of participants	 1 19
6	Other publications, bulletins, CDs etc. brought out (No)	
7	Extension bulletin (in various topics)	-
8	Technical bulletins	-
9	Leaflets	-
10	News letters	4
11	Farm magazine	4
12	Kisan diary	1
13	Training Manuals	8
14	Calendar	3

3.0 RESEARCH AND DEVELOPMENT PROJECTS FOR HUMAN RESOURCE DEVELOPMENT

3.1. National Innovations on Climate Resilient Agriculture (NICRA)

National Innovations on Climate Resilient Agriculture (NICRA) - a network project of the Indian Council of Agricultural Research (ICAR) was launched in February, 2011. The research on adaptation and mitigation covers crops, livestock, fisheries and natural resource management. The project consists of four components-Strategic Research, Technology Demonstration, Capacity Building and Sponsored/Competitive Grants. The project is implemented in 14 KVKs across five states under ATARI Zone VII as presented in the Table below.

Table 49: State wise distribution of NICRA KVKs along with their climatic vulnerability

State	District	Agro-Climatic Zones	Vulnerability
Manipur	Senapati	Sub-Tropical Plain Zone	Drought/water stress
	Imphal East	Mild Tropical Hill Zone	
	Ukhrul	Sub-Tropical Hill Zone	Frost/Soil Erosion
Meghalaya	Ri-Bhoi	Mid Tropical Hill Zone	Drought/water stressFrost/ Hailstorm
	West Garo Hills	Sub-Tropical Hill Zone	Drought/water stress
	Jaintia Hills	Sub-Tropical Hill Zone	Drought/ Flood
Mizoram	Lunglei	Sub-Tropical Hill Zone	Water stress
	Serchhip	Mid Tropical Plain Zone	Drought
Nagaland	Phek	High hill Zone	Drought/water stress
	Dimapur	Mid Tropical Plain Zone	
	Mokokchung	Mild Hill Zone	
	Mon	Upper Brahmaputra Valley Zone	Drought/ Soil erosion
Tripura	Dhalai	Mid Tropical Plain Zone	Flood/ Soil erosion
	Khowai	Mid Tropical Plain Zone	Drought like situation

Table 50: Brief Summary of NICRA Interventions during 2020-21

Intervention	No. of demos	No. of farmers benefitted	Area covered (ha)	Area before NICRA (ha)	Units created (no.)	Animals distributed (no.)	Fish Fingerlings distributed (no.)	Animals Treated / Vaccinated (no.)
NRM - A (In-situ moisture conservation)	298	347	232.07	15.5				
NRM - B (Ex-situ moisture conservation)	36	74	42.81	8.12				
NRM - C (Soil conservation)	359	382	452.86	14.2				
Crop production	507	759	214.46	247.9				
Livestock & Fisheries	263	646	17.18			1185	30000	861
Institutional Interventions		1836	3365.67		18			
TOTAL	**1458**	**4014**	**4323**	**285.72**	**18**	**1185**	**30000**	**861**

Intervention	No. of Courses	No. of beneficiaries		
		Male	Female	Total
Capacity Building	94	941	1129	**2070**
Extension Activities	664	1953	1491	**3444**
TOTAL	**758**	**2894**	**2620**	**5514**

3.1.1 Module I: Natural Resource Management

Natural Resources Management have been further sub categorized into three sub modules viz., In-situ moisture conservation, Ex-situ moisture conservation and Soil conservation.

3.1.1a In-situ moisture conservation: Interventions such as the Broad Bed and Furrow (BBF) technique of planting, the FIRB method, mulching on crops using both plastic and plant residues, conservation of tillage, and others have been implemented and promoted in the NICRA and neighbouring villages under in-situ moisture conservation. Altogether, 298 demonstrations have been completed, covering an area of 232.07 ha and benefitting 347 farmers.

3.1.1b Ex-situ moisture conservation: The building and rejuvenation of agricultural ponds, the construction of Jalkunds, and the installation of adequate irrigation and drainage channels were all part of this sub module's interventions. During the year 2020, 36 demonstrations on this module were completed, covering 42.81 hectares and benefiting 74 farmers.

3.1.1c Soil conservation: This module is concerned with the ever important soil conservation through interventions such as the distribution of soil health cards, nutrient management, green manuring, crop residue incorporation composting and cover crops. A total of 359 demonstrations were completed during 2020, covering an area of 452.86 ha and benefitting 382 farmers.

3.1.2 Module II: Crop Production

Short duration varieties/drought tolerant Varieties/ flood tolerant varieties/ temperature tolerant varieties/ High Yielding Varieties, advancement of planting dates of rabi crops in areas with terminal heat stress, water saving paddy cultivation methods, frost management in horticultural crops through fumigation, Location specific intercropping systems with sustainable yield index, Crop diversification, Protected cultivation, integrated crop management, Pest and disease management, Apiary, Mushroom cultivation, Integrated farming system & others were the prominent interventions

made by KVKs under the project. During 2020-21, 507 demonstrations were conducted on area covering 212 ha which benefitted 729 farmers.

3.1.3. Module III: Livestock & Fisheries

Under this module, interventions such as introduction of new fodder and feed for animals, preventive vaccination against water borne diseases, construction of improved shelters such as deep litter housing in both piggery and poultry in NICRA and adjoining villages. A total of 263 demonstrations were conducted benefitting 646 numbers of farmers. During this period, 1185 animals and 30000 fish fingerlings were distributed to the farmers. Total number of animals that were treated for various diseases as well as vaccinated was 861 throughout the NICRA adopted villages.

3.1.4 Module IV: Institutional Interventions

Under this module, interventions viz. popularization of seed banks, fodder banks, Custom Hiring Centres, climate literacy through village weather stations amongst establishments and collective marketing, community nurseries during unfavourable climatic conditions and others were made. The number of farmers benefitted from this module during 2020-21 was 1836 and 18 units established. It was recorded that 588.8 q of quality crop seeds were produced and stored in seed banks by the farmers.

3.1.5 Module V: Capacity Building

Various training programmes in different fields such as crop diversification, composite fish culture, group dynamics, integrated pest management, soil and water conservation *etc.* were imparted by the KVKs under Zone-VII during 2020-21 which consisted of 194 programmes benefitting a total of 2070 umber of farmers.

3.1.6 Module VI: Extension Activities

Exposure visit of farmers, strengthening SHGs and kisan clubs, Integrated Farming System, field days, method demonstrations, and awareness programmes were the extension activities conducted by KVKs which covered various aspects of climate resilient agriculture by providing vital information for the upliftment of farming communities in the NICRA villages and other adjoining villages. Under this module, a total number of 3444 farmers were benefitted and 664 programmes were conducted.

3.2. Cluster FLDs under National Food Security Mission (NFSM) during 2020-21

Under ICAR-ATARI Zone-VII, there were 26 KVKs selected for implementation of Cluster Demonstration programme. These KVKs organised farm and extension activities for farmers and extension workers to disseminate various technologies and conducted Cluster Front Line Demonstrations (CFLDs) to demonstrate the production potential of newly released technologies on farmer's fields at various locations in a given farming system.

Achievements during 2020-21

During the year 2020-21, a total of 3077 nos. of CFLDs were conducted on Oilseeds and Pulses in 5 North-eastern States of Manipur, Meghalaya, Nagaland, Mizoram and Tripura spanning 1315 hectares. The total area covered by Pulses (Kharif & Rabi Season 2020-21) was 435 ha through 1029 demonstrations. In Oilseeds, total area covered (Kharif & Rabi Season 2018-19) was 880 ha through 2048 demonstration. CFLDs were conducted in different Pulses crops like Blackgram (PU-31, Tripura Maskolai), Green gram (IPM-2-3), Rajma (Selection 9, Arun), Lentil (var. HUL-57, WBL 77) and Field Pea (var. Aman, Prakash, Rachna).In Oilseed crops, CFLDs were conducted in Soybean (DSb-19, JS-95-60, JS 335, Soya VL 79, RVS 2001-04), Sesame (var. Chhibung , ST-1683), Groundnut (var. ICGS-76) and Rapeseed & MustardRapeseed & Mustard (NRCHB-101, TS-57 & PM 30) (Table 51).

Table- 51: State-wise Cluster Front Line Demonstration on Pulses & Oilseeds under NFSM & NMOOP 2020-21

State	Area (ha) Allocated		Area (ha) covered		Demo. Allocated		Demo conducted (No.)	
	Oilseeds	Pulses	Oilseeds	Pulses	Oilseeds	Pulses	Oilseeds	Pulses
Manipur	330	180	322	141	825	450	729	323
Meghalaya	80	40	48	30	200	100	132	55
Mizoram	130	80	100	84	325	200	250	170
Nagaland	230	90	220	100	575	225	519	289
Tripura	200	80	190	80	500	200	418	192
Total	**970**	**470**	**880**	**435**	**2425**	**1175**	**2048**	**1029**

State-wise productivity of Pulse crop for Kharif and Rabi season is shown in Table 52. Fieldpea was conducted in all the five states under the Zone where Meghalaya showed the highest productivity of 14.65 q/ha followed by Manipur with an average yield of 11.45 q/ha. Varieties like Selection 9 and Arun of Rajma pulse crop was grown in Meghalaya and Mizoram. Mizoram had the potential to produce a high output of 16.10 q/ha in comparison to Meghalaya (8.18 q/ha). Lentil var. HUL-57& WBL-77 were demonstrated by KVKs of Manipur, Mizoram and Tripura with average yield of 10.12, 7.48 and 6.25 q/ha respectively. Tripura conducted CFLD on Blackgram var. Tripura Maskolai during Rabi season which reported a yield of 8.80 q/ha. During Kharif season Blackgram var PU-31 and Greengram var IPM-2-3 was implemented in Manipur state and reported a yield of 8.80 q/ha and 7.95 q/ha respectively.

Table 52: State-wise details of productivity of Pulses under NMOOP during 2020-21

S.No.	State	Rabi Yield (q/ha)				Kharif Yield (q/ha)	
		Fieldpea (Aman, Prakash, Rachna)	Rajmash (Selection 9, Arun)	Lentil (HUL-57, WBL-77)	Blackgram (Tripura Maskolai)	Blackgram (PU-31)	Greengram (IPM-2-3)
1	Manipur	11.45		10.12		8.80	7.95
2	Meghalaya	14.65	8.18				
3	Mizoram	8.95	16.10	7.48			
4	Nagaland	10.42					
5	Tripura	10.56		6.25	8.80		
Avg. Yield (Zonal)		**11.21**	**16.10**	**7.95**	**8.80**	**8.80**	**7.95**

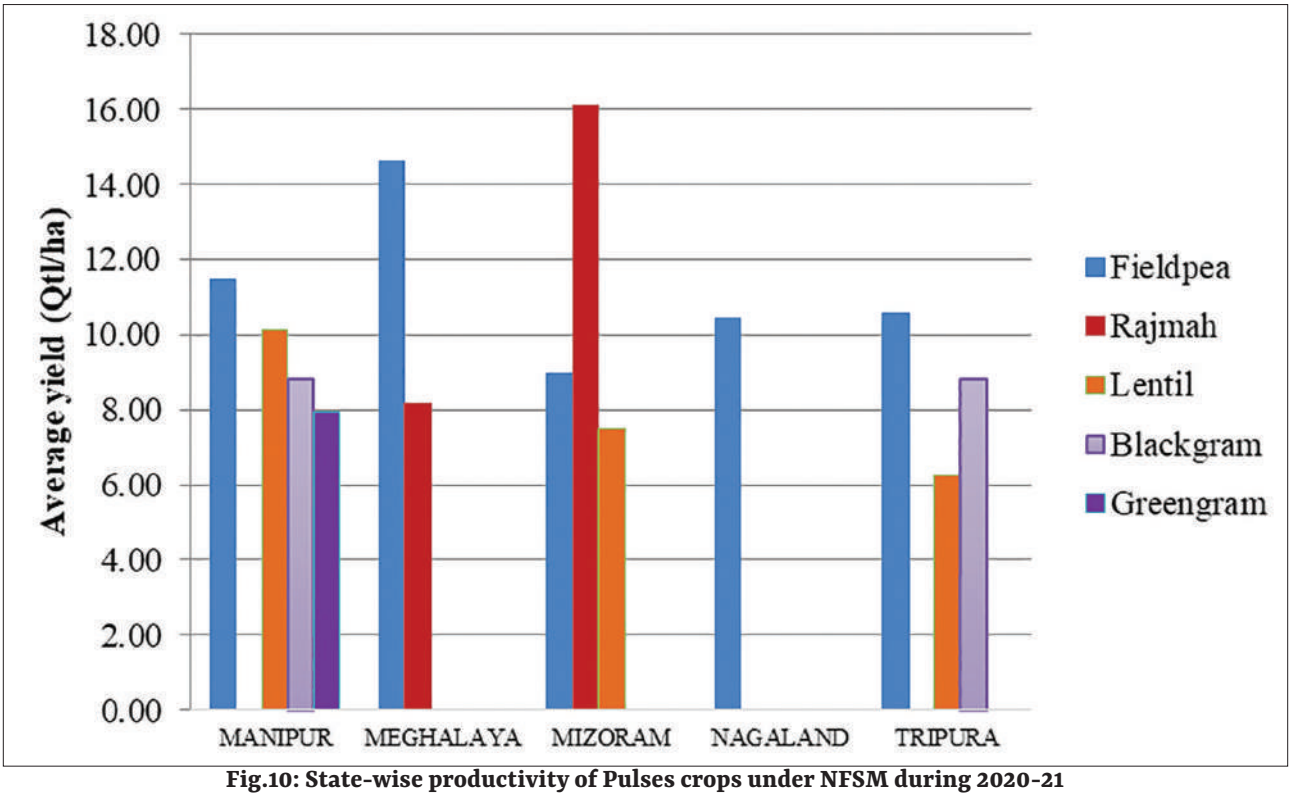

Fig.10: State-wise productivity of Pulses crops under NFSM during 2020-21

State-wise Productivity of Oilseed crops under NFSM during 2020-21 dipicted in Table 53. Soybean (DSb-19, JS-95-60, JS 335, Soya VL 79, RVS 2001-04) was demonstrated by the selected KVKs in the states of Manipur, Mizoram and Nagaland in which the highest average yield level of Soybean was recorded in Mizoram with an average yield of 21.50 q/ha followed by Manipur and Nagaland and the average yield zonal level of Soybean is 16.01 q/ha. KVKs of Meghalaya, Mizoram, Nagaland and Tripura reported the average Zonal yield of 19.84 q/ha in Groundnut (Var.Groundnut (ICGS-76) while the average zonal yield of 8.04 q/ha were recorded in demonstration of Sesame (Chhibung, Tripura Siphing). Rapeseed & Mustard (NRCHB-101, TS-57 & PM 30) was demonstrated by all the five states under under the Zone with an average yield of 8.72 q/ha.

Table 53: State-wise Productivity of Oilseed crops under NFSM during 2020-21

Sl.No.	State	Kharif (Qtl/ha)			Rabi (Qtl/ha)
		Soybean (DSb-19, JS-95-60, JS 335, Soya VL 79, RVS 2001-04)	Groundnut (ICGS-76)	Sesame (Chhibung, Tripura Siphing)	Rapeseed & Mustard (NRCHB-101, TS-57 & PM 30)
1	Manipur	13.22	13.86	-	9.43
2	Meghalaya	-	24.30	-	9.35
3	Mizoram	21.50	24.70	7.90	6.93
4	Nagaland	13.31	-	-	7.21
5	Tripura	-	16.50	8.17	10.69
Total		**16.01**	**19.84**	**8.04**	**8.72**

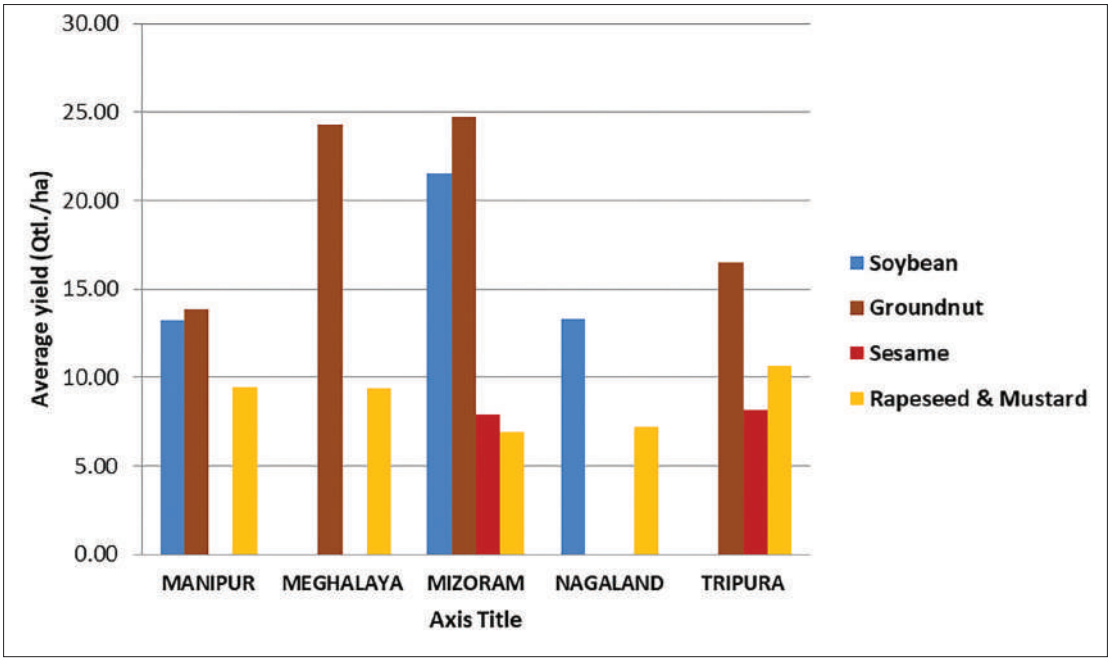

Fig 11: State-wise productivity of Oilseed crops under NMOOP during 2020-21

3.3. Farmer First Programme (FFP)

The Farmer FIRST project was conceived and implemented by ICAR so as to involve the practicing farmers for research problem identification, prioritization and to conduct experiments in farmers' field utilizing the resources available with the farmers. The focus is on farmer's Farm, Innovations, Resources, Science and Technology (FIRST). Two terms 'enriching knowledge' and 'integrating technology' qualify the meaning of Farmer FIRST in Indian context. Enriching knowledge signifies the need for the research system as well as farmers to learn from each other in context to existing farm environment, perception of each other and interactions with the sub-systems established around. Technology integration is looked from the perspective that the scientific outputs coming out from the research institutions, many times do not fit as such in the farmers' conditions and thus, certain alterations and adaptations are required at field level for their acceptance, adoption and success. 'Farmer FIRST' programme aims at enhancing farmer scientist interface for technology development and application. It will be achieved with focus on innovations, technology, feedback, multiple stakeholder's participation, multiple realities, multi method approaches, and vulnerability and livelihood interventions.

Module-wise achievements under FFP during 2020

Two projects are presently being implemented by Central Agricultural University, Imphal and ICAR RC for NEH Region, Umiam. The project interventions have been initiated in 2 villages of Imphal East district under CAU viz., Yairipok Top Chingtha and Yairipok Yambem and 10 villages of Ri Bhoi district under ICAR RC for NEH Region viz., Borgang, Sarikhusi Lalumpam, Purangang, Umtham, Borkhatsari, Nalapara, Nangagang, Mawphrew and Mawtnum. The achievements of the project during 2020 are highlighted below (**Table 54**).

1. **Crop based Module-** The interventions conducted during the year include Promotion of second cropping through dissemination of improved technologies (Raised and Sunken Bed) in rice fallow, Improved cultivation practices of Rabi season vegetables' quality seed production of Paddy Var. CAUR-1 & RC-Maniphou-13, Cultivation of Sweet corn (Var. Golden Cob F1) for higher profitability, Rice fallow cultivation of Rapeseed-Mustard. A total number of 182 farm families were benefited.
2. **Horticulture based module-** The interventions conducted during the year include Establishment of orchard of fruit, spices and plantation crops viz. khasi manadarin, guava, assam lemon, arecanut black pepper and Cultivation of arrow-head (*Sagittaria sagittifolia*) for additional income of the farmer. A total of 17 number of farm families were benefitted.

3. **Livestock based module-** The interventions conducted during the year include Backyard poultry rearing, Backyard pig rearing and Popularization of poultry breeds Srinidhi, Vanaraja under backyard poultry farming. A total number of 57 farm families were benefitted. One day Animal Health cum Mass vaccination programme was conducted where 470 numbers of animals were treated.

4. **Enterprise based module-** The interventions conducted during the year include Development of Pig Breeding Cluster in Village, Development of Automatic solar-operated mini egg incubator for Poultry Hatchery Unit, Oyster Mushroom Cultivation, Integration of scientific beekeeping. A total of 40 number of farm families were benefitted.

5. **NRM based module-** The interventions conducted during the year include Scientific cultivation of Mushroom and vermi-composting for income generation and Construction of low cost rain water harvesting structure, Jalkund with total number of 7 farm families were benefitted. A Programme on Mushroom day was conducted with 24 total number of participants and a training on Mushroom spawn production for women empowerment was conducted with 10 numbers of particpants.

6. **Fishery based module-** Under this module, 12850 numbers of fish fingerlings (Rohu, Mrigal, Grass Carp, Common carp, Silver carp, Catla etc.) were distributed benefitting a total number of 21 farm families.

7. **IFS Based Module-** Under this module, Ducklings (361 nos.), Assam Hill Goat (2 nos.) Fish fingerlings (2850 nos.) and Poultry chicks (1250 nos.) were distributed benefitting a total number of 8 farm families. 7 IFS models had been established in the villages under the project.

8. **Farm Mechanization based module:** Under this module, farm machineries like Power tiller, Brush cutter, Water pump, Adjustable row marker, Conoweeder, Manual trolley with single wheel, Multipurpose "U" blade weeder, etc. were allowed to use on custom hiring basis by farmers of all the adopted village for reduced cost of cultivation. More than 100 farmers have registered under the Marngar Custom Hiring Centre at Borkhatsari village. Around 200 farmers have been using the implements. Total revenue generated was Rs. 72,459. Fund was used for maintenance and repair of the tools and equipments.

Table 54: Achievements of FFP during 2020

Module Wise	CAU, Imphal		ICAR RC Complex, Umiam		Total	
	No. of Demos	No. of Beneficiaries	No. of Demos	No. of Beneficiaries	No. of Demos	No. of Beneficiaries
Crop Based Module	2	62	2	120	4	182
Horticulture Based Module	1	7	1	10	2	17
Livestock Based Module	2	25	1	32	3	57
Enterprise Based Module	-	-	4	40	4	40
NRM Based module	2	4	1	3	3	7
Fishery Based Module	1	5	1	16	2	21
IFS Based Module	1	5	3	3	4	8

Crop Based Module

Horticulture Based Module

3.4. Attracting and Retaining Youth in Agriculture (ARYA)

The prospects of agriculture in India are getting affected because of the youth shunning farming and migrating to cities in search of menial and non-farming jobs. To sustain food security, it is imperative to encourage farmers to continue with agriculture, wherein the rural youth have a crucial role to play. Retaining youth in agriculture and making agriculture more profitable is thus a big challenge. There is a continuous increase in migration of rural youth to urban areas and also, small-holdings poses big challenge in food security for increasing population. The only way of attracting them to agriculture is to turn farming into a profitable venture in rural areas. Thus, realizing the importance of rural youth in agricultural development especially from the point of view of food security of the country, ICAR has initiated a programme on "Attracting and Retaining Youth in Agriculture (ARYA)".

The project was implemented in 3 KVKs of the zone for providing benefits to the rural youth leading to better livelihood. The programme was mainly taken up to attract and empower the youth to take up various agriculture and allied service sector enterprises, as most of the educated rural youth tend to migrate to the cities searching for job. But, with the implementation of Project ARYA in three KVKs *viz.* Wokha (Nagaland), Lunglei (Mizoram) and

Poultry Hatchery Unit, Wokha

Gerbera Production unit, Wokha

Senapati (Manipur) under ICAR-ATARI, Umiam, the youth in the North-Eastern Region have started taking up agriculture and allied activities as a major profession for getting additional income and employment generation. Along with the already functional 3 KVKs, ARYA Project is being implemented in three additional KVKs *viz.* Jaintia Hills (Meghalaya), Tuensang (Nagaland) and Dhalai (Tripura).

Salient achievement during 2020

Location specific potential enterprises such as piggery, poultry, fisheries, mushroom cultivation, bee-keeping, Cut flower production, etc. were taken up by the KVKs under the project for the benefit of rural youth in their respective districts. During 2020-21, a total of 42 nos. of training programmes were conducted on different enterprises under the project by the 6 ARYA KVKs benefitting a total of 882 rural youth and established 114 different units of demonstrations. KVKs under the project also conducted 70 demonstrations for the benefit of 689 youth. The table given below depicts the enterprise-wise brief achievements of ARYA during 2020-21 (**Table 55**).

Fishery Unit, Senapati

Table 55: Achievements of ARYA programme by KVKs during 2020

Name of KVK	Name of enterprise/ Component	No. of units	Trainings		Demonstrations	
			No. of training	**No. of Participants**	**No. of demonstration**	**No. of Participants**
Lunglei	Piggery	5	3	60	2	40
	Poultry	5	3	60	2	40
	Mushroom	6	3	85	2	60
	Bee Keeping	5	3	90	2	50
	Vermi compost	5	3	70	2	45
	Protected cultivation	4	3	60	2	40
Senapati	Fishery	4	1	20	2	15
	Poultry	3	0	0	0	0
	Mushroom	3	0	0	2	12
Wokha	Piggery	5	2	45	2	45
	Poultry	4	2	45	2	45
	Mushroom	2	2	40	2	40
	Cut flower	1	2	30	2	30

Tuensang	Mushroom Cultivation	2	3	42	3	8
	Nursery raising of vegetables	2	1	15	1	12
	Off season Vegetable production	1	1	15	1	2
Jaintia Hills	Mushroom Production	5	1	25	1	25
	Vermicompost Unit	5	1	25	1	25
	Poultry Production	5	1	25	1	25
	Walk in tunnel for off season vegetables	5	1	25	1	25
Dhalai	Mushroom	10	2	50	10	50
	Vermicompost Unit	15	1	15	15	15
	Horticulture Nursery	2	1	10	2	10
	Piggery	10	2	30	10	30
	Total	**114**	**42**	**882**	**70**	**689**

3.5. New Extension Methodologies and Approaches (NEMA)

The ICAR sponsored new project- **"New Extension Methodologies and Approaches (NEMA)"** to generate data on adoption of selected improved technologies, the determinants of adoption, constraints and impact from a large pool of samples across the country for generalisation and drawing meaningful conclusion is conceived with the following objectives-

- To study the existing extension methodologies and develop new extension methodologies.
- To develop technology map for different agro-ecosystems.
- To study the extent and determinants of adoption of selected improved NARS technologies.
- To assess the impact of the technologies in different agro-ecosystems.
- To undertake yield gap analysis and suggest suitable strategies to reduce gap.

The important and popular technologies in agriculture and allied sectors in the zone have been identified and submitted to the council for consideration. The project is at the stage of formulation and finalisation of data collection instrumentsat national level. The core committee of scientists for implementation of the project has been constituted as per guidelines of the project, has been formed and submitted.

Achievements during 2020

During the year 2020-21, a total of 80 respondents both farmers and farm women were selected for the impact study of NRRI rice varieties in the two districts of Tripura namely, Sepahijala and South Tripura. It was noted that out of the 80 respondents, only 30 per cent of the farmers cultivated NRRI Varieties (Naveen and Pooja) and 70 per cent farmers cultivated other varieties like Gomati, Swarnamasuri, Hazari *etc.*(Fig 12). The total area under NRRI varieties is about 16.10 acre with an average yield of about 18.70 q/acre.

At present, eight (8) National network projects, namely Climate change, Gender and Nutrition, Residue Management, Doubling Farmers Income (DFI), Tribal Sub-Plan (TSP), Aspirational Districts, ARYA network project and Pulses Network Project are merged with the NEMA project with financial provision under different project for proper implementation of the project.

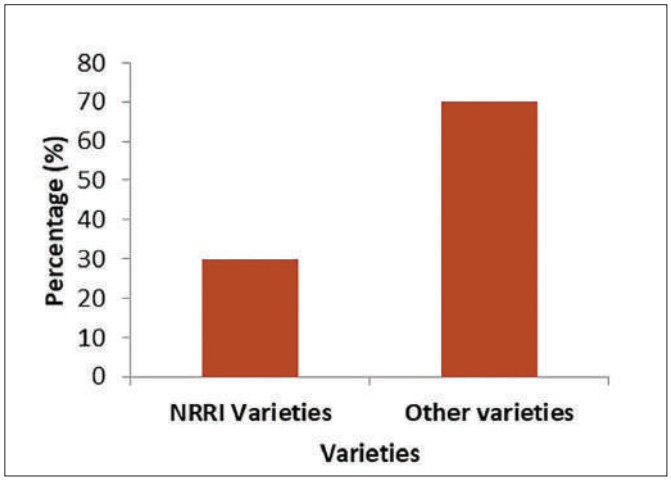

Fig 12: Percentage adoption of NRRI varieties

3.6. District Agro-Meteorology Unit (DAMU)

The Government of India has entrusted upon the India Meteorological Department (IMD) the task of establishing weather observing system and development of Gramin Krishi Mausam Sewa in the country. In pursuance hereof, IMD has set up in the country a network of about 130 Agro Meteorological Field Units (AMFUs) which are multidisciplinary units responsible for preparation and dissemination of district and sub-district agromet advisories. Under the Gramin Krishi Mausam Sewa, the IMD proposes to establish District AgroMet Units (DAMU) in 530 districts, in addition to already operating 130 AMFUs, in order to meet the said expansion. Among other responsibilities, DAMU will receive weather forecast from IMD to prepare and disseminate sub-district level agromet advisory bulletins. The Units and achievements of DAMU under ICAR-ATARI Zone VII are presented in **Table 56** and **Table 57**.

Objectives

1. To improvise the existing district level Agromet Advisory Services (AAS) so as to deliver crop and location specific AAS to farmers at block level.
2. To design optimum observatory network for issuance of village level advisoriesfor implementation of crop weather insurance.
3. To establish District Agromet Units as nodal centre for catering to needs of agricultureservices.
4. To provide customized advisory bulletins through last mile connectivity to farmers with personalized agromet advisory services.
5. To extend the weather based advisory service to the allied areas like livestock, grazing of farm feed etc.
6. To establish appropriate dissemination and support system for weather-based crop insurance in the country.

Table 56: The DAMU units under ICAR-ATARI Zone-VII during 2020

Sl. No.	State	KVKs
1	Manipur	Chandel
2	Meghalaya	West Garo Hills and West Khasi Hills
3	Mizoram	Mamit
4	Nagaland	Kiphire, Mokokchung
5	Tripura	Dhalai

Table 57: Achievements of DAMU KVKs during 2020

Name of KVK	No. of beneficiaries	No. of Advisories given	No. of Training organised							No. of Success story Published	No. of Advisories during lockdown period	Dissemination of Advisories
			Farmers		Farm Women		Rural Youth		Others			
			Nos.	No. of participants	Nos.	No. of participants	Nos.	No. of participants	Nos.			
Mamit	1249	217		0		0	0	0	0	2	120	540
Mokokchung	2988	887	5	179			1	12			202	398
Kiphire	4154	232		0		0		0	0	0	139	98
Chandel	2303	549	6	128	5	111	3	64	0	12	138	635
WGH												
WKH	188	632	1	242	1	170	1	91	5	0	512	645
Dhalai	5206	96	3	65	2	30	3	80	2	3	40	1718
Total	16088	2613	15	614	8	311	8	247	7	17	1151	4034

4.0 PUBLICATIONS

4.1 Books

- Deka, B.C., Singha, A.K., Parisa, D., Amrutha, T., Biswas, Pijush., Baishya, S.K., Sangtam, H.M., Debnath, B., Sharmah, D., Bal, B., Tariang, A.M., Wahlang, S., Nongrum, C., Kyndiah, E.K., Lyngdoh, A., Lyngdoh, L., Marak, M.R., Dkhar, D. and Hajong, S. Prospects of Northeast Agriculture in Post Covid 19 Scenario.
- Deka, B.C., Singha, A.K., Parisa, D., Mervin, A., Tariang, E., Kyndiah, K. and Marak, M.R. Integrated Farming System's for Doubling Farmers Income in NEH Region of India.

4.2 Technical Bulletins

- Singha, A.K., Tripathi, A.K., Deka, B.C., Parisa, D., Poswal, Randhir S., Adhiguru, P., Marak, M.R. and Wahlang, S. Youth Empowerment Under Attracting And Retaining Youth in Agriculture.
- Singha, A.K., Tripathi., A.K., Deka,B.C., Parisa, D., Amrutha, T., Tariang, A.M. Turning Over a New Leaf in Agriculture with NICRA eExperiences (2019-2020)
- Deka, B.C., Parisa, D., Amrutha, T., Devi, M.T., Deka, B.C., Tripathi, A.K., Chahal, V.P. and Nongrum,C. Pulse Production for Livelihood and Nutitional Security under Cluster Front Line Demonstration(CFLD) Programme (2019-2020)
- Singha, A.K., Tripathi, A.K., Chahal, V.P., Deka , B.C., Amrutha, T., Wahlang, S. and Marak, M.R. Sustainable Livelihood Development of Farmers through Farmer First programme

4.4 Other Reports

- Proceedings of Annual Zonal Workshop of KVKs under Zone VII
- Proceeding of Annual Action Plan Workshop of KVKs under Zone VII
- Compilation of information for report of CFLD project on Pulses and Oilseeds under ICAR-ATARI, Zone-VII.
- Compilation for report of NICRA project under ICAR-ATARI Zone VII
- Proceedings of 9th Institute Management Committee Meeting for ICAR- ATARI, Zone VII

5.0 PARTICIPATION IN MEETINGS AND WORKSHOPS

Participation in Meetings / Workshops

Dr. A.K.Singha

- Attended as a member of IMC of ICAR RC for NEH Region, Umiam for the period 2020-2023.
- Attended as Coordinator of Annual Action Plan Workshop of KVKs, Zone-VII for the year 2020 on 23-24 June, 2020 through online video conferencing.
- Attended as Coordinator of Annual Zonal Workshop of KVKs, Zone-VII for the year 2019 on 3-2 July, 2020 through online video conferencing.
- Participated Zonal Review Workshop of ARYA on 15th June, 2020 through online video conferencing.
- Participated National Annual Review Workshop of ARYA on 16th June, 2020 through online video conferencing.
- Participated National Annual Review Workshop of FFP on 17-18 June, 2020 through online video conferencing.
- Participated Review Workshop of NEMA on 20th June, 2020 through online video conferencing.
- Attended 92nd Foundation Day and Award Ceremony of ICAR on 16th July, 2020 through Video Conferencing.
- Attended Online Sensitisation workshop on Standardized Scheme process in ICAR-ERP on 24th July, 2020.
- Attended meeting for celebration of Poshan Abhiyan Maah on 8th September, 2020 through webinar.
- Attended Annual review cum action plan meeting of DAMU of KVKs on 8th September, 2020 through webinar.
- Attended as Nodal Officer the Annual review cum action plan workshop/ meeting of DAMU programme, Zone-VII, Umiam.
- Attended as Nodal Officer for "Online training programme on IPM in Agricultural and Horticultural Crops in NEH Region" for SMSs (PP) of KVKs during 29th September to 1st October, 2010.
- Attended as External Expert of Selection committee for the post of 2 Agro Associate and 1 post of Field Coordinator under the project-"Integration and Application of UAV for Crop Health Assessment and Monitoring with IIDS in providing Evidence based Advisory Services to Farmers of North East India" on 1st October, 2020 through online interview.
- Attended as a member of Selection committee for the post of Sr. Scientist & Head of KVK Khowai on 1st October, 2020 through online interview.
- Attended NEMA review meet to review the progress of the project of ATARI Zone- VII through online mode on 5th October, 2020.
- Attended IRC of ATARI Zone-VI & VII to discuss on research proposal through online mode on 5th October, 2020.
- Attended RAC of ATARI Zone-VI & VII to discuss on research proposal through online mode on 7th October, 2020.
- Attended 92nd Foundation Day of ICAR through online webcasted through ICAR website on 16//07/2020.
- Attended Webiner on KisanSarathi on 15/12/2020
- Attended Webiner for Curtain raiser ceremony for Agricultural Scientist Meet to be held in India International Science Congress (23-24 Dec 2020).
- Attended online meeting on Demonstration of MPR functionality in KVK Portal on 28/01/2021 at 10 AM.
- Attended Online MDP programme on "Priority Setting, Monitoring and Evaluation (PME) of Agricultural Research Projects" organized by ICAR-NAARM during 12-17 October, 2020.
- Attended SAC for KVK West Khasi Hills on 14th December, 2020.

- Attended SAC for KVK Toubal on 15-12.2010 through online.
- Attended SAC for KVK Churachandpur on 16-12.2010 through online mode.
- Attended SAC for KVK Sepahijala on 17-12.2010 through online mode.
- Attended SAC for KVK Jaintia Hills on 17-12.2010 through online mode.
- Attended SAC for KVK Ribhoi on 17-12.2010 through offline mode.
- Attended SAC for KVK East Garo Hills on 17-12.2010 through online mode.
- Attended SAC for KVK South Garo Hills on 18-12.2010 through online mode.
- Attended SAC for KVK Chandel on 18-12.2010 through online mode.
- Attended SAC for KVK Tamenglongl on 19-12-2010 through online mode.
- Attended SAC for KVK Aizawl on 19-12-2010 through online mode.
- Attended SAC for KVK Ukhrul on 21-12-2010 through online mode.
- Attended SAC for KVK Imphal East on 22-12-2010 through online mode.
- Attended as Special Guest in Inaugural programme of 1-day Hand on Training programme on Mass Production of Bio-Pesticides" organized by CPGS, CAU, Barapani on 22-01-2021.
- Attended as Chief Guest in Inaugural programme of 3-day Hand on Training programme on "Soil Health Card, Soil Sampling Procedure and Laboratory Analysis" organized by CPGS, CAU, Barapani on 18-02-2021.
- Visited FFP demonstration site at village implemented by ICAR RC for NEH Region on 25th February, 2021.
- Attended virtual Sensitisation Workshop on "Web-based survey for Technology Characterization and Suitability Mapping for Climate-Smart Agriculture", on 10th March, 2021.
- Attended Review workshop of CFLD on Pulses on 19-20 March, 2021 at CVSc, CAU, Khanapara.
- Attended webinar on World Water Day-2021 on 22nd March, 2021 organised by ICAR, New Delhi under the Hon'ble DG, ICAR.

Dr. R Bordoloi

- Attended National Citrus Meet 2020 organised by ICAR-CCRI Nagpur in collaboration with AAU Assam held at Biswanath College of Agriculture during Jan 10-12,2020.
- Attended National Conference of KVKs held at NASC New Delhi during 28/02/2020 to 01/03/2020
- Attended Soil Day organized by ATARI Zone VII in collaboration with KVK RiBhoi held at ICAR Research Complex for NEH Region Umiam on 19th Feb 2020.
- Attended the Certificate distribution ceremony in the *training programme on Friends of Coconut* organised by KVK Nalbari in association with Coconut Development Board regional office Guwahati held at Nalbari on 25 Jan 2020.MLA Nalbari Mr Ashok Dev Sharma was the Chief Guest in the programme.
- Attended an Online Training on establishing e-Office at ICAR Institutes on 01/05/2020.
- Attended a Video Conferencing Session held on 05/05/2020 on "ICT application in KVKs". DDG (AE), ADG (AE) ADG (ICT), Director of ATARIs, Head Computer Science IASRI were amongst Panelists.
- Attended an online meeting on "Strategy for Self Employment for migrant labourers" held on 30th May 2020 organised by DeenDayal Institute and ATARI Jabalpur.Hon,ble Union Minister for Agriculture and FW TomarJi, DDG (AE) DrA.K.Singh, DDG(Edu) were amongst the dignitaries.
- Attended online Review Meeting on NICRA TDC held on 12/06/2020. DDG (NRM) Dr S.L Choudhury Chaired the Meeting.
- Attended online Review meeting on ARYA Project held on 16th June 2020. Hon'ble DG ICAR, DDG (AE), ADG (AE), were dignitaries.Prepared the Proceedings for ATARI VI and sent to Council.
- Attended online review meeting on FFP Project on 17-18 June 2020.

- Attended ASCI Assessment Test of Trainees at KVK Kamrup on Job role Vermicomposting.
- Attended Online Review Meeting of QRT Team on 20th June 2020.Dr K.D Kokate DDG (AE) chaired the meeting. Director ATARI Barapani and ATARI Guwahati, Dr S.V Ngachan Ex Director ICAR NEH Region, Dr AK Vasisht former ADG, Dr. H.C. Bhattacharryya Ex DEE AAU Jorhat, Dr B.S. Hansra, Dr A.K Singha Pr Scientist (AE) ATARI Barapani and Member Secretary were present.
- Attended Online Review Workshop (22/06/2020) on the Project "New Extension Methodologies and Approaches (NEMA) .PI of the Project DrPadaria, all CO PI of ICAR Centers and ATARI participated in the Workshop.
- Attended a Webiner organized by ATMA on the theme "Trade and Commerce Ordinance and Farming Agreement Ordinance"
- Attended Online Review Workshop (29/06/2020) on the Project "New Extension Methodologies and Approaches (NEMA) "Chaired by DDG (AE) Dr.A.K.Singh .Presented achievement of ATARI Guwahati along with Dr. GAK Kumar Pr Scientist (AE) ICAR NRRI Cuttack.
- Attended 92nd Foundation Day of ICAR through online webcasted through ICAR website on 16//07/2020.
- Attended online Training on Framework of Treasury Single Account (TSA) system for Autonomous Bodies (AB) in PFMS on 17/07/2020.
- Attended Virtual Review Meeting for DAMU Project (2019-20) under ATARI VI Guwahati held on 23/07/2020. The inaugural session was chaired by ADG (AE) ICAR New Delhi Dr. Randhir Singhji. Other dignitaries were Dr Sanjay, O. Neil Shaw DDG (Meteorology) RMC Guwahati, Dr KK Singh Head, Agro Met Advisory Services Division IMD, Dr P.K.Pathak DEE AAU Jorhat, Dr. KripanGhosh Head IMD Pune, Dr Gopinath Raha, Head IMD Gangtok. Thirteen KVKs under Phase I presented their achievements.
- Attended Video Conferencing on 04/08/2020 (6.00 PM) with Hon,ble DG ICAR, DDG (AE), Joint Secretary Vivek Agarwal, All ATARI Directors, Heads of KVK regarding uploading 1-2 min Video on Farmers feedback regarding COVID 19 Lockdown period and PM KisanNidhi,s money, how was it utilized.
- Attended 3rd Annual Zonal Review Workshop of KVKs under ATARI Zone VI Guwahati from 8-9th Aug 2020. Inaugural Session was graced by Secretary DARE and DG ICAR Dr. Trilochan Mahapatra, DDG (AE) Dr A.K. Singh, ADG (AE) Dr. RandhirSingh, VC CAU DrPremgeetSingh, VC AAU Dr. A Bhattacharryyaa, ,DEE CAU Dr R Saha, DEE AAU Dr. P Pathak, All Directors of ATARI and ICAR Institues of NEH Region,Heads of KVK.46 KVKs presented their Annual Achievement in the Workshop.
- Attended online Meeting on "Inauguration of Administrative Building and Academic Block of CAU Jhansi "on 29/08/2020.Hon,ble PM of India NarendraModiji inaugurated the Building. All KVKs in the Zone participated in the programmealongwith farmers.
- Attended virtual meeting of TDC NICRA on 18/09/2020. DDG (NRM), DDG (AE), ADG (NRM), All Directors of ATARI, Director CRIDA, JNV Prasad Nodal Officer CRIDA present in the meeting. Discussion held on preparation of Video film of NICRA interventions, additional districts to be included etc.
- Attended Two days "National Level consultation on Principles and practices of Bharatiya Prakritik Krishi Paddhati (BPKP)–Natural Farming held under the Chairmanship of Vice Chairman NITI Aayog (29-30th Sept 2020)
- Attended VC on 08/10/2020 for NICRA KVKs discussion held on Video Production.
- Attended Virtual meeting of RAC for ATARI Jabalpur and ATARI Pune held on 12/10/2020
- Attended RAC Meeting of ICAR ATARI Jodhpur, Ludhiana and Kanpur held on 15/10/2020 and 16/10/2020 virtually.
- Attended Virtual Interface of KVKs with Directorate of Animal Husbandary and Veterinery, Govt. of Assam held on 28/10/2020. Dr KM Bujarbarua Former VC AAU Jorhat Chaired the meeting.Secretary and Director Deptt of AH and VetyGovt of Assam, Dr N Kalita Director Research (Vety), Dr. B Saikia Dean, CVSc Khanapara, Dr P Pathak DEE AAU JorhatDr S Rajkhowa Director NRC (P) Rani, all SMS (A SC) and Heads of KVK, DVO etc participated.

- Attended online meeting of Research Project Group on Aspirational District held on 02/11/2020.
- Attended online meeting of Research Project Group on "Nutri SMART Villages--"held on 03/11/2020.
- Attended special RAC meeting held on 6-7th Nov 2020 to finalize the national projects of ATARIs on thematic areas of Tribal studies, Aspirational district, Climate Change etc.
- Attended special RAC meeting held on 21th Nov 2020 to finalise the national projects (revised) on Tribal studies, DFI and Climate Change etc.
- Attended special RAC meeting held on 27th Nov 2020 to finalise the National projects (revised) on ARYA.
- Attended special RAC meeting held on 15th Dec 2020 to finalise the National projects (revised) on ARYA.
- Attended Webiner on Kisan Sarathi on 15/12/2020
- Attended Curtain raiser ceremony for Agricultural Scientist Meet to be held in India International Science Congress (23-24 Dec 2020)

Dr. Amrutha, T.

- Attended 110th FOCARS Training at ICAR-NARM, Hyderabad for three months on 7th Jan to 4th April 2020
- Attended Professional Attachment Trainig (PAT) at ICAR-IIHR, Bengaluru for three months from 27th May, 2020 to 26th August, 2020
- Attended Orientation Training in ICAR-ATARI Zone VII for one month from 5th April 2020 to 4th May 2020
- Attended online training programme on Capacity Building for Agricultural Policy Research conducted by ICAR-NIAP, New Delhi from 3rd to 9th December 2020.
- Attended IRC of ATARI Zone-VI & VII to discuss on research proposal through online mode on 5th October, 2020.
- Attended RAC of ATARI Zone-VI & VII to discuss on research proposal through online mode on 7th October, 2020.
- Attended 92nd Foundation Day of ICAR through online webcasted through ICAR website on 16//07/2020
- Attended Webiner for Curtain raiser ceremony for Agricultural Scientist Meet to be held in India International Science Congress (23-24 Dec 2020).

6.0 WORKSHOPS/ TRAINING AND CAPACITY BUILDING PROGRAMMES

The Agricultural Technology Application Research Institute (ATARI), Umiam Institute organized Annual Zonal Review Workshop (2019-20) cum Annual Action Plan 2021 of NICRA and attended a number of online Review meeting on the progress achieved under CFLD on pulses during kharif 2020 under NFSM and online meeting on national project on TSP during lockdown period. In the post-COVID scenario, the Institute organized one Group Meeting of CFLD pulses (2020-21) and two Annual Review Meeting of ARYA & FFP (2020-21) in collaboration with ICAR-ATARI, Zone VI, Guwahati to review the project activities of the KVKs. A three day Virtual Annual Zonal Workshop of KVKs for the year 2020 was organized to review the mandatory activities of the KVKs.

Table 56: Meetings/Workshops/ HRD programmes conducted during 2020-21

Sl. No.	Title/ Topic of the Programme	Date	Venue
1	Annual Zonal Review Workshop (2019-20) cum Annual Action Plan 2021of NICRA	27th June 2020	Online
2	Review meeting on the Progress achieved under CFLD onPulses during Kharif 2020 under NFSM	13.10.2020	Online
3	Online Meeting on National Project on TSP	25th Feb, 2021	Online
4	Group Meeting of CFLD Pulses (2020-21) in collaboration with ICAR-ATARI, Zone VI, Guwahati	19th-20th March 2021	Conference Hall, College of Veterinary Science, AAU, Khanapara, Assam
5	Annual Review Meeting of ARYA (2020-21) in collaboration with ICAR-ATARI, Zone VI, Guwahati	8th April, 2021	Training Hall, College of Veterinary Science, AAU, Khanapara, Assam
6	Annual Review Meeting of FFP (2020-21) in collaboration with ICAR-ATARI, Zone VI, Guwahati	9th April, 2021	Training Hall, College of Veterinary Science, AAU, Khanapara, Assam
7	Virtual Annual Zonal Workshop of KVKs for the year 2020	27th-29th July 2021	Online


Group Meeting of CFLD Pulses (2020-21); Annual Review Meeting of ARYA & FFP (2020-21)

7.0 PROMOTIONS/TRANSFERS

7.1 Promotions

Shri. Ashit Bishwas AF& AO, ICAR-ATARI joined as FAO at National Institute of Pharmaceutical Education and Research (NIPER), Guwahati on lien.

Dr. Bidyut Chandan Deka, Director of ICAR-ATARI Zone VII assumed charge of Vice Chancellor of Assam Agricultural University, Jorhat

8.0 PERSONNEL

I. Scientific	
Dr. A. K. Tripathi	Director (Acting)
Dr. A. K. Singha	Principal Scientist (Agricultural Extension)
Dr. R. Bordoloi	Principal Scientist (Agricultural Extension)
Mrs. Divya Parisa	Scientist (Vegetable Science)
Dr. Amrutha T.	Scientist (Agricultural Economics)
II. Technical	
Shri. J. Wahlang	Asst. Chief Technical Officer (ACTO)
Shri. K. K. Dutta	Driver (T-4)
III. Administration	
Mrs. A. Nongrum	PS to Director
Mrs. B. Syiem	Junior Stenographer
IV. Finance	
Mrs. A. Pyrtuh	Upper Division Clerk
V. Supporting	
Mrs. J. Lakhiat	Skilled Supporting Staff
Mrs. K. Kalita	Skilled Supporting Staff

7.0 PROMOTIONS/TRANSFERS

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Dr. R. Bordoloi	Principal Scientist (Agricultural Extension)
Mrs. Divya Parisa	Scientist (Vegetable Science)
Dr. Amrutha T.	Scientist (Agricultural Economics)
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