वार्षिक प्रतिवेदन
Annual Report
2022

भाकृअनुप-कृषि तकनीकी अनुप्रयोग अनुसंधान संस्थान (अटारी)

ICAR-Agricultural Technology Application Research Institute (ATARI)

Zone-X/क्षेत्र 10, क्रीडा परिसर/CRIDA Campus, संतोषनगर/Santoshnagar, हैदराबाद/Hyderabad - 500059

An ISO 9001:2015 Certified Institute

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Citation

ICAR-ATARI (Zone-X). Annual Report 2022. ICAR-Agricultural Technology Application Research Institute (ATARI), Hyderabad p 192.

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Printed at

Printography, Ranigunj, Secunderabad - 500 003.

Preface

I am excited to present the annual report 2022 of ICAR-ATARI, Hyderabad. This year, our Krishi Vigyan Kendras (KVKs) have achieved outstanding results in terms of technology assessment, demonstration, and training. We have also made significant progress in strengthening our agricultural extension research and knowledge management capabilities.

ICAR-Agricultural Technology Application Research Institute (ATARI), Hyderabad is mandated to coordinate and monitor the Technology application and frontline extension education programs of KVKs in Zone X comprising three states viz., Tamil Nadu, Andhra Pradesh and Telangana and an Union Territory, Puducherry. At present there are 75 sanctioned KVKs in the Zone including 32 in Tamil Nadu, 24 in Andhra Pradesh, 16 in Telangana and 3 in Puducherry. ATARI also has the responsibility of strengthening agricultural extension research and knowledge management.

Our KVKs have assessed a record number of technologies this year, including several new and innovative technologies. Through frontline demonstrations we could reach many farmers. During 2022, KVKs assessed 1,349 technologies through 4641 OFTs and conducted 11,959 Frontline demonstrations (FLDs) in farmers' fields, undertook 8355 training programmes covering 3,01,966 participants including farmers, farm women, rural youth, and extension functionaries. A total of 7,076 Cluster Frontline Demonstrations on pulses under NFSM were organized by 66 KVKs during 2022 covering an area of 3060 ha. Similarly, 6125 cluster frontline demonstrations covering 2450 ha were conducted under NFSM in oilseed crops by 45 KVKs during *kharif* and *rabi* 2022.

Twelve seed hub KVKs for pulses (6 in Tamil Nadu, 4 in Andhra Pradesh and 2 in Telangana) produced 2521.06 q of seed bolstering the efforts to bring quality pulse seeds to the doorsteps of farmers. Our KVKs also produced and supplied 13, 351 q of seed and 82.63 lakh saplings of elite material of field/horticultural crops, 317.33 q of bio-fertilizers, 7927.18 q of bio-inputs and 627.91 q of bio-pesticides. KVKs distributed 9.16 lakh livestock including cattle goat and sheep, poultry chicks and fish fingerlings to farmers.

We built the capacities with our focused, need based, demand driven training programs. During the year, our KVKs organized 8,355 training programmes covering 3,01,966 participants that include 1,99,740 farmers, 32,242 rural youth and 33,727 extension functionaries.

Skilling under Attracting Rural Youth in Agriculture (ARYA) project was done meticulously that resulted in benefiting 1,873 rural youth by establishing 283 enterprise units. The Farmer FIRST centers undertook 83 technology application interventions covering 4738 ha area and 6589 households in the operational villages. Under *Mera Gaon Mera Gaurav* (MGMG), which is implemented by 10 ICAR institutes in the zone, 306 villages were adopted by 66 teams of scientists where they organized 1154 activities which benefited 46, 332 farmers and rural people.

Through our state of art District Agro-met Units (DAMU), 40,156 block level and 2, 900 district level weather based advisory bulletins were prepared and disseminated through

digital and other channels. The KVKs organized 46207 extension activities with the participation of 2811713 farmers, farmwomen, and extension personnel for bringing awareness on latest technologies. A total of 43476 soil samples were analyzed by the KVKs that benefited 39333 farmers belonging to 7251 villages.

We acknowledge the contributions of Vice-Chancellors and Directors of Extension of SAUs and Directors of ICAR institutes in Zone-X for providing necessary technological backstopping to the KVKs. We are grateful to Dr. Himanshu Pathak, Secretary, DARE and Director General, ICAR and Dr. U.S. Gautam, DDG (AE) for their constant support, guidance, and encouragement.

I compliment all the Senior Scientists & Heads, and staff of KVKs in the Zone for their dedicated efforts towards implementation of the scheme and all my colleagues at ATARI for compiling the Annual Report.

I am confident that ATARI, Hyderabad and the KVKs will continue to play a leading role in agricultural development and farmers welfare. We are committed to working with farmers and other stakeholders to ensure that Indian agriculture is sustainable, profitable, and provides food, nutritional and income security for all.

Dr. Shaik N Meera
Director

कार्यकारी सारांश

इस वर्ष हमारे कृषि तकनीक अनुप्रयोग अनुसंधान संस्थान (अटारी) तथा कृषि विज्ञान केन्द्र (केविके) ने प्रौद्योगिकी मूल्यांकन, प्रदर्शन तथा प्रशिक्षण के मामलो में उल्लेखनीय उपलब्धि प्राप्त की है। कृषि तकनीक अनुप्रयोग अनुसंधान संस्थान (अटारी) ने हमारे कृषि विस्तार अनुसंधान तथा ज्ञान प्रबंधन क्षमताओं को बल प्रदान करने में भी महत्वपूर्ण प्रगति की है।

भाकृअनुप-कृषि तकनीक अनुप्रयोग अनुसंधान संस्थान (अटारी) हैदराबाद को अंचल-X के 72 कार्यरत कृषि विज्ञान केन्द्रों में जो कि आँध्र प्रदेश(23), तेलंगाना(16), तमिलनाडु(31) तथा केन्द्रशासित प्रदेश पुदुचेरी(2) में स्थित हैं, तकनीक अनुप्रयोग लागू करने में समन्वय का आदेश प्राप्त है।

प्रौद्योगिकी मूल्यांकन

प्रौद्योगिकी मूल्यांकन यह सुनिश्चित करने के लिए महत्वपूर्ण है कि व्यापक रूप से अपनाए जाने से पहले नई प्रौद्योगिकियाँ प्रभावी, कुशल, लाभदायक, स्थानीय संदर्भों के लिए उपयुक्त और सुरक्षित हों।

वर्ष के दौरान कृषि विज्ञान केन्द्रों ने 4641 खेतों में परीक्षण करते हुए 1349 तकनीकों का मूल्यांकन तथा इनको परिष्कृत किया। इन तकनीकी परीक्षणों में 984 तकनीकों का संबंध फसलों से, 188 का संबंध पशुओँ से तथा 58 तकनीकों का महिला सशक्तिकरण से है। फसलों के मामले में शामिल किए गए महत्वपूर्ण विषयगत क्षेत्रों में किस्म मूल्यांकन, फसल प्रणाली, समन्वित रोग प्रबंधन, समन्वित कीट प्रबंधन, समन्वित पोषक तत्व प्रबंधन, समन्वित खरपतवार प्रबंधन, समन्वित फसल प्रबंधन, संसाधन संरक्षण प्रौद्योगिकियाँ, कृषि मशीनरी और उपकरण शामिल थे। पशुओं के मामले में प्रजनन मूल्यांकन, रोग प्रबंधन, चारा और पोषण प्रबंधन और आश्रय प्रबंधन जैसे विषयगत क्षेत्रों का मूल्यांकन और परिष्कृत किया गया। ग्रामीण महिलाओं के सशक्तिकरण के तहत, विषयगत क्षेत्रों जैसे कठिन श्रम में कमी, स्वास्थ्य और पोषण, मूल्य संवर्धन और उद्यमिता विकास में खेत पर परीक्षण आयोजित किए गए।

तमिलनाडु के कृषि विज्ञान केंद्रों ने फसलों सहित बागवानी प्रजातियों (481), पशुओं (217) एवं ग्रामीण महिलाओं के सशक्तिकरण (50) पर, 1680 खेतों पर परीक्षण कर 563 प्रौद्योगिकियों की उपयुक्तता का मूल्यांकन किया। आंध्र प्रदेश के कृषि विज्ञान केंद्रों ने फसलों सहित बागवानी प्रजातियों (485), पशुओं (342) एवं ग्रामीण महिलाओं के सशक्तिकरण (420) पर, 1982 खेतों पर परीक्षण कर 547 प्रौद्योगिकियों की उपयुक्तता का मूल्यांकन किया। तेलंगाना के कृषि विज्ञान केंद्रों ने फसलों सहित बागवानी प्रजातियों (259), पशुओं (118) एवं ग्रामीण महिलाओं के सशक्तिकरण (41) पर, 904 खेतों पर परीक्षण कर 211 प्रौद्योगिकियों की उपयुक्तता का मूल्यांकन किया। पुदुचेरी के कृषि विज्ञान केंद्रों ने फसलों सहित बागवानी प्रजातियों (5), पशुओं (7) पर, 75 खेतों पर परीक्षण कर 28 प्रौद्योगिकियों का मूल्यांकन किया गया।

प्रौद्योगिकी प्रदर्शन

प्रौद्योगिकी प्रदर्शन किसानों तथा अन्य हितधारकों एवं नई तकनीकों का लाभ, कौनसी तकनीक को अपनाया जाए तत्संबंधी निर्णय की जानकारी से अवगत कराने में महत्वपूर्ण होता है।

अंचल-x में कृषि विज्ञान केन्द्रों ने 3130.56 हेक्टेयर क्षेत्र में फसलों (7430), जानवरों (2291) और कृषि उपकरणों (448) पर 11959 अग्रिम प्रदर्शन आयोजित किए। अनाज के 1470 प्रदर्शनों में से 1236 चावल पर थे। दलहन पर 851 प्रदर्शनों में से 440 उड़द के और 156 अरहर के थे। तिलहन में 526 प्रदर्शनों में से 396 मूंगफली के थे। वाणिज्यिक फसलों में 160 प्रदर्शन गन्ने के थे। तमिलनाडु में, 3403 प्रदर्शनों में से 739 अनाज पर और 554 सब्जियों पर थे। आंध्र प्रदेश में 2715 प्रदर्शनों में से 354 फलों पर, 406 सब्जियों पर, 270 बाजरा पर और 463 अनाज पर थे। तेलंगाना में 1187 प्रदर्शनों में से 424 सब्जियों में और 223 अनाज में थे। पुदुचेरी में, 125 प्रदर्शनों में से, 45 अनाज में, 20 सब्जियों में, 25 दलहनों में और 10 बाजरा में थे। क्षेत्र के कृषि विज्ञान केन्द्र ने पशुधन, कुक्कुट और मत्स्य पालन पर 2291 प्रदर्शन आयोजित किए, जिसमें 3526751 पशु, कुक्कुट पक्षी और मछली के बच्चे शामिल थे।

प्रशिक्षण

कृषि विज्ञान केन्द्रों द्वारा प्रशिक्षण किसानों तथा अन्य हितधारकों को कौशल एवं ज्ञान अर्जित करने की आवश्यकता को पूरा करने में सहायता प्रदान करने के लिए नए कृषि तकनीकों को प्रभावकारी तरीके से अपनाए जाने के लिए महत्वपूर्ण है।

प्रशिक्षण, कृषि विज्ञान केंद्रों की एक महत्वपूर्ण गतिविधि है, जो विभिन्न बेहतर तकनीकों के बारे में ज्ञान और कौशल को बढ़ाने में महत्वपूर्ण भूमिका निभाता है। वर्ष के दौरान अंचल-X में कृषि विज्ञान केंद्रों ने फसलों, डेअरी एवं अन्य उत्पादन एवं उत्पादकता में

वृद्धि करने के लिए कृषि एवं उससे संबंधित प्रौद्योगिकियों पर 8355 प्रशिक्षण कार्यक्रमों का आयोजन किया। जिसमें 199740 किसान एवं कृषि महिलाएं, 32783 ग्रामीण युवा एवं 32242 प्रसार अधिकारी को शामिल किया गया।

तमिलनाडु में कृषि विज्ञान केंद्रों ने कृषि महिलाओं, ग्रामीण युवाओं और प्रसार अधिकारियों सहित 13241 किसानों की भागीदारी के साथ 3992 प्रशिक्षण पाठ्यक्रम आयोजित किए, जबकि आंध्र प्रदेश के कृषि विज्ञान केंद्रों ने 73714 किसानों की भागीदारी के साथ 1941 प्रशिक्षण पाठ्यक्रम आयोजित किए, जिसमें किसान के साथ-साथ कृषि महिलाएं, ग्रामीण युवा और प्रसार अधिकारी शामिल हुए। तेलंगाना के कृषि विज्ञान केंद्रों ने 51269 लाभार्थियों के लिए 1332 पाठ्यक्रम संचालित किए। पुदुचेरी के कृषि विज्ञान केंद्रों ने 2541 लाभार्थियों के लिए 75 पाठ्यक्रम संचालित किए। प्रशिक्षण के अंतर्गत आने वाले मुख्य विषयगत क्षेत्रों में फसल उत्पादन, बागवानी, मृदा स्वास्थ्य और उर्वरता प्रबंधन, पशुधन उत्पादन और प्रबंधन, गृह विज्ञान / महिला सशक्तीकरण, कृषि अभियांत्रिकी, पादप संरक्षण, मत्स्य पालन, क्षमता निर्माण और सामूहिक शक्ति, कृषि-वानिकी आदि शामिल हैं।

अंचल-X के कृषि विज्ञान केंद्रों ने 30546 किसानों और कृषि कार्य में शामिल महिलाओँ और ग्रामीण युवाओं को शामिल करते हुए 763 प्रायोजित प्रशिक्षण कार्यक्रम आयोजित किए। उद्यमिता विकास, आय सृजन और स्वरोजगार की सुविधा के लिए, विशेष रूप से 6655 ग्रामीण युवाओं और स्कूल बीच में छोड़ने वाले जैसे लोगों के लाभ लिए, कृषि विज्ञान केंद्रों ने 252 व्यावसायिक प्रशिक्षण कार्यक्रम आयोजित किए। इसमें शामिल किए गए महत्वपूर्ण विषयगत क्षेत्रों में फसल उत्पादन और प्रबंधन, कटाई के बाद की तकनीक और मूल्य संवर्धन, पशुधन और मत्स्य पालन और आय सृजन की गतिविधियां हैं।

प्रौद्योगिकी विस्तार

प्रौद्योगिकी विस्तार एक सतत प्रक्रिया है । यह किसानों तथा अन्य हितधारकों की आवश्यकताओं तक सतत रूप से पहँचते रहने तथा प्रौद्योगिकी विस्तार प्रक्रिया को अपनाने जाने के लिए जागरुकता पैदा करने में महत्वपूर्ण है ।

बेहतर प्रौद्योगिकियों के बारे में जागरूकता पैदा करने के लिए अंचल-x में कृषि विज्ञान केन्द्रों ने 2811713 किसानों, कृषक महिलाओं और विस्तार कर्मियों की भागीदारी के साथ 46207 विस्तार गतिविधियों का आयोजन किया। विस्तार गतिविधियों में सलाहकार सेवाएँ, एक्सपोज़र विजिट, पशु स्वास्थ्य शिविर, प्रौद्योगिकी सप्ताह, समूह चर्चा, विधि प्रदर्शन, मृदा स्वास्थ्य शिविर, किसान मेले, किसान गोष्ठी आदि शामिल थे। बेहतर कृषि प्रौद्योगिकियों पर जानकारी के तेजी से प्रसार में गति लाने के लिए, अंचल-x में कृषि विज्ञान केन्द्रों ने 6955 प्रकाशन जारी किए ।

संस्थागत संसाधनों तक किसानों की सीधी पहुंच की सुविधा के लिए, भाकृअनुप ने विभिन्न प्रौद्योगिकी उत्पादों की एकल खिड़की वितरण के उद्देश्य से अंचल-X में तीन कृषि प्रौद्योगिकी सूचना केंद्रों की स्थापना की। वर्ष के दौरान कुल 11583 किसानों ने नवीनतम तकनीकी जानकारी जानने और महत्वपूर्ण प्रौद्योगिकी उत्पादों अर्थात बीज और रोपण सामग्री प्राप्त करने के लिए तीन एटीआईसी का दौरा किया।

परीक्षण सेवाएँ तथा महत्वपूर्ण निवेशों की आपूर्ति

उच्च फसल उपज और उत्पादकता सुनिश्चित करने के लिए गुणवत्तापूर्ण बीज रोपण सामग्री आवश्यक है।

कृषि विज्ञान केंद्रों ने मृदा की पोषक स्थिति का पता लगाने और जिले में मौजूदा सूक्ष्म कृषि स्थितियों में किसानों को मृदा परीक्षण आधारित पोषक सिफारिशें देने के लिए मृदा और जल परीक्षण किया। कृषि विज्ञान केंद्रों द्वारा मृदा के 37924 नमूनों, पानी के 5124 नमूनों, पौधों के 200 नमूनों और उर्वरकों / खादों के 109 नमूनों सहित कुल 43476 नमूनों का विश्लेषण किया गया, जिससे तमिलनाडु, आंध्र प्रदेश, तेलंगाना और पुदुचेरी के 7251 गांवों के 39333 किसानों को लाभ हुआ।

कृषि विज्ञान केंद्रों ने 13351 क्विंटल बीज और 82.63 लाख पौधों का उत्पादन और आपूर्ति की। दलहन के लिए बारह बीज केंद्र केवीके (तमिलनाडु में 6, आंध्र प्रदेश में 4 और तेलंगाना में 2) ने किसानों को गुणवत्ता वाले बीज की आपूर्ति के लिए 2521.08 बीज (मूंग, उड़द, लाल चना और बंगाल चना) का उत्पादन किया। केवीके ने 317.33 क्विंटल बीज का उत्पादन और आपूर्ति भी की। जैव-उर्वरक, 7927.30 क्विंटल जैव इनपुट और 627.91 क्विंटल जैव-कीटनाशक। केवीके ने किसानों को मवेशी बकरी और भेड़, पोल्ट्री चूजों और मछली के बच्चों सहित 9.16 लाख पशुधन सामग्री वितरित की।

कृषि विज्ञान केन्द्र के मानव संसाधन विकास कार्मिक

यह सुनिश्चित करने के लिए कि कृषि विज्ञान केन्द्र के कार्मिकों के पास प्रभावी ढंग से सेवाएं प्रदान करने और कृषि विज्ञान केन्द्रों को आधुनिक बनाने के लिए आवश्यक ज्ञान, कौशल और दृष्टिकोण आवश्यक है ।

एसएयू और अटारी के विस्तार शिक्षा निदेशालयों ने प्रशिक्षण, सेमिनार, कार्यशालाओं आदि के माध्यम से कृषि विज्ञान केन्द्रों के वैज्ञानिकों को प्रौद्योगिकी बैकस्टॉपिंग और मानव संसाधन विकास की सुविधा प्रदान की। क्षेत्र में 5232 कृषि विज्ञान केन्द्रों के कर्मचारियों को लाभ पहुंचाने वाली कुल 64 मानव संसाधन विकास गतिविधियां विस्तार के तीन निदेशालयों द्वारा संयुक्त रूप से आयोजित की गई।

राष्ट्रीय जलवायु समुत्थान कृषि में नवप्रवर्तन (निक्रा)

राष्ट्रीय जलवायु समुत्थान कृषि में नवप्रवर्तन (निक्रा) कृषि विज्ञान केन्द्रों की उपलब्धियां इन कृषि विज्ञान केनद्रों के कर्मचारियों की कड़ी परीश्रम और समर्पण का प्रमाण हैं। उन्होंने किसानों और अन्य हितधारकों के जीवन में वास्तविक बदलाव लाया है। भारतीय कृषि को अधिक जलवायु समुत्थान की दिशा में एक कदम है।

अंचल-x में निक्रा परियोजना के प्रौद्योगिकी प्रदर्शन घटक के तहत, 8 कृषि विज्ञान केन्द्रों ने तीन राज्यों में जलवायु समुत्थान कृषि प्रौद्योगिकियों और प्रक्रियाओं का प्रदर्शन किया। परियोजना के तहत, प्राकृतिक संसाधन प्रबंधन हस्तक्षेप के तहत 333.68 हेक्टेयर में प्रदर्शन आयोजित किए गए जिससे 1396 किसानों को लाभ हुआ। फसल उत्पादन मॉड्यूल के तहत, 2063 किसानों को शामिल करते हुए 1176.90 हेक्टेयर क्षेत्र पर प्रदर्शन किए गए। पशुधन और मत्स्य पालन हस्तक्षेप के तहत, 25.20 हेक्टेयर क्षेत्र में बेहतर चारा उत्पादन से 683 किसान लाभान्वित हुए। कस्टम हायरिंग सेंटर, चारा बैंक और बीज बैंक जैसे संस्थागत हस्तक्षेपों के तहत 476 किसानों को लाभ हुआ। क्षमता निर्माण और विस्तार गतिविधियों के माध्यम से, जलवायु समुत्थान प्रौद्योगिकियों पर जागरूकता लाई गई जिससे क्रमशः 66 और 123 गतिविधियों के माध्यम से 2534 और 3776 किसानों को लाभ हुआ।

कृषि में युवाओं को आकर्षित करना तथा उन्हें इसमें बनाए रखना (आर्या)

भारतीय कृषि के बेहतर भविष्य बनाने के लिए युवाओँ को सशक्त करना, आर्या- जहाँ युवाओं के सपने कृषि की आवश्यकताओं को पूरा करते हैं।

क्षेत्र के दस कृषि विज्ञान केंद्रों (तमिलनाडु में 4, आंध्र प्रदेश में 3, तेलंगाना में 2 और पांडिचेरी में एक) द्वारा आर्या परियोजना कार्यान्वित की गई। परियोजना के तहत उद्यम इकाइयों की स्थापना के लिए 92 प्रशिक्षण कार्यक्रमों के माध्यम से 1873 ग्रामीण युवाओं को कौशल प्रशिक्षण प्रदान किया गया। जीविकापार्जन सुरक्षा को सुनिश्चित करने एवं 2022 ग्रामीण युवाओं को लाभ पहुंचाने के लिए वर्ष 2022 के दौरान 283 उद्यम इकाइयों को स्थापित किया गया।

किसान प्रथम परियोजना

किसान प्रथमः कृषि के सतत् भविष्य बनाए रखने के लिए किसानों को आगे रखना, किसानों को अपने भविष्य निर्माण में उन्हें सशक्त बनाने का उपाय करना।

भाकृअनुप के चार संस्थानों और एक विश्वविद्यालय ने किसान पहले परियोजना को लागू किया। किसान पहले केंद्रों ने 4738 हेक्टेयर क्षेत्र और परिचालन गांवों में 6589 घरों को कवर करते हुए 83 हस्तक्षेप किए। 2094 हेक्टेयर में 29 फसल-आधारित प्रौद्योगिकियों का प्रदर्शन किया गया, जिससे 1769 परिवारों को लाभ हुआ। 154 हेक्टेयर में 7 प्रौद्योगिकियों पर बागवानी हस्तक्षेप का प्रदर्शन किया गया, जिससे 475 परिवारों को लाभ हुआ। पशुधन मापांक मॉड्यूल में, 7775 पशुओं को शामिल करते हुए 33 प्रौद्योगिकियों का प्रदर्शन किया गया, जिससे 1935 घरों को लाभ हुआ। 2490 हेक्टेयर में 12 प्राकृतिक संसाधन प्रबंधन प्रौद्योगिकियों का प्रदर्शन किया गया, जिससे 2190 परिवार लाभान्वित हुए। 220 परिवारों के लाभ के लिए दो उद्यम स्थापित किए गए।

जिला कृषि मौसम विज्ञान की इकाईयाँ

किसानों को उनकी फसलों के बारे में जानकारी से संबंधित निर्णय लेने में सहायता करना। बेहतर कल के लिए आज के मौसम की जानकारी देना।

ग्रामीण कृषि मौसम सेवा (जीकेएमएस) के तहत किसानों को कृषि मौसम संबंधी सलाह जारी करने और प्रसारित करने के लिए आईएमडी के सहयोग से 28 जिला कृषि मौसम इकाइयां (डीएएमयू) स्थापित की गईं (आंध्र प्रदेश में 9 तेलंगाना में 8, तमिलनाडु में 10 और पुदुचेरी में एक)। उप-जिला स्तरीय- कुल 40156 ब्लॉक स्तरीय बुलेटिन और 2900 जिला स्तरीय बुलेटिन तैयार किए गए और विभिन्न माध्यमों से मौसम संबंधी सलाह प्रसारित की गई। मौसम पूर्वानुमान और मौसम आधारित कृषि सलाह, लाभ और अप्रत्याशित घटनाओं के कारण संभावित नुकसान से बचने के बारे में जागरूकता पैदा करने के लिए प्रशिक्षण, किसान गोष्ठी आदि जैसे विभिन्न कार्यक्रम आयोजित किए जाते हैं। भाकृअनुप-अटारी, अंचल-X में वर्ष 2022 के दौरान लगभग 18000 किसानों और कृषक महिलाओं की भागीदारी के साथ लगभग 370 ऐसे कार्यक्रम आयोजित किए गए। कृषि विज्ञान केन्द्र द्वारा किसानों को भेजी गई कृषि सलाह की सटीकता और उपयोगिता का आकलन करने के लिए फीडबैक और प्रभाव अध्ययन करते हैं।

अंचल-X के कृषि विज्ञान केन्द्रों द्वारा लगभग 50 फीडबैक अध्ययन और 45 प्रभाव अध्ययन आयोजित किए गए।

दलहन तथा तिलहन पर अग्रिम समूह प्रदर्शन

दलहन तथा तिलहन के भविष्य को आगे बढ़ाना, भारतीय दलहन तथा तिलहन को वैश्विक स्तर पर लानाः

वर्ष 2022 के दौरान अंचल-x के 66 कृषि विज्ञान केन्द्रों द्वारा राष्ट्रीय खाद्य सुरक्षा मिशन के तहत तीनों मौसमों में तमिलनाडु, आंध्र प्रदेश, तेलंगाना और पुदुचेरी में समूह अग्रिम प्रदर्शन आयोजित किए गए।

दलहन के तहत 3060 हेक्टेयर क्षेत्र को कवर करते हुए कुल 7076 प्रदर्शन आयोजित किए गए। इसी प्रकार, वर्ष 2022 के दौरान खरीफ और रबी के मौसमों में 45 कृषि विज्ञान केन्द्रों द्वारा राष्ट्रीय खाद्य सुरक्षा मिशन के तहत तिलहन फसलों में 2450 हेक्टेयर को कवर करने वाले 6125 समूह अग्रिम प्रदर्शन आयोजित किए गए। एफएलडी में प्राप्त दलहन और तिलहन की उत्पादकता जिला/राज्य औसत से अधिक रही जो उपज अंतर को पाटने की क्षमता का संकेत देती है।

जनजाति उप योजना (टीएसपी)

आदिवासी किसानों को उनकी पूरी क्षमता प्राप्त करने के लिए सशक्त बनाना। लेकिन एक समय पर एक कदम बढ़ाना।

जनजातीय समुदायों की सामाजिक-आर्थिक स्थितियों में सुधार लाने के उद्देश्य से जनजातीय उपयोजना (टीएसपी) को क्षेत्र में 16 कृषि विज्ञान केन्द्रों द्वारा (आंध्र प्रदेश में 7, तेलंगाना में 7 और तमिलनाडु में 2) कार्यान्वित किया गया और 9244 परिसंपत्तियों/सुक्ष्म उद्यमों के निर्माण की सुविधा प्रदान की गई। उद्यमों और 3326 आदिवासियों को आय सृजन के अवसर प्रदान किए गए। 1424 लाभार्थियों को कौशल विकास प्रशिक्षण (46) प्रदान किया गया।

किसान सारथी

किसान सारथी किसानों का मित्र है जो उनकी सफलता के लिए मार्गदर्शन करता है।

कृषि तकनीक अनुप्रयोग अनुसंधान संस्थान (अटारी)-हैदराबाद ने कुल 71 कृषि विज्ञान केन्द्रों को शामिल करते हुए जिनमें डीएएटीटी के 13 केन्द्र हैं जिनमें 909894 किसानों ने जिसमें आँध्र प्रदेश कृषि विज्ञान केन्द्र (358217), तमिलनाडु (288915), तेलंगाना (259818), पुदुचेरी (2944) के किसान शामिल हैं किसान सारथी कार्यक्रम का आयोजन किया। कृषि तथा संबंधित क्षेत्रों में वैज्ञानिकों से व्यक्तिगत सलाह प्राप्त करने के उद्देश्य से इन किसानों ने अपने-अपनें कृषि विज्ञान केन्द्रों के पोर्टल पर पंजीकरण करवाया।

लाभदायक डेयरी खेती पर क्षमता निर्माण

डेयरी खेती को आसान बनाया गयाः लाभदायक डेयरी खेती से संबंधित क्षमता का निर्माण।

वर्ष 2022 में आँध्र प्रदेश के दो कृषि विज्ञान केन्द्रों तथा पुदुचेरी के एक कृषि विज्ञान केन्द्र ने इस परियोजना को लागू किया। कृषि विज्ञान केन्द्रों ने 329 किसानों को लाभ पहँचाते हुए डेयरी खेती तथा अन्य पशुधन के उन्त प्रबंधन अपनाए जाने के संबंध में जागरुकता पैदा करने के उद्देश्य से 8 प्रशिक्षण कार्यक्रमों का आयोजन किया।

स्वच्छता ही सेवा

एक स्वच्छ तथा स्वस्थ भारत, एक समय पर एक ही खेत। एक स्वस्थ खेत ही एक खुशहाल खेत।

स्वच्छता को बढ़ावा देने के लिए भाकृअनुप-अटारी, हैदराबाद स्वच्छ भारत अभियान चला रहा है। क्षेत्र के कृषि विज्ञान केन्द्र प्रति माह विभिन्न कार्यक्रमों का आयोजन कर रहे हैं। वर्ष 2022 के दौरान अंचल-x के कषि विज्ञान केन्द्रों ने ग्रामीण क्षेत्रों के 46198 लोगों को शामिल करते हुए इन गतिविधियों का आयोजन किया। अक्तूबर 2022-23 के दौरान माह में प्रतिदिन इन गतिविधियों का आयोजन करते हुए विशेष अभियान चलाया गया। इसी दौरान 41983 लोगों को जिनमें 21561 किसान, 11333 छात्र-छात्राएँ, 7496 कार्मिक सदस्य, 883 गणमान्य सदस्य तथा 799 नागरिक समाज के सदस्य शामिल हैं, इन स्वच्छता गतिविधियों का आयोजन किया गया।

मेरा गाँव मेरा गौरव

मेरा गाँव मेरा गौरवः हमारे गाँवों पर गर्व का अनुभव करते हुए तथा उनके भविष्य के लिए आओ अपने गाँवों पर गर्व करें।

मेरा गाँव मेरा गौरव के अन्तर्गत जिसको इस अंचल में भाकृअनुप के 10 संस्थानों ने लागू किया, वैज्ञानिकों की 66 टीमों नें 306 गाँवों को गोद लिया तथा 1154 गतिविधियाँ चलाई जिनसे 46332 किसानों तथा ग्रामीण लोग लाभान्वित हुए।

Executive Summary

This year, our ATARI and the Krishi Vigyan Kendras (KVKs) have achieved outstanding results in terms of technology assessment, demonstration, and training. ATARI has also made significant progress in strengthening our agricultural extension research and knowledge management capabilities.

ICAR- ATARI, Hyderabad has the mandate of coordinating technology application interventions of 72 functional KVKs located in Zone-X comprising the states of Andhra Pradesh (23 KVKs), Telangana (16 KVKs), Tamil Nadu (31 KVKs), and the union territory of Puducherry (2 KVKs).

Technology Assessment

Technology assessment is important to ensure that new technologies are effective, efficient, profitable, suitable to the local contexts and safe before they are widely adopted.

During the year, KVKs assessed and refined 1349 technologies by laying out 4641 On-Farm Trials. Of these technologies tested, 984 technologies are related to crops, 188 are related to animals and 58 are related to women empowerment. The important thematic areas covered in case of crops include varietal evaluation, cropping systems, integrated disease management, integrated pest management, integrated nutrient management, integrated weed management, integrated crop management, resource conservation technologies, farm machinery and equipment. In case of animals, thematic areas such as breed evaluation, disease management, feed and nutrition management and shelter management are assessed and refined. Under the empowerment of rural women, on-farm trials were conducted in thematic areas *viz.*, drudgery reduction, health and nutrition, value addition and entrepreneurship development.

KVKs in Tamil Nadu assessed the suitability of 563 technologies by conducting 1680 OFTs covering crops including horticultural species (481), animals (217) and empowerment of rural women (50). KVKs in Andhra Pradesh, assessed the suitability of 547 technologies by conducting 1982 OFTs covering crops including horticultural species (485), animals (342) and empowerment of rural women (420). KVKs in Telangana, assessed the suitability of 211 technologies by conducting 904 OFTs covering crops including horticultural species (259), animals (118) and empowerment of rural women (41). KVKs in Puducherry, assessed 28 technologies by organizing 75 OFTs that include crops including horticultural species (5) and animals (7).

Technology demonstrations

Technology demonstrations are important to showcase the benefits of new technologies to farmers and other stakeholders, and to help them make informed decisions about which technologies to adopt.

KVKs in Zone X conducted 11959 frontline demonstrations on crops (7430), animals (2291) and farm implements (448) in an area of 3130.56 ha. Among the 1470 demonstrations in cereals, 1236 were on rice. Among the 851 demonstrations on pulses, 440 were in blackgram and 156 in redgram. Among 526 demonstrations in oilseeds, 396 were in groundnut. In commercial crops 160 demonstrations were in sugarcane.

In Tamil Nadu, out of 3403 demonstrations, 739 were in cereals and 554 in vegetables. In Andhra Pradesh out of 2715 demonstrations, 354 were in fruits, 406 on vegetables, 270 in millets and 463 in cereals. Out of 1187 demonstrations in Telangana, 424 were in vegetables and 223 in cereals. In Puducherry, out of 125 demonstrations, 45 were in cereals, 20 in vegetables, 25 in pulses and 10 in millets. KVKs of the zone conducted 2291 demonstrations on livestock, poultry and fisheries involving 3526751 animals, poultry birds and fish fingerlings.

Trainings

Training by KVKs is important to help farmers and other stakeholders acquire the skills and knowledge they need to adopt and use new agricultural technologies effectively.

Training is an important mandated activity of KVKs, which plays an important role in enhancing the knowledge and skill about various improved technologies. During the year, KVKs in Zone-X organized 8355 training programmes covering 301966 participants that include 199740 farmers, 32783 rural youth and 32242 extension functionaries.

KVKs in Tamil Nadu, organized 3992 training courses with a participation of 131241 farmers including farmwomen, rural youth and extension functionaries, while KVKs in Andhra Pradesh organized 1941 training courses with a participation of 73714 farmers including farmwomen, rural youth and extension functionaries. KVKs in Telangana conducted 1332 courses for 57269 beneficiaries. KVKs in Puducherry, conducted 75 courses for 2541 beneficiaries. The main thematic areas covered under training include crop production, horticulture, soil health and fertility management, livestock production and management, home science/women empowerment, agricultural engineering, plant protection, fisheries, capacity building and group dynamics, agro-forestry *etc*.

KVKs in Zone-X also organized 763 sponsored training programmes covering 30546 farmers and farmwomen and rural youth. In order to facilitate entrepreneurship development, income generation and self-employment, especially among rural youth and school dropouts, KVKs organized 252 vocational training programmes for 6655 beneficiaries. The important thematic areas include crop production and management, post-harvest technology and value addition, livestock and fisheries, income generation activities *etc*.

Technology dissemination

Technology dissemination is a continuous process. It is important to continuously assess the needs of farmers and other stakeholders, and generate awareness, to adapt the technology dissemination process accordingly.

To create awareness on improved technologies the KVKs in Zone-X organized 46207 extension activities with the participation of 2898883 farmers, farmwomen and extension personnel. The extension activities included advisory services, exposure visits, animal health camps, technology week, group discussions, method demonstrations, soil health camps, *kisan melas*, *kisan ghostis etc*. To accelerate rapid dissemination of information on improved farm technologies, KVKs in Zone-X brought out 6955 publications.

To facilitate direct access of farmers to institutional resources, ICAR established three Agricultural Technology Information Centers in Zone-X with the objective of single window delivery of various technology products. During the year a total of 11583 farmers visited the three ATICs to know the latest technology information and to obtain critical technology products *viz*., seed and planting material.

Testing services and supply of critical inputs

Quality seed planting material is essential for ensuring high crop yields and productivity.

KVKs undertook soil and water testing to ascertain the soil nutrient status and also to make soil test based nutrient recommendations to farmers in the prevailing micro-farming situations in the district. A total of 43476 samples including 37924 soil samples, 5124 water samples, 200 plant samples and 109 fertilizers/manures were analyzed by the KVKs that benefited 39333 farmers belonging to 7251 villages in Tamil Nadu, Andhra Pradesh, Telangana and Puducherry.

KVKs produced and supplied 13351 q of seed and 82.63 lakh saplings of elite material of field/ horticultural crops. Twelve seed hub KVKs for pulses (6 in Tamil Nadu, 4 in Andhra Pradesh and 2 in Telangana produced 2521.08 of seed (greengram, blackgram, redgram and Bengal gram) for supply of quality seed to farmers. KVKs also produced and supplied 317.33 q of bio-fertilizers, 7927.30 q of bio inputs and 627.91 q of bio-pesticides. KVKs distributed 9.16 lakh livestock materials including cattle goat and sheep, poultry chicks and fish fingerlings to farmers.

HRD of KVK personnel

This is essential for ensuring that they have the knowledge, skills, and attitude necessary to effectively deliver services and modernize the KVKs.

Directorates of Extension Education of SAUs and ATARI facilitated technology backstopping and Human Resources Development to KVK scientists through trainings, seminars, workshops *etc*. A total of 64 HRD activities benefitting 5232 KVK staff in the Zone were jointly organized by the three directorates of extension.

National Innovations in Climate Resilience Agriculture (NICRA)

The achievements of NICRA KVKs are a testament to the hard work and dedication of the staff at these KVKs. They have made a real difference in the lives of farmers and other stakeholders. One step towards making Indian agriculture more climate resilient.

Under Technology demonstration component of NICRA project in Zone-X, eight KVKs demonstrated climate resilient agricultural technologies and practices across the three states. Under the project, demonstrations were organized in 333.68 ha benefiting 1396 farmers under NRM interventions. Under crop production module, demonstrations were taken up on 1176.90 ha area covering 2063 farmers. Under livestock and fisheries interventions, 683 farmers benefited from improved fodder production covering 25.20 ha. Under institutional interventions like custom hiring center, fodder bank and seed bank 476 farmers benefited. Through capacity building and extension activities, awareness on climate resilient technologies was brought about benefitting 2534 and 3776 farmers through 66 and 123 activities respectively.

Attracting and Retaining Youth in Agriculture (ARYA)

Empowering youth to build a better future for Indian agriculture. ARYA - Where dreams of youth meet the needs of agriculture.

ARYA project was implemented by 10 KVKs of the Zone (4 in Tamil Nadu, 3 in Andhra Pradesh, 2 in Telangana and one in Puducherry). Skill training was imparted to 1873 rural youth through 92 training programmes for establishing enterprise units under the project. Enterprise units numbering 283 were established benefiting 612 rural youth during 2022 ensuring livelihood security.

Farmer FIRST Project (FFP)

Farmer FIRST: Putting farmers first to build a sustainable future for agriculture. Idea is to empower farmers to take charge of their own future.

Four ICAR Institutes (IIMR, IIOPR, IIOR and CRIDA) and one University (TANUVAS) implemented the Farmer FIRST project. The Farmer FIRST centers undertook 83 interventions covering 4738 ha area and 6589 households in the operational villages. Twenty nine crop-based technologies were demonstrated in 2094 ha benefiting 1769 households. Horticultural interventions on 7 technologies were demonstrated in 154 ha benefiting 475 households. In livestock module, 33 technologies were demonstrated involving 7775 animals benefiting 1935 households. Twelve NRM technologies were demonstrated in 2490 ha benefiting 2190 households. Two enterprises were established for the benefit of 220 households.

District Agro Met Units (DAMU)

Helping farmers to make informed decisions about their crops. Today's weather information for a better tomorrow

Under Gramin Krishi Mausam Seva (GKMS) 28 District Agro Met Units (DAMUs) were established (Nine in Andhra Pradesh, eight in Telangana, 10 in Tamil Nadu and one in Puducherry) in collaboration with IMD for issuing and disseminating agromet advisories to farmers at sub-district level. A total of 40156 block level bulletins and 2900 district level bulletins were prepared and disseminated weather related advisories through different means. Various Programmes such as trainings, kisan gosthis etc are conducted to create awareness about weather forecast and weather based agro advisories, benefits and avoiding probable loss due to unexpected events. About 370 such programmes were organized with the participation of about 18000 farmers and farm women during the year 2022 in ICAR-ATARI,

zone X. KVKs conduct feedback and impact studies to assess the accuracy and usefulness of the agro advisories sent to the farmers. about 50 feedback studies and 45 impact studies were conducted by the KVKs of zone X.

Cluster Frontline Demonstrations on Pulses and Oilseeds

Advancing the future of pulses and oilseeds: Putting Indian pulses and oilseeds on the Global map

Cluster Frontline Demonstrations on Pulses under NFSM were organized by 66 KVKs comprising of Tamil Nadu, Andhra Pradesh, Telangana and Puducherry in Zone-X during 2022 across three seasons. A total of 7076 FLDs were conducted covering an area of 3060 ha under pulses. Similarly, 6125 cluster frontline demonstrations covering 2450 ha were conducted under NFSM in oilseed crops by 45 KVKs during *kharif* and *rabi* 2022. Productivity of pulses and oilseeds realized in FLDs was higher than the district/ state averages indicating potential for bridging the yield gap.

Tribal Sub Plan (TSP)

Empowering tribal farmers to achieve their full potential. But one step at a time

The Tribal Sub Plan (TSP) aimed at ameliorating the socio-economic conditions of tribal communities was implemented by 16 KVKs in the zone (7 in Andhra Pradesh, 7 in Telangana and 2 in Tamil Nadu) and facilitated creation of 9244 assets/ micro-enterprises and provided income generating opportunities to 3326 tribals. Skill development trainings (46) were imparted to 1424 beneficiaries.

Kisan Sarathi

Kisan Sarathi is the farmer's friend, guiding them to success.

ATARI, Hyderabad implemented Kisan Sarathi involving a total of 71 KVKs, 13 DAATT Centers in which a total of 909894 farmers have been registered in the portal by the KVKs of Andhra Pradesh (358217), Tamil Nadu (288915), Telangana (259818) and Puducherry (2944) to receive personalized advisories on agriculture and allied areas directly from the respective scientists of Krishi Vigyan Kendra (KVKs).

Capacity building on profitable dairy farming

Dairy farming made easy: Capacity building on profitable dairy farming.

The project was implemented by two KVKs in Andhra Pradesh and one KVK in Puducherry in 2022. KVKs conducted 8 training programmes benefiting 329 farmers to create awareness on improved management practices of dairy farming and other livestock.

Swachhta Hi Sewa

A clean and healthy India, one farm at a time. A healthy farm is a happy farm.

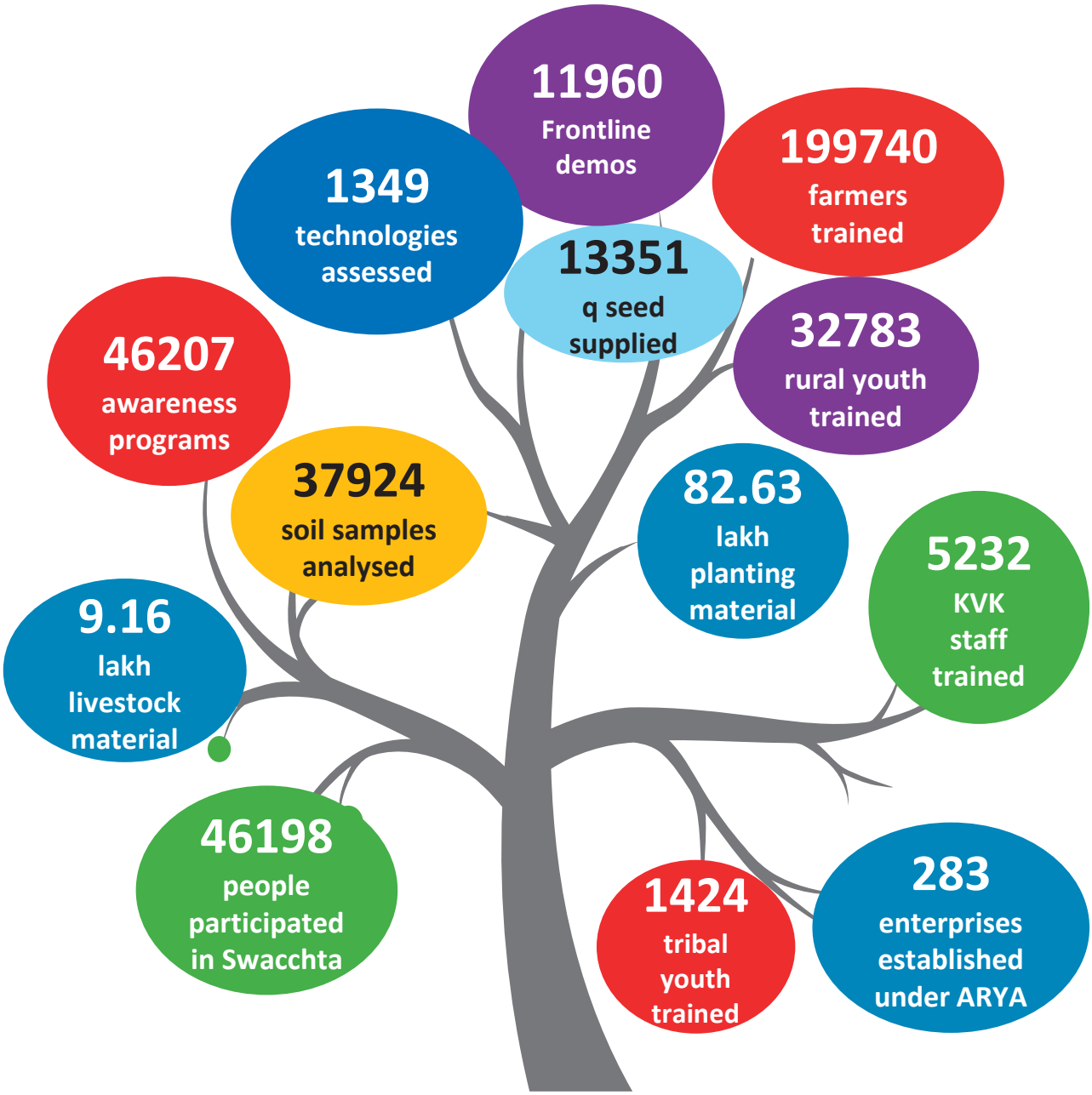
ICAR-ATARI, Hyderabad has been implementing Swachh Bharat Mission for promoting cleanliness. KVKs of the zone are conduction various programmes every month. During the year 2022, KVKs of zone 10 conducted these activities with the participation of 46198 rural population. Special campaign on Swachhata Abhiyana conducted during October 2022-23 in which Swachhata activities were conducted every day of the month. During October 2022-23 these activities were conducted with the participation of 41983 members which include 21561 farmers, 11333 school students, 7496 staff members, 883 dignitaries and 799 civil society members.

Mera Gaon Mera Gaurav

Mera Gaon Mera Gaurav: Taking pride in our villages and their future. Let's make our villages proud!

Under *Mera Gaon Mera Gaurav* (MGMG), which is implemented by 10 ICAR institutes in the zone, 306 villages were adopted by 66 teams of scientists, and they organized 1154 activities which benefited 46332 farmers and rural people.

This document includes achievements of mandated activities and special projects of KVKs of the Zone and ATARI undertaken during the year 2022.



ATARI - Hyderabad

... Impact Accelaration through Tehnology Application

Contents

1. Introduction

ICAR-Agricultural Technology Application Research Institute (ATARI)

"Lab to Land" was launched by the National Co-ordination committee during 1979-80, the golden jubilee year of ICAR for ensuring successful transfer of economically viable and socially acceptable technologies generated in the laboratories to farmers' fields. The objective of the programme was to adopt 50000 small and marginal farmers and landless labourers throughout the country to transfer available farm technologies of crop production, livestock farming, farm tools and implements, pisciculture, sericulture, apiculture *etc*. including crop-livestock integration and the programme was implemented from September, 1979.

To facilitate the implementation and monitoring of the Lab to Land programme, the country was divided into eight zones and Zonal Co-ordination units were established for each zone during the same year. Zonal Coordination Unit for Transfer of Technology, Zone-V was established in September, 1979 as Cess Fund Scheme at Andhra Pradesh Agricultural University, Hyderabad primarily to monitor the activities of the Lab to Land Programme in the states of Andhra Pradesh and Maharashtra. The unit was shifted to the campus of Central Research Institute for Dryland Agriculture (CRIDA), Hyderabad during the year 1985 and it remained operational till 1986. It was later brought under the plan scheme of ICAR during the year 1986.

All the other ICAR supported Transfer of Technology Projects that were implemented in the zone *viz*. Krishi Vigyan Kendras (KVK), Trainers Training Centre (TTC), National Demonstration Scheme (NDS), Operational Research Projects (ORP), All India Coordinated Project on SC / ST (AICRP SC/ ST) and Special Projects on Oilseeds were brought under the umbrella of the Zonal Co-ordination unit during the year 1987. The additional responsibility of monitoring the Frontline Demonstrations (FLD) on oilseeds under Oilseeds Production Programme (OPP) and pulses under National Pulse Project (NPP), farm implements, and cotton was entrusted with the ZC Unit during the years 1990 and 1991. In 1995, a pilot project on Institute Village Linkage Programme (IVLP) launched by the council for Technology Assessment and Refinement (TAR) was also implemented in the zone by the unit. In 1998, Zonal Research Stations under the State Agricultural Universities (SAU) were strengthened to take up the additional functions of KVKs and these re-mandated KVKs have also been monitored by the unit since then.

The X and XI Five Year Plan (FYP) period was marked by a phenomenal impetus in the establishment of new KVKs in Zone-V covering the states of Andhra Pradesh and Maharashtra. During XI FYP period, Council approved establishment of 97 new KVKs which included 24 additional KVKs in geographically larger districts, 12 each in the states of Andhra Pradesh and Maharashtra. With the addition of several new KVKs in each zone, ICAR has upgraded all the eight Zonal Coordination Units to the status of Directorates and thus Zonal Project Directorate (ZPD), Zone-V came into existence during the year 2009. The status of the ZPDs was changed into Institutes with the mandate of Extension Research being added and the post of Zonal Project Director being upgraded to that of Director with effect from 2015. The ZPD was re-designated as "Agricultural Technology Application Research Institute (ATARI). Further, ICAR reorganized the 8 ATARIs into 11 with revised jurisdiction of states. ATARI, Hyderabad is re-designated as Zone-X for coordination of KVKs in Andhra Pradesh, Telangana, Tamil Nadu and Puducherry. In XII plan, 11 additional KVKs were sanctioned out of which six were established in Andhra Pradesh and Telangana.

Mandates of ATARI

a. Coordination and monitoring of technology application and Frontline Extension Education Programs

b. Strengthening Agricultural Extension Research and Knowledge Management

The ICAR-ATARI, Hyderabad functions under the administrative control of Division of Agricultural Extension of ICAR headed by the Deputy Director General (Agricultural Extension). The ATARI is headed by the Director who is assisted by the Principal Scientists, Senior Scientists, Scientists, technical, administrative and supporting staff. The requisite infrastructure for the smooth functioning of ATARI was built in the same premises as ICAR-Central Research Institute for Dryland Agriculture (CRIDA), Santoshnagar, Hyderabad.

Among many others, ATARI focuses on the following functions.

1. Technology assessment and refinement: ATARI assesses and refines agricultural technologies developed by various research institutions before recommending them to farmers. They assess the suitability and feasibility of technologies based on micro agro-climatic conditions and farming systems.
2. Front Line Demonstrations (FLDs): One of the important mandates of ATARI is to conduct FLDs in their respective regions. FLDs are an essential component of technology assessment, refinement, and transfer, aiming to showcase the performance and benefits of new agricultural technologies and practices to farmers.
3. Technology dissemination and training: ATARIs play a crucial role in transferring agricultural technologies and knowledge to farmers. They organize, through KVKs, training programs, workshops, demonstrations, and field days to educate farmers and extension workers about the latest farming techniques, crop varieties, and livestock management practices.
4. Monitoring and evaluation: ICAR ATARI monitors the adoption and impact of technologies promoted in their regions. They assess the effectiveness of interventions, gather feedback from farmers, and provide recommendations for improvement.
5. Knowledge management: ATARI focuses on the effective management and dissemination of agricultural knowledge to facilitate technology transfer and capacity building.
6. Strengthening agricultural extension research: ATARI evolves new extension research paradigm in order to create evidence-based decision making, creating empirical evidence of extension interventions, technology evaluation and adaptation, new models of extension, action researches for improving the livelihoods, help identify the most suitable technologies for specific areas etc.,

In future, ICAR ATARI is likely to continue its efforts to enhance agricultural productivity, sustainability, and income generation for farmers. They may focus on developing and promoting climate-resilient technologies, precision agriculture, secondary agriculture, FPOs, digital farming solutions, and value chain development. Additionally, ATARI might increasingly emphasize the use of data analytics, remote sensing, and other advanced technologies for decision-making and resource management in agriculture.

Krishi Vigyan Kendra

Krishi Vigyan Kendra (Farm Science Center) is a science/ technology led, farmer centric institution, established with the purpose of providing knowledge and skill training to the farmers, rural youth and field-level extension workers. Vocational training in agriculture and allied fields through KVK has become the need of the hour for ensuring livelihood security and enhancing farm income which is envisaged to be doubled. The farmers not only require knowledge and understanding of intricacies of new technologies but also more skills to adopt the same in varied and complex field situation on their farms. In view of this, the role of KVK was further enhanced by adding the responsibility of on-farm testing and front-line

demonstrations of major agricultural technologies to dovetail the same with location specific environment. To equip the present-day farmers to face the challenges of information explosion and to bridge the digital divide, KVKs were also given the other responsibility of acting as knowledge and resource center of agricultural and allied technologies. The use of ICT by KVKs has been substantial to provide necessary and timely information on weather, markets and solutions to various day to day problems faced by farmers.

Mandates of KVKs

- On-farm testing to assess the location specificity of agricultural technologies under various farming systems.
- Organize frontline demonstrations to establish production potential of technologies on the farmers' fields.
- Capacity development of farmers and extension personnel to update their knowledge and skills in frontier agricultural technologies and enterprises.
- Work as Knowledge and Resource Centre for improving overall agricultural economy in the operational area.

ICAR ATARI ATARI, Zone-X, Hyderabad

2. Krishi Vigyan Kendras

2.1. Status

The sanctioned strength of KVKs in Zone-X is 75 out of which 72 are in operation during 2022. The state-wise sanctioned KVKs include 32 in Tamil Nadu, 24 in Andhra Pradesh, 16 in Telangana and three in Puducherry. Out of 32 KVKs in Tamil Nadu, 20 are with SAUs (15 with TNAU, four with TANUVAS and one with TNJFU), one with DU and twelve with NGOs. One KVK with NGO is non-functional during 2022-23. Of the 24 KVKs in Andhra Pradesh, 18 are with SAUs (13 with ANGRAU, four with Dr YSRHU and one with SVVU), two with ICAR (ICAR-CTRI) and four are with NGOs. One among the NGO KVKs is non-functional. Of the 16 KVKs in Telangana,10 are with SAUs (eight with PJTSAU, one each with SKLBTSHU and PVNRTSVU) one with ICAR (ICAR-CRIDA) and five with NGOs. In Puducherry, all three KVKs are administered by the State Department of Agriculture. One among the three KVKs is not established.

Table 2.1.1. Status of KVKs

State	No. of rural districts	No. of KVKs Sanctioned						Functional during 2022
		SAU	ICAR	NGO	DU	SDA	Total	
Tamil Nadu	38	20	-	11	1	-	32	31
Andhra Pradesh	13	18	2	4	-	-	24	23
Telangana	33	10	1	5	-	-	16	16
Puducherry	4	-	-	-	-	3	3	2
Total	**88**	**47**	**3**	**20**	**2**	**3**	**75**	**72**

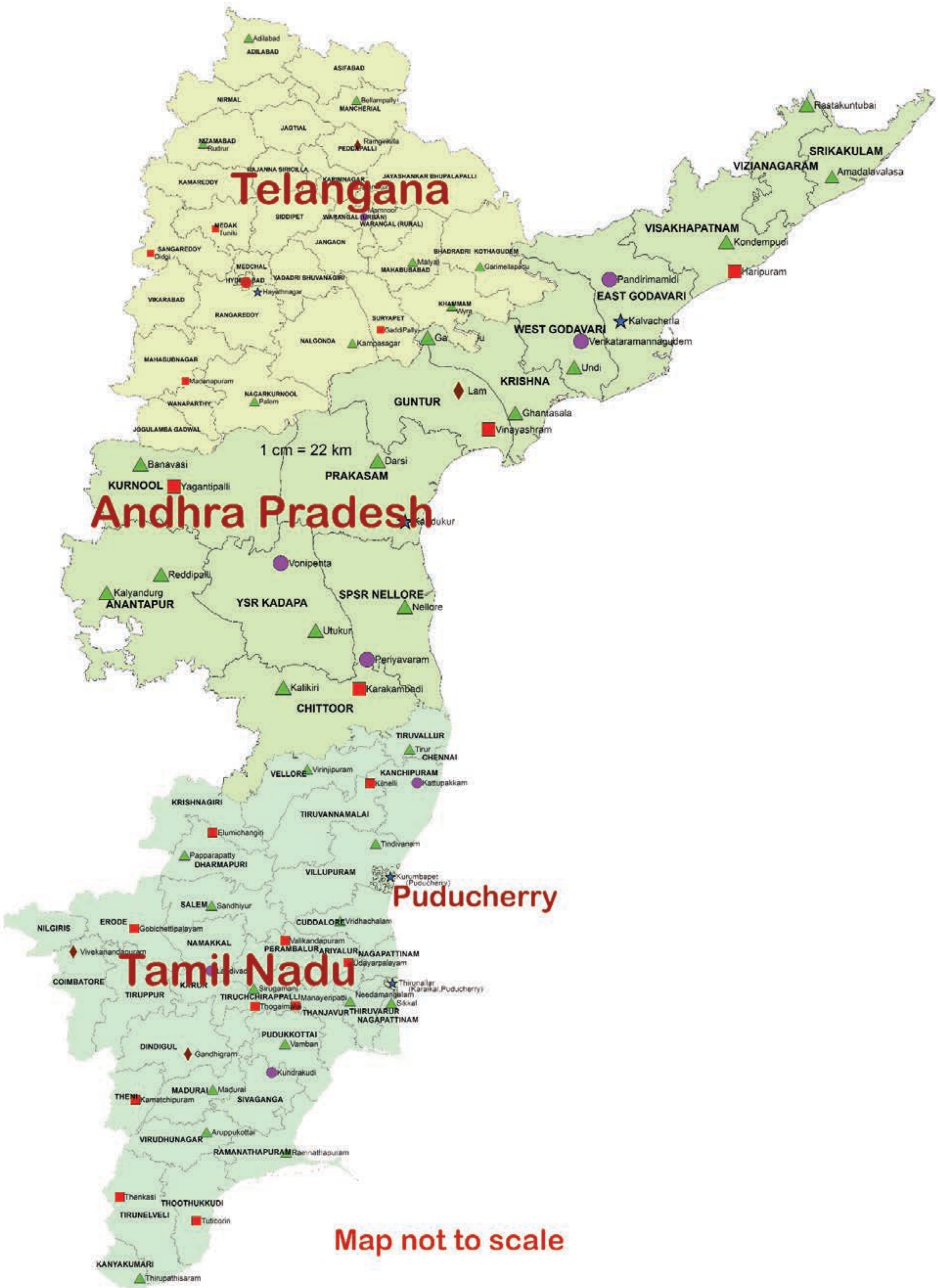
2.2 Staff

The details of staff position of KVKs in different states are given in Table 2.2.1. The total sanctioned staff strength of KVKs in Zone-X stands at 1152, out of which 952 (82.64%) positions are filled. Scientific staff strength is 432 out of which 367 (84.95%) are filled. In Tamil Nadu, 435 out of 496 positions are filled (87.70%), in Andhra Pradesh, 284 out of 368 positions are filled (77.17%), in Telangana, 215 out of 256 positions are filled (83.98%) and in Puducherry, 18 out of 32 positions are filled (56%).

Table 2.2.1 Consolidated staff position

Category	Tamil Nadu			Andhra Pradesh			Telangana			Puducherry			Total		
	S	F	V	S	F	V	S	F	V	S	F	V	S	F	V
Programme Coordinators	31	27	4	23	20	3	16	12	4	2	1	1	72	60	12
Subject Matter Specialists	186	171	15	138	115	23	96	75	21	12	6	6	432	367	65
Farm Managers	31	26	5	23	15	8	16	14	2	2	2	0	72	57	15
Programme Assistant (Computer)	31	26	5	23	17	6	16	12	4	2	2	0	72	57	15
Programme Assistant (Lab Tech)	31	26	5	23	17	6	16	14	2	2	1	1	72	58	14
Assistant	31	28	3	23	19	4	16	14	2	2	0	2	72	61	11
Stenographer (Grade-III)	31	23	8	23	18	5	16	15	1	2	1	1	72	57	15
Driver	62	55	7	46	31	15	32	30	2	4	2	2	144	118	26
SSS	62	53	9	46	32	14	32	29	3	4	3	1	144	117	27
Total	**496**	**435**	**61**	**368**	**284**	**84**	**256**	**215**	**41**	**32**	**18**	**14**	**1152**	**952**	**200**

S=Sanctioned; F= Filled; V=Vacant



Telangana
Andhra Pradesh
Tamil Nadu
Puducherry
1 cm = 22 km
Map not to scale
SRIKAKULAM
VIZIANAGARAM
VISAKHAPATNAM
EAST GODAVARI
WEST GODAVARI
KRISHNA
GUNTUR
PRAKASAM
KURNOOL
ANANTAPUR
YSR KADAPA
SPSR NELLORE
CHITTOOR
Rastakuntubai
Amadalavalasa
Kondempudi
Haripuram
Pandirimamidi
Kalvacherla
Venkataramannagudem
Undi
Lam
Ghantasala
Vinayashram
Darsi
Banavasi
Yagantipalli
Vonipenta
Reddipalli
Kalyandurg
Nellore
Utukur
Periyavaram
Kalikiri
Karakambadi

2.3. Infrastructure

To facilitate proper functioning of KVKs, modest infrastructure is provided by ICAR. The details of land, buildings, laboratory, vehicles, demonstration units and other facilities available at KVKs are presented in Tables 2.3.1 to 2.3.4. The other infrastructure such as rainwater harvesting structure and Integrated Farming System models are provided to some KVKs, while the buildings and vehicle are provided to all the KVKs by ICAR.

Table 2.3.1. Details of infrastructure facilities available with KVKs in Tamil Nadu

KVK	Land area (ha)	Admin Building	Farmers Hostel	Staff Quarters	Soil & Water Testing Lab	Mini Soil Testing Kit	Sales Counter	Jeep	Tractor	Two-wheeler	No. of Demo Units
Ariyalur	20.00	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	24
Coimbatore	20.50	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	25
Cuddalore	20.00	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	18
Dharmapuri	16.16	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	31
Dindigul	20.00	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	20
Erode	22.00	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	24
Kancheepuram	20.00	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	19
Kanyakumari	20.00	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	21
Karur	21.51	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	19
Krishnagiri	20.30	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes	20
Madurai	21.81	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	21
Nagapattinam	22.67	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	29
Namakkal	20.00	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	42
Nilgiris	20.00	No	No	No	No	No	No	No	No	No	12
Perambalur	21.54	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	13
Pudukkottai	23.20	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	24
Ramanathapuram	17.76	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	13
Salem	9.95	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	26
Sivagangai	17.95	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	15
Theni	22.00	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	11
Thiruvallur	16.00	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	12
Thiruvannamalai	20.48	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	25
Thiruvarur	18.66	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	16
Thoothukudi	20.00	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	20
Tiruchirappalli	20.00	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	22
Tirunelveli	20.00	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	15
Tiruppur	15.62	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	16
VELLORE	22.40	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	24
Villupuram	16.80	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	13
Villupuram II	20.00	No	No	No	No	No	No	Yes	Yes	Yes	15
Virudhunagar	16.00	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	16
Total	**603.31**	**29**	**26**	**21**	**25**	**25**	**24**	**30**	**29**	**28**	**621**

Table 2.3.2. Details of infrastructure facilities available with KVKs in Andhra Pradesh

KVK	Land area (ha)	Admin Building	Farmers Hostel	Staff Quarters	Soil & Water Testing Lab	Mini Soil Testing Kit	Sales Counter	Jeep	Tractor	Two-wheeler	No. of Demo Units
Ananthapuram (Reddipalli)	22.25	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	19
Ananthapuram (Kalyandurg)	20.23	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes	8
Chittoor (RASS)	17.84	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	25
Chittoor (Kalikiri)	20.22	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	8
East Godavari (Kalavacharla)	14.37	Yes	Yes	Yes	No	No	No	No	Yes	No	16
East Godavari (Pandirimamidi)	19.40	Yes	Yes	No	No	Yes	No	Yes	Yes	No	23
Guntur (Lam)	23.60	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	11
Kadapa (Utukur)	13.20	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	13
Kadapa (Vonipenta)	42.36	No	Yes	No	No	No	No	Yes	No	Yes	16
Krishna (Garikapadu)	20.80	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	0
Krishna (Ghantasala)	15.41	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes	10
Kurnool (Yagantipalle)	20.00	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	29
Kurnool (Banavasi)	20.00	Yes	Yes	No	Yes	No	No	Yes	Yes	No	19
Nellore	24.00	Yes	No	Yes	Yes	No	No	Yes	Yes	No	7
Nellore (Periyavaram)	22.70	No	Yes	No	No	Yes	No	Yes	No	Yes	13
Prakasam (Darsi)	22.66	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	11
Prakasam (Kandukur)	20.00	Yes	No	No	No	Yes	No	Yes	Yes	No	1
Srikakulam	19.27	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	10
Visakhapatnam (Haripuram)	40.00	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No	18
Visakhapatnam (Kondempudi)	20.00	Yes	Yes	No	Yes	No	No	Yes	Yes	Yes	10
Vizianagaram	22.55	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	11
West Godavari (Undi)	20.00	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	13
West Godavari (VR Gudem)	20.00	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No	19
Total	**500.86**	**21**	**20**	**10**	**11**	**15**	**7**	**22**	**20**	**13**	**310**

Table 2.3.3. Details of infrastructure facilities available with KVKs in Telangana

KVK	Land area (ha)	Admin Building	Farmers Hostel	Staff Quarters	Soil & Water Testing Lab	Mini Soil Testing Kit	Sales Counter	Jeep	Tractor	Two-wheeler	No. of Demo Units
Adilabad	5.60	Yes	No	No	No	Yes	No	Yes	Yes	Yes	5
Kammam (Wyra)	13.38	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes	16
Kammam (Kothagudam)	20.00	Yes	No	No	Yes	Yes	No	Yes	Yes	Yes	2
Karimnagar (Jammikunta)	25.60	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	29
Karimnagar (Ramagirikhilla)	25.60	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes	2
Mahabubnagar (YFA)	20.00	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No	10
Mahabubnagar (Palem)	21.26	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	16
Mancherial	20.00	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes	20
Medak (DSS)	25.80	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	18

KVK	Land area (ha)	Admin Building	Farmers Hostel	Staff Quarters	Soil & Water Testing Lab	Mini Soil Testing Kit	Sales Counter	Jeep	Tractor	Two-wheeler	No. of Demo Units
Medak (Tuniki)	12.00	Yes	No	No	No	Yes	No	Yes	Yes	No	21
Nalgonda (Gaddipally)	25.60	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	24
Nalgonda (Kampasagar)	20.00	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	5
Nizamabad	20.00	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	6
Ranga Reddy	20.00	Yes	Yes	No	Yes	Yes	No	No	Yes	Yes	10
Warangal (Malyal)	18.30	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	6
Warangal (Mamnoor)	20.00	Yes	Yes	No	No	Yes	No	Yes	Yes	No	13
Total	**313.14**	**16**	**13**	**6**	**8**	**16**	**4**	**3**	**16**	**6**	**203**

Table 2.3.4. Details of infrastructure facilities available with KVKs in Puducherry

KVK	Land area (ha)	Admin Building	Farmers Hostel	Staff Quarters	Soil & Water Testing Lab	Mini Soil Testing Kit	Sales Counter	Jeep	Tractor	Two-wheeler	No. of Demo Units
Karaikal	24.38	Yes	No	No	No	Yes	No	Yes	Yes	Yes	16
Puducherry	58.00	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	13
Total	**82.38**	**2**	**0**	**0**	**1**	**2**	**1**	**2**	**1**	**2**	**29**

2.4. Revolving fund

The total receipts through revolving fund by KVKs in the Zone-X is Rs.2354.60 lakhs of which Rs.1002.19 lakhs are generated by KVKs in Tamil Nadu, Rs.727.09 lakhs by KVKs in Andhra Pradesh, Rs.604.86 lakhs by KVKs in Telangana and Rs.20.46 lakhs by KVKs in Puducherry (Table 2.4.1.). Closing Balance as on 31.03.2022 is Rs.1707.63 Lakhs. KVK wise status is given in Tables 2.4.2 to 2.4.5.

Table 2.4.1. Status of revolving fund (Rs. in lakh)

State	Receipts 2022-23	Expenditure 2022-23	Balance on 31.03.2023
Tamil Nadu	1002.19	879.47	562.32
Andhra Pradesh	727.09	614.07	576.64
Telangana	604.86	471.10	552.60
Puducherry	20.46	15.65	16.08
Total	**2354.60**	**1980.28**	**1707.63**

Table 2.4.2. Status of revolving fund in KVKs of Tamil Nadu (Rs. In lakhs)

KVK	Receipts (2022-23)	Expenditure (2022-23)	Balance as on 31.03.2023
Ariyalur	26.29	25.37	10.05
Coimbatore	10.61	12.77	14.69
Cuddalore	23.10	21.19	10.75
Dharmapuri	27.95	24.57	29.37
Dindigul	33.52	35.00	40.26
Erode	3.55	2.81	12.24
Kancheepuram	30.52	21.56	16.23
Kanyakumari	5.85	7.32	7.01
Karur	35.60	39.13	7.02
Krishnagiri	120.19	102.41	38.22
Madurai	14.10	8.18	12.35

KVK	Receipts (2022-23)	Expenditure (2022-23)	Balance as on 31.03.2023
Nagapattinam	11.19	11.33	0.53
Namakkal	141.69	105.97	96.35
Nilgiris	0.00	0.00	0.00
Perambalur	137.92	109.93	64.31
Pudukkottai	14.45	12.51	3.66
Ramanathapuram	1.05	1.52	2.84
Salem	33.10	31.13	17.03
Sivagangai	14.24	12.53	27.58
Theni	2.17	4.21	9.52
Thiruvallur	12.70	6.77	7.28
Thiruvannamalai	36.24	43.36	9.67
Thiruvarur	30.14	32.26	0.66
Thoothukudi	104.09	80.48	27.47
Tiruchirappalli	17.26	14.74	15.00
Tirunelveli	15.06	16.84	8.42
Tiruppur	26.44	33.53	8.74
Vellore	21.04	17.68	34.98
Villupuram	31.55	25.97	21.05
Villupuram II	9.53	7.94	6.28
Virudhunagar	11.03	10.43	2.75
Total	**1002.19**	**879.47**	**562.32**

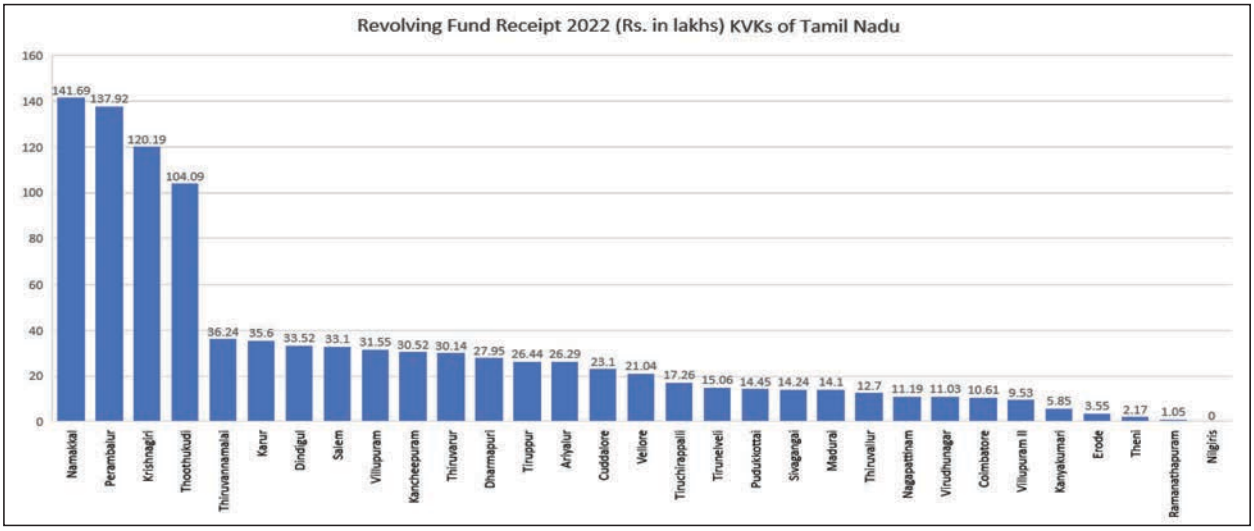


Table 2.4.3. Status of revolving fund in KVKs of Andhra Pradesh (Rs. In lakhs)

KVK	Receipts (2022-23)	Expenditure (2022-23)	Balance as on 31.03.2023
Ananthapuram (Reddipalli)	23.17	20.29	35.53
Ananthapuram (Kalyandurg)	18.52	17.18	20.88
Chittoor (RASS)	41.25	39.79	71.00
Chittoor (Kalikiri)	13.98	11.57	9.83
East Godavari (Kalavacharla)	1.57	6.37	17.10
East Godavari (Pandirimamidi)	24.38	19.72	44.78
Guntur (Lam)	3.11	4.87	8.01
Kadapa (Utukur)	21.43	10.61	17.75
Kadapa (Vonipenta)	1.12	0.12	4.21
Krishna (Garikapadu)	37.31	49.32	10.73

KVK	Receipts (2022-23)	Expenditure (2022-23)	Balance as on 31.03.2023
Krishna (Ghantasala)	37.33	22.42	40.05
Kurnool (Yagantipalle)	198.79	191.69	8.23
Kurnool (Banavasi)	26.79	14.73	23.82
Nellore (Nellore)	11.62	5.99	8.35
Nellore (Periyavaram)	4.50	2.44	9.53
Prakasam (Darsi)	30.65	16.63	43.97
Prakasam (Kandukur)	1.09	0.00	10.53
Srikakulam	36.44	30.73	35.57
Visakhapatnam (BCT)	48.30	45.32	75.87
Visakhapatnam (Kondempudi)	27.25	26.05	8.09
Vizianagaram	7.26	0.00	12.91
West Godavari (Undi)	52.16	40.79	24.35
West Godavari (VR Gudem)	59.09	37.45	35.53
Total	**727.09**	**614.07**	**576.64**

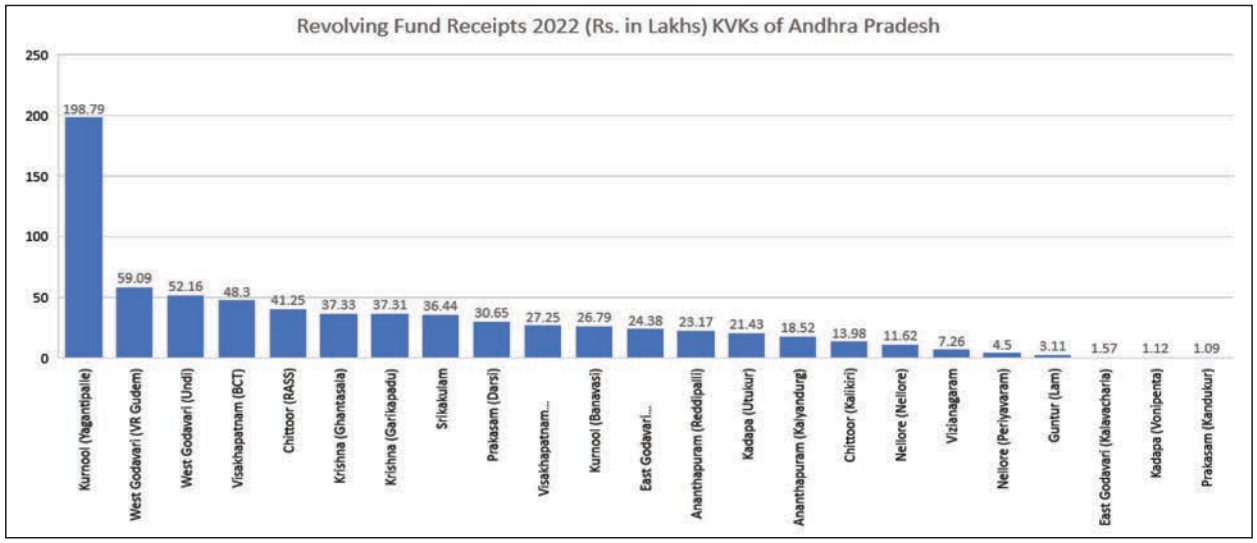


Table2.4.4. Status of revolving fund in KVKs of Telangana (Rs. In lakhs)

KVK	Receipts (2022-23)	Expenditure (2022-23)	Balance as on 31.03.2023
Adilabad	21.97	10.61	35.04
Khammam (Wyra)	48.31	24.66	134.06
Khammam (Kothagudam)	11.28	6.38	11.61
Karimnagar (Jammikunta)	108.02	94.97	67.87
Karimnagar (Ramagirikhilla)	17.72	10.84	9.98
Mahabubnagar (YFA)	19.02	15.55	26.69
Mahabubnagar (Palem)	37.00	26.11	21.23
Mancherial	9.91	6.04	10.05
Medak (DSS)	6.71	14.44	2.64
Medak (Tuniki)	131.20	105.44	26.64
Nalgonda (Gaddipally)	104.07	86.54	98.89
Nalgonda (Kampasagar)	46.53	41.55	6.19
Nizamabad (Rudrur)	17.94	11.93	21.88
Ranga Reddy	1.52	0.05	7.01
Warangal (Malyal)	22.79	14.95	71.05
Warangal (Mamnoor)	0.87	1.05	1.79
Total	**604.86**	**471.10**	**552.60**

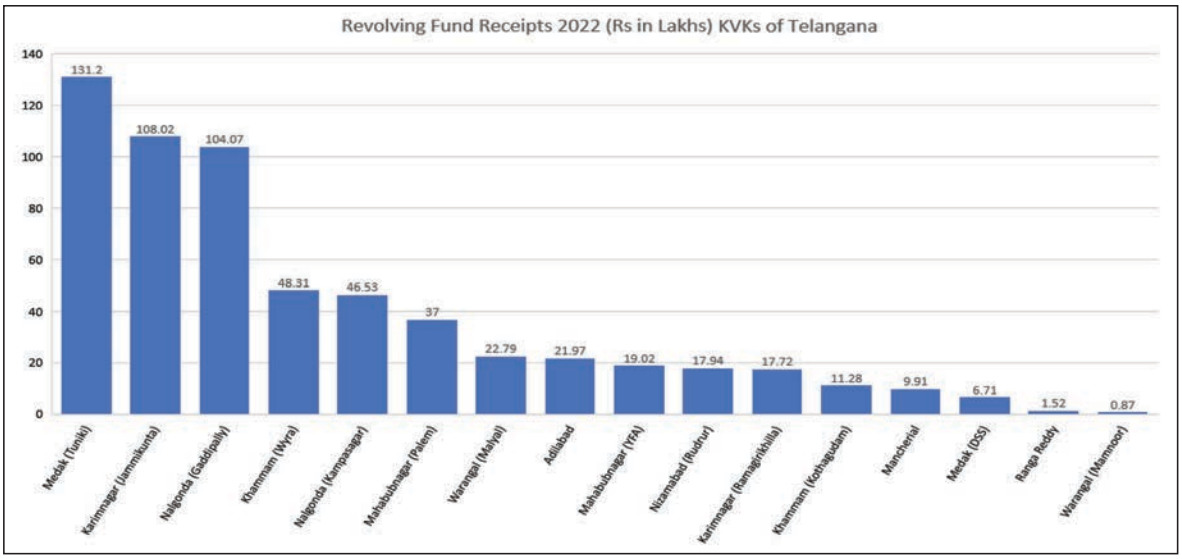


Table 2.4.5. Status of revolving fund in KVKs of Puducherry (Rs. In lakhs)

KVK	Receipts (2022-23)	Expenditure (2022-23)	Balance as on 31.03.2023
Karaikal	10.24	6.90	8.88
Puducherry	10.21	8.75	7.20
Total	**20.46**	**15.65**	**16.08**

2.5 Scientific Advisory Committee (SAC) Meetings

The Scientific Advisory Committee meetings are conducted by KVKs to get necessary guidance and support to carry out the mandated activities of KVK in a more planned and scientific manner. A total of 72 Scientific Advisory Committee meetings were conducted by KVKs for the year 2022-23 (Table 2.5.1).

2.5.1. Details of SAC meetings conducted in Zone-X

State	No. of operational KVKs	No. of SAC meetings conducted
Tamil Nadu	31	31
Andhra Pradesh	23	23
Telangana	16	16
Puducherry	2	2
Total	**72**	**72**

Inspired by the demonstrations of KVK Visakhapatnam, I cultivated greengram variety WGG 42 and got 4.9 q/ha. The bold size of the seed and virus free character fetched Rs 18000 additional income. I sold the produce as seed to the fellow farmers. Now farmers of my village and surrounding 3 villages are cultivating the variety.

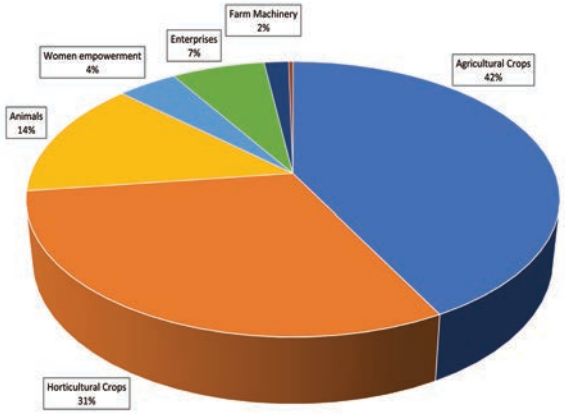
Mr. Doni Guruvulu
Degalapalem village, Visakhapatnam, AP

3. Achievements

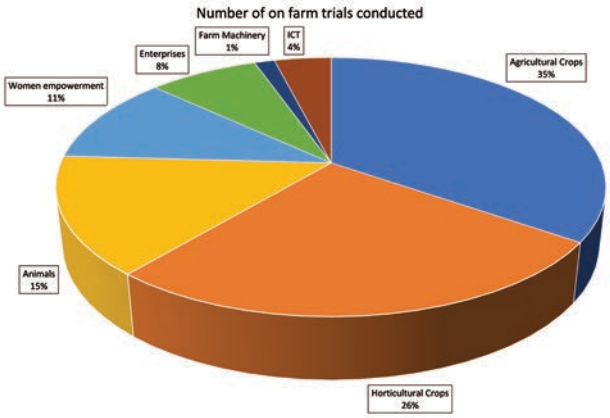
3.1. Technology assessment

During the year, KVKs in Zone X assessed 1349 technologies in 4641 trials conducted at different locations on farmers' fields (Table 3.1.1) through On-farm Trials (OTF). The technologies included 984 on crops, 188 on animals 58 on women empowerment, 91 technologies on Enterprises 24 on farm machinery and 4 on ICT. KVKs of Tamil Nadu, Andhra Pradesh, Telangana, and Puducherry assessed 563, 547, 211 and 28 technologies in 1680, 1982, 904 and 75 trials, respectively.

Number of Technologies Assessed



Number of On Farm Trials Conducted



A total of 984 technologies assessed were on crops of which 435 were new and improved crop varieties (Table 3.1.2.). Among the other crop production and protection technologies, 157 were on IPM, 102 on INM and 63 on ICM. Out of 188 technologies assessed in the animal category, 51 was on nutrition management and 35 on disease management. In women empowerment 58 technologies were assessed and in enterprises, 91 technologies were assessed. Under farm machinery, 24 technologies were assessed.

Table 3.1.1. Abstract of technologies assessed in OFTs by KVKs in Zone X (Updated)

Category	Tamil Nadu			Andhra Pradesh			Telangana			Puducherry			Total		
	Tech.	Trials	KVKs	Tech.	Trials	KVKs	Tech.	Trials	KVKs	Tech.	Trials	KVKs	Tech.	Trials	KVKs
Agricultural Crops	250	620	30	198	594	22	106	339	15	16	55	2	**570**	**1608**	**69**
Horticultural Crops	180	481	28	160	485	22	72	259	15	2	5	1	**414**	**1230**	**66**
Total Crops	**430**	**1101**	**30**	**358**	**1079**	**23**	**178**	**598**	**16**	**18**	**60**	**2**	**984**	**2838**	**71**
Animals	64	217	18	106	342	19	12	118	4	6	7	2	**188**	**684**	**43**
Women mpowerment	14	50	5	41	420	10	3	41	3				**58**	**511**	**18**
Enterprises	47	119	15	31	113	8	10	121	5	3	5	1	**91**	**358**	**29**
Farm Machinery	4	8	2	11	28	4	8	26	5	1	3	1	**24**	**65**	**12**
ICT	4	185	4										**4**	**185**	**4**
Total	**563**	**1680**	**31**	**547**	**1982**	**23**	**211**	**904**	**16**	**28**	**75**	**2**	**1349**	**4641**	**72**

Tech. = No. of Technologies; Trials = No. of Trials; KVKs = No. of KVKs

Table 3.1.2. Details of thematic area wise technologies assessed in OFTs by KVKs in Zone X

Thematic Area	Tamil Nadu				Andhra Pradesh				Telangana				Puducherry				Total			
	OFTs	Tech.	Trials	KVKs	OFTs	Tech.	Trials	KVKs	OFTs	Tech.	Trials	KVKs	OFTs	Tech.	Trials	KVKs	OFTs	Tech.	Trials	KVKs
Agricultural Crops																				
Canopy Management	0	0	0	0	0	0	0	0	2	3	6	2	0	0	0	0	**2**	**3**	**6**	**2**
Cropping Systems	0	0	0	0	7	14	40	5	9	12	37	6	0	0	0	0	**16**	**26**	**77**	**11**
Farm Machineries	1	2	5	1	0	0	0	0	7	8	25	6	0	0	0	0	**8**	**10**	**30**	**7**
Fertigation Technique	0	0	0	0	0	0	0	0	1	1	3	1	0	0	0	0	**1**	**1**	**3**	**1**
ICM	9	18	45	6	2	3	10	3	7	9	29	5	0	0	0	0	**18**	**30**	**84**	**14**
IDM	7	14	35	6	6	11	34	6	10	12	49	9	0	0	0	0	**23**	**37**	**118**	**21**
INM	16	32	80	12	16	26	75	10	8	11	32	5	2	3	10	1	**42**	**72**	**197**	**28**
IPDM	1	2	5	1	6	12	31	3	5	6	22	5	2	2	10	1	**14**	**22**	**68**	**10**
IPM	14	23	64	9	19	29	86	10	18	22	66	9	2	4	10	1	**53**	**78**	**226**	**29**
Post Harvest Technology / Value addition	1	2	5	1	4	6	29	3	0	0	0	0	0	0	0	0	**5**	**8**	**34**	**4**
Resource Conservation Technology	3	6	15	1	2	3	10	2	2	2	6	1	1	1	5	1	**8**	**12**	**36**	**5**
Seed / Plant production	0	0	0	0	0	0	0	0	1	2	4	1	0	0	0	0	**1**	**2**	**4**	**1**
Soil health management	2	4	10	2	2	3	10	2	1	1	3	1	0	0	0	0	**5**	**8**	**23**	**5**
Varietal Assessment	74	132	321	28	51	83	252	20	11	11	42	6	7	5	15	2	**143**	**231**	**630**	**56**
Water management	0	0	0	0	1	2	3	1	0	0	0	0	0	0	0	0	**1**	**2**	**3**	**1**
Weed Management	8	15	35	6	3	6	14	3	5	6	15	4	5	1	5	1	**21**	**28**	**69**	**14**
Total	**136**	**250**	**620**	**30**	**119**	**198**	**594**	**22**	**87**	**106**	**339**	**15**	**19**	**16**	**55**	**2**	**361**	**570**	**1608**	**69**
Horticultural Crops																				
Cropping Systems	1	2	5	1	0	0	0	0	3	3	9	2	0	0	0	0	**4**	**5**	**14**	**3**
ICM	6	12	30	3	3	6	17	2	17	15	47	5	0	0	0	0	**26**	**33**	**94**	**10**
IDM	4	8	20	4	3	6	15	2	3	3	15	2	0	0	0	0	**10**	**17**	**50**	**8**
INM	12	17	40	6	7	12	42	6	1	1	5	1	0	0	0	0	**20**	**30**	**87**	**13**
IPDM	7	14	35	4	5	8	19	4	4	4	18	1	0	0	0	0	**16**	**26**	**72**	**9**
IPM	15	30	115	12	20	34	128	13	12	15	50	11	0	0	0	0	**47**	**79**	**293**	**36**
Post Harvest Technology / Value addition	4	8	25	3	4	8	20	4	0	0	0	0	0	0	0	0	**8**	**16**	**45**	**7**
Resource Conservation Technology	0	0	0	0	1	2	5	1	0	0	0	0	0	0	0	0	**1**	**2**	**5**	**1**
Small Scale Income Generation Enterprises	0	0	0	0	1	2	6	1	0	0	0	0	0	0	0	0	**1**	**2**	**6**	**1**
Varietal Assessment	48	89	211	23	49	82	233	20	38	31	115	14	1	2	5	1	**136**	**204**	**564**	**58**
Total	**97**	**180**	**481**	**28**	**93**	**160**	**485**	**22**	**78**	**72**	**259**	**15**	**1**	**2**	**5**	1	**269**	**414**	**1230**	**66**
Animals																				
Composite fish culture	2	4	6	1	3	6	18	1	0	0	0	0	0	0	0	0	**5**	**10**	**24**	**2**
Disease Management	8	16	80	8	9	16	136	6	3	3	11	2	0	0	0	0	**20**	**35**	**227**	**16**
Evaluation of Breeds	2	4	10	2	11	18	61	8	1	1	3	1	1	2	3	1	**15**	**25**	**77**	**12**

Thematic Area	Tamil Nadu				Andhra Pradesh				Telangana				Puducherry				Total			
	OFTs	Tech.	Trials	KVKs	OFTs	Tech.	Trials	KVKs	OFTs	Tech.	Trials	KVKs	OFTs	Tech.	Trials	KVKs	OFTs	Tech.	Trials	KVKs
Feed and Fodder management	5	10	20	4	9	18	36	8	0	0	0	0	0	0	0	0	**14**	**28**	**56**	**12**
Fish Production	2	4	6	2	3	8	3	2	1	1	3	1	0	0	0	0	**6**	**13**	**12**	**5**
Nutrition Management	9	18	70	7	12	24	56	9	5	5	93	2	2	4	4	1	**28**	**51**	**223**	**19**
Production and Management	4	8	25	4	8	16	32	6	2	2	8	2	0	0	0	0	**14**	**26**	**65**	**12**
Total	**32**	**64**	**217**	**18**	**55**	**106**	**342**	**19**	**12**	**12**	**118**	**4**	**3**	**6**	**7**	**2**	**102**	**188**	**684**	**43**
Enterprises																				
Entrepreneurship Development	0	0	0	0	0	0	0	0	2	2	30	2	1	3	5	1	**3**	**5**	**35**	**3**
Health and Nutrition	1	2	3	1	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**2**	**3**	**1**
Household food security	0	0	0	0	1	2	10	1	0	0	0	0	0	0	0	0	**1**	**2**	**10**	**1**
Mushroom Cultivation	1	2	3	1	2	4	10	2	0	0	0	0	0	0	0	0	**3**	**6**	**13**	**3**
Organic farming	0	0	0	0	1	1	3	1	0	0	0	0	0	0	0	0	**1**	**1**	**3**	**1**
Post Harvest Management	3	6	15	3	3	9	15	1	0	0	0	0	0	0	0	0	**6**	**15**	**30**	**4**
Processing and value addition	13	27	63	10	2	4	5	1	4	6	80	3	0	0	0	0	**19**	**37**	**148**	**14**
Small scale income generation	4	8	30	3	3	6	15	3	2	2	11	2	0	0	0	0	**9**	**16**	**56**	**8**
Storage techniques	5	2	5	1	1	3	50	1	0	0	0	0	0	0	0	0	**6**	**5**	**55**	**2**
Value Addition	0	0	0	0	1	2	5	1	0	0	0	0	0	0	0	0	**1**	**2**	**5**	**1**
Total	**27**	**47**	**119**	**15**	**14**	**31**	**113**	**8**	**8**	**10**	**121**	**5**	**1**	**3**	**5**	**1**	**50**	**91**	**358**	**29**
Farm Machinery																				
Cost saving	0	0	0	0	1	2	5	1	3	3	10	2	0	0	0	0	**4**	**5**	**15**	**3**
Drudgery reduction	0	0	0	0	3	6	13	3	1	1	4	1	0	0	0	0	**4**	**7**	**17**	**4**
Labour saving	2	4	8	2	0	0	0	0	1	1	3	1	1	1	3	1	**4**	**6**	**14**	**4**
Manpower saving	0	0	0	0	0	0	0	0	1	1	3	1	0	0	0	0	**1**	**1**	**3**	**1**
Resource conservation	0	0	0	0	0	0	0	0	1	1	3	1	0	0	0	0	**1**	**1**	**3**	**1**
Time saving	0	0	0	0	0	0	0	0	1	1	3	1	0	0	0	0	**1**	**1**	**3**	**1**
Water saving	0	0	0	0	2	3	10	1	0	0	0	0	0	0	0	0	**2**	**3**	**10**	**1**
Total	**2**	**4**	**8**	**2**	**6**	**11**	**28**	**4**	**8**	**8**	**26**	**5**	**1**	**1**	**3**	**1**	**17**	**24**	**65**	**12**
ICT																				
ICT	5	4	185	4	0	0	0	0	0	0	0	0	0	0	0	0	**5**	**4**	**185**	**4**
Total	**5**	**4**	**185**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**4**	**185**	**4**
Women empowerment																				
Drudgery Reduction	0	0	0	0	1	1	5	1	0	0	0	0	0	0	0	0	**1**	**1**	**5**	**1**
Entrepreneurship Development	0	0	0	0	1	2	5	1	1	1	6	1	0	0	0	0	**2**	**3**	**11**	**2**
Health and Nutrition	0	0	0	0	0	0	0	0	2	2	35	2	0	0	0	0	**2**	**2**	**35**	**2**
Value Addition	7	14	50	5	22	38	410	10	0	0	0	0	0	0	0	0	**29**	**52**	**460**	**15**
Total	**7**	**14**	**50**	**5**	**24**	**41**	**420**	**10**	**3**	**3**	**41**	**3**	**0**	**0**	**0**	**0**	**34**	**58**	**511**	**18**
Grand Total	**306**	**563**	**1680**	**31**	**311**	**547**	**1982**	**23**	**196**	**211**	**904**	**16**	**25**	**28**	**75**	**2**	**838**	**1349**	**4641**	**72**

OFTs = No. of OFTs, Tech. = No. of Technologies; Trials = No. of Trials; KVKs = No. of KVKs

In Tamil Nadu, 430 crop based technologies were assessed for their suitability in 1101 locations, 64 technologies on animals in 217 locations, 14 technologies on empowerment of women in 50 locations, 47 technologies on enterprises in 119 locations and four technologies on ICT were assessed in 185 locations. The KVKs of Andhra Pradesh assessed the suitability of 358 crop-based technologies in 1079 locations, 106 animal-based technologies in 342 locations, 41 technologies for women empowerment in 420 locations and 31 technologies on enterprises in 113 locations.

In Telangana, 178 crop-based technologies were assessed for their suitability in 598 locations, 12 animal-based technologies in 118 locations, three technologies for the empowerment of women in 41 locations and ten technologies for enterprises in 121 locations. On farm machinery, eight technologies were assessed at 26 locations. In Puducherry, 18 crop-based technologies were assessed for their suitability in 60 locations, animals six technologies in seven locations and three enterprises technologies in five locations.

Assessment of IDM in paddy – KVK, Visakhapatnam (BCT), Andhra Pradesh

OFT on Insect Pests and Diseases in HDPSystem of Cotton – KVK, Adilabad, Telangana

Performance of technologies

3.1.1. Varietal assessment

Field Crops

a. Cereals

Rice varieties MTU 1190, MTU 1210, MTU 1212, MTU 1224, MTU 1224, MTU 1280, MTU 1281, NLR 3354, NLR 3354, NLR 34449, NLR 34449, NLR 34449, NLR 34449, NLR 40054, NLR 40054, , ADT 53, ADT 54, ADT 56, CO 54, CO 55, CR 1009, CSR 60, MTU 1156, MTU 1156, MTU 1156, Ranjit Sub 1, Ranjit Sub 1, RNR 15048, RNR 15048, RNR 15048, TKM 15, TPS 3, TRY 4, and TRY 5 were assessed by KVKs of Andhra Pradesh, Tamil Nadu and Puducherry and were found superior to Farmer's Practice with 4 to 57 per cent higher yield and higher economic returns than farmers' varieties (Table 3.1.3).

Table 3.1.3. Performance of rice varieties in On Farm Trials of Zone X

State and KVK	Treatment					Farmers practice		
	Variety	No. of Trials	Yield (q/ha)	% increase over FP	BCR	Variety	Yield (q/ha)	BCR
Andhra Pradesh								
Krishna (Ghantasala)	MTU 1190	6	53.50	19	1:1.46	BPT 5204	45.00	1:4.88
Visakhapatnam (Kondempudi)	MTU 1210	5	37.18	17	1:3.20	RGL 2537	31.87	1:2.88
West Godavari (Undi)	MTU 1212	3	76.69	16	1:2.17	MTU 7029	66.07	1:1.81
Krishna (Ghantasala)	MTU 1224	6	46.88	4	1:1.40	BPT 5204	45.00	1:4.88
Visakhapatnam (Kondempudi)	MTU 1224	5	38.53	21	1:3.28	RGL 2537	31.87	1:2.88
West Godavari (Undi)	MTU 1280	3	71.25	17	1:1.99	MTU 1001	61.07	1:1.67
West Godavari (Undi)	MTU 1281	3	72.61	12	1:2.03	MTU 7029	65.04	1:1.78
Chittoor (RASS)	NLR 3354	5	52.50	24	1:2.14	ADT 37	42.48	1:1.54
Kadapa (Utukur)	NLR 3354	3	58.50	25	1:2.30	NDLR 7	46.80	1:1.75
Chittoor (RASS)	NLR 34449	5	48.72	15	1:2.13	ADT 37	42.48	1:1.54
Kadapa (Utukur)	NLR 34449	3	52.08	8	1:1.91	NDLR 7	48.04	1:1.69
Nellore (Nellore)	NLR 34449	3	72.25	6	1:1.63	BPT 5204	68.00	1:1.63
Kadapa (Utukur)	NLR 40054	3	56.88	18	1:2.09	NDLR 7	48.04	1:1.69
Nellore (Nellore)	NLR 40054	3	74.37	9	1:1.64	BPT 5204	68.00	1:1.63
Tamil Nadu								
Cuddalore	ADT 53	5	22.80	31	1:2.85	ASD 16	17.40	1:2.40
Karur	ADT 54	5	54.05	21	1:2.66	BPT 5204	44.74	1:2.07
Pudukkottai	ADT 56	5	47.90	14	1:2.09	ADT 39	42.00	1:1.84
Thiruvallur	CO 54	5	65.60	13	1:2.07	MTU 1010	58.10	1:1.77
Dharmapuri	CO 55	5	64.50	21	1:1.77	Local varieties	53.20	1:1.66
Thiruvallur	CR 1009	5	50.22	22	1:1.60	BPT 5204	41.32	1:1.54
Sivagangai	CSR 60	3	38.56	7	1:2.36	CO 50	36.00	1:2.17
Cuddalore	MTU 1156	5	71.93	57	1:2.85	CR 1009 SUB 1	45.82	1:1.50
Thiruvallur	MTU 1156	5	62.80	8	1:1.96	MTU 1010	58.10	1:1.77
Cuddalore	Ranjit Sub 1	5	68.98	51	1:2.71	CR 1009 SUB 1	45.82	1:1.50
Thiruvallur	Ranjit Sub 1	5	47.32	15	1:1.58	BPT 5204	41.32	1:1.54
Cuddalore	RNR 15048	5	19.10	10	1:2.42	ASD 16	17.40	1:2.40
Pudukkottai	RNR 15048	5	46.90	12	1:2.05	ADT 39	42.00	1:1.84
Pudukkottai	TKM 15	5	47.03	12	1:2.12	ADT 39	42.00	1:1.84
Kanyakumari	TPS 3	5	58.50	19	1:2.93	DRR DHAN 52	49.20	1:2.46
Sivagangai	TRY 4	3	42.32	18	1:2.59	CO 50	36.00	1:2.17
Puducherry								
Karaikal	TRY 5	5	45.42	12	1:2.36	BPT 5204	40.67	1:1.92

I am very proud to say that training and continuous handholding by KVK, Theni transformed me into an entrepreneur. I have started my journey with two banana products and now, I have 25 unique products. KVK is playing a vital role in empowering rural women in the district.

Ms. K. Preethi
Seepalakottai, Theni, TN

b. Millets

Finger millet variety ATL 1 performed better than farmers varieties with 15 to 41 per cent higher yield. Foxtail millet varieties ATL 1 and SiA 3088 performed better than farmers varieties with 47 and 30 per cent higher yield and economic returns. Pearl millet variety CO 10 performed better than CO 7 and other local varieties with 33 to 47 per cent higher yield (Table 3.1.4).

Table 3.1.4. Performance of millet varieties in On Farm Trials of Zone X

State and KVK	Treatment					Farmers practice		
	Variety	No. of Trials	Yield (q/ha)	% increase over FP	BCR	Variety	Yield (q/ha)	BCR
Finger millet								
Andhra Pradesh								
Ananthapuram (Kalyandurg)	Indravathi	5	23.22	22	1:2.00	Kalyani	18.97	1:1.45
East Godavari (Pandirimamidi)	Indravathi	3	9.60	54	1:1.79	Local variety	6.25	1:1.68
Kurnool (Yagantipalle)	Indravathi	6	20.89	20	1:2.02	Local variety	17.40	1:1.69
East Godavari (Pandirimamidi)	Vakula	3	8.75	40	1:1.77	Local variety	6.25	1:1.68
Ananthapuram (Kalyandurg)	Vegavathi	5	26.25	38	1:2.20	Kalyani	18.97	1:1.45
Kurnool (Yagantipalle)	Vegavathi	6	21.88	26	1:2.12	Local variety	17.40	1:1.69
Tamil Nadu								
Cuddalore	ATL 1	5	27.80	41	1:2.46	Local variety	19.70	1:2.30
Dharmapuri	ATL 1	5	22.45	22	1:2.29	Local variety	18.35	1:1.96
Erode	ATL 1	5	29.80	17	1:2.86	GPU 28	25.40	1:2.23
Virudhunagar	ATL 1	5	28.23	15	1:2.26	local variety	24.50	1:1.50
Dharmapuri	GPU 67	5	19.70	7	1:2.04	Local variety	18.35	1:1.96
Erode	ML 365	5	28.00	10	1:2.74	GPU 28	25.40	1:2.23
Cuddalore	VL 376	5	21.20	8	1:2.20	Local variety	19.70	1:2.30
Virudhunagar	VL 376	5	26.12	7	1:2.03	local variety	24.50	1:1.50
Foxtail millet								
Andhra Pradesh								
Srikakulam	Renadu	3	12.20	12	1:1.89	Konda korralu	10.90	1:1.83
Srikakulam	Suryanandi	3	11.60	6	1:1.86	Konda korralu	10.90	1:1.83
Tamil Nadu								
Cuddalore	ATL 1	5	19.85	47	1:1.64	Local variety	13.50	1:1.44
Cuddalore	SiA 3088	5	17.56	30	1:1.58	Local variety	13.50	1:1.44

State and KVK	Treatment					Farmers practice		
	Variety	No. of Trials	Yield (q/ha)	% increase over FP	BCR	Variety	Yield (q/ha)	BCR
Telangana								
Medak (DSS)	SiA 3222	5	9.62	10	1:1.82	Local variety	8.75	1:1.63
Little millet								
Tamil Nadu								
Thiruvannamalai	ATL 1	5	14.50	15	1:2.10	Local variety	12.62	1:1.85
Thiruvannamalai	DHLM 36-3	5	14.02	11	1:2.07	Local variety	12.62	1:1.85
Pearl millet								
Tamil Nadu								
Theni	ABV 04	5	20.01	17	1:2.39	Local variety	17.11	1:1.97
Cuddalore	CO 10	5	38.70	33	1:1.65	Local variety	29.15	1:1.57
Madurai	CO 10	0	32.52	47	1:2.49	CO 7	22.18	1:1.70
Theni	CO 10	5	23.21	36	1:2.83	Local variety	17.11	1:1.97
Cuddalore	Dhanasakthi	5	32.85	13	1:1.61	Local variety	29.15	1:1.57
Madurai	ICMV 221	0	29.64	34	1:2.27	CO 7	22.18	1:1.70

c. Pulses

Blackgram variety GGB 1 gave 15 to 29 per cent higher yield than PU 31 and variety VBN 11 gave 14 to 35 per cent higher yield than farmers varieties T9 and VBN 6. Chickpea variety NBeG 49 gave 9 to 54 per cent higher yield than famers varieties. Greengram varieties VBN 4 and 5 performed better than farmers varieties with 9 to 96 per cent higher yield and economic returns (Table 3.1.5).

Table 3.1.5. Performance of pulses varieties in On Farm Trials of Zone X

State and KVK	Treatment					Farmers practice		
	Variety	No. of Trials	Yield (q/ha)	% increase over FP	BCR	Variety	Yield (q/ha)	BCR
Blackgram								
Andhra Pradesh								
Kadapa (Vonipenta)	GBG 1	5	21.20	29	1:2.30	PU 31	16.40	1:1.64
Krishna (Garikapadu)	GBG 1	5	13.90	15	1:1.68	PU 31	12.10	1:1.49
Prakasam (Darsi)	GBG 1	5	11.25	18	1:1.64	PU 31	9.50	1:1.36
Krishna (Garikapadu)	GBG 12	5	14.10	17	1:1.86	PU 31	12.10	1:1.49
Kadapa (Utukur)	LRG 105	3	12.29	26	1:1.64	LRG 52	9.78	1:1.55
Prakasam (Darsi)	TBG 104	5	13.75	45	1:2.00	PU 31	9.50	1:1.36
Kadapa (Vonipenta)	TBG 129	5	19.20	17	1:2.00	PU 31	16.40	1:1.64
Guntur (Lam)	VBN 8	10	22.20	27	1:2.32	LBG 752	17.50	1:2.01
Tamil Nadu								
Kanyakumari	ADT 6	5	4.60	10	1:2.18	VBN 6	4.20	1:2.01
Perambalur	TBG 104	5	7.76	18	1:2.19	T 9	6.58	1:1.85
Thiruvallur	TBG 104	5	7.60	24	1:2.15	T 9	6.15	1:1.70
Kanyakumari	VBN 11	5	4.80	14	1:2.31	VBN 6	4.20	1:2.01
Perambalur	VBN 11	5	8.12	23	1:2.28	T 9	6.58	1:1.85
Thiruvallur	VBN 11	5	8.30	35	1:2.49	T 9	6.15	1:1.70

State and KVK	Treatment					Farmers practice		
	Variety	No. of Trials	Yield (q/ha)	% increase over FP	BCR	Variety	Yield (q/ha)	BCR
Chickpea								
Andhra Pradesh								
Nellore (Nellore)	NBeG 452	3	20.00	14	1:2.04	JG 11	17.50	1:1.60
Prakasam (Darsi)	NBeG 452	5	20.50	14	1:2.48	JG 11	18.00	1:2.18
Nellore (Nellore)	NBeG 49	3	19.50	11	1:1.93	JG 11	17.50	1:1.60
Prakasam (Darsi)	NBeG 49	5	19.75	10	1:2.39	JG 11	18.00	1:2.18
Tamil Nadu								
Krishnagiri	NBeG 49	5	10.67	9	1:1.57	CO 4	9.76	1:1.31
Dindigul	NBeG 49	5	14.60	54	1:2.62	Local variety	9.50	1:1.45
Dindigul	NBeG 119	5	13.50	42	1:2.63	Local variety	9.50	1:1.45
Krishnagiri	SA 1	5	12.33	26	1:1.76	CO 4	9.76	1:1.31
Greengram								
Andhra Pradesh								
Ananthapuram (Reddipalli)	LGG 574	5	11.74	6	1:2.52	WGG 42	11.07	1:2.59
Ananthapuram (Reddipalli)	LGG 607	5	12.54	13	1:2.74	WGG 42	11.07	1:2.59
Tamil Nadu								
Virudhunagar	K 1812	5	33.70	94	1:2.91	TMV 7	17.40	1:2.71
Pudukkottai	MH 41	5	9.63	17	1:1.74	VBN 3	8.25	1:1.67
Cuddalore	MH 421	5	13.63	92	1:2.41	Local variety	7.09	1:1.49
Thiruvallur	MH 421	5	8.20	5	1:2.01	CO 7	7.80	1:1.92
Nagapattinam	VBN 4	5	5.69	28	1:1.90	ADT 3	4.43	1:1.34
Tirunelveli	VBN 4	5	8.50	9	1:2.18	VBN (Gg) 2	7.80	1:1.93
Ariyalur	VBN 5	5	7.40	9	1:2.47	VBN 2	6.80	1:2.22
Cuddalore	VBN 5	5	13.90	96	1:2.44	Local variety	7.09	1:1.49
Pudukkottai	VBN 5	5	10.18	23	1:1.98	VBN 3	8.25	1:1.67
Thiruvallur	VBN 5	5	9.00	15	1:2.22	CO 7	7.80	1:1.92
Virudhunagar	VRI 10	5	31.80	83	1:2.75	TMV 7	17.40	1:2.71
Ariyalur	WGG 42	5	7.90	16	1:2.82	VBN 2	6.80	1:2.22
Nagapattinam	WGG 42	5	5.28	19	1:1.69	ADT 3	4.43	1:1.34
Tirunelveli	WGG 42	5	8.12	4	1:2.05	VBN (Gg) 2	7.80	1:1.93
Redgram								
Andhra Pradesh								
Chittoor (RASS)	LRG 105	5	11.08	16	1:1.22	LRG 52	9.56	1:1.13
Guntur (Lam)	LRG 105	10	21.60	15	1:2.58	LRG 52	18.80	1:2.07
Kurnool (Yagantipalle)	LRG 105	6	9.32	21	1:1.71	Local variety	7.70	1:1.42
Prakasam (Darsi)	LRG 105	5	6.00	85	1:1.89	LRG 52	3.25	1:1.02
Guntur (Lam)	LRG 133-33	10	20.70	10	1:2.39	LRG 52	18.80	1:2.07
Kurnool (Yagantipalle)	LRG 133-33	6	10.35	34	1:1.92	Local variety	7.70	1:1.42
Chittoor (RASS)	TRG 59	5	9.85	3	1:1.14	LRG 52	9.56	1:1.13
Prakasam (Darsi)	TRG 59	5	7.75	138	1:2.44	LRG 52	3.25	1:1.02
Tamil Nadu								
Vellore	CO 8	5	16.21	22	1:2.87	Local variety	13.32	1:2.00
Vellore	WRG 93	5	15.23	14	1:2.35	Local variety	13.32	1:2.00

d. Oilseeds

Groundnut variety K 1812, BSR 2, and VRI 10 performed better than K 6 and other local varieties with 10 to 58 per cent higher yield and economic returns (Table 3.1.6).

Table 3.1.6. Performance of oilseed varieties in On Farm Trials of Zone X

State and KVK	Treatment					Farmers practice		
	Variety	No. of Trials	Yield (q/ha)	% increase over FP	BCR	Variety	Yield (q/ha)	BCR
Castor								
Andhra Pradesh								
Kurnool (Yagantipalle)	DCH 519	6	14.20	30	1:2.50	Local variety	10.92	1:2.14
Kurnool (Yagantipalle)	ICH 66	6	15.92	46	1:2.67	Local variety	10.92	1:2.14
Groundnut								
Andhra Pradesh								
Chittoor (RASS)	TCGS 1043	5	15.38	16	1:1.83	Narayani	13.25	1:1.74
East Godavari (Kalavacharla)	TCGS 1043	5	39.00	22	1:1.72	K 6	32.00	1:1.57
Ananthapuram (Kalyandurg)	K 1812	5	13.51	30	1:2.06	K 6	10.40	1:1.74
Chittoor (RASS)	K 1812	5	19.75	49	1:1.76	Narayani	13.25	1:1.74
East Godavari (Kalavacharla)	K 1812	5	44.00	38	1:1.81	K 6	32.00	1:1.57
Nellore (Nellore)	K 1812	3	36.61	31	1:1.43	TAG 24	27.96	1:1.40
Srikakulam	K 1812	3	15.30	50	1:2.11	K 6	10.20	1:1.27
Visakhapatnam (Kondempudi)	K 1812	5	18.10	25	1:4.22	Local variety	14.52	1:3.38
Vizianagaram	K 1812	5	20.15	22	1:3.45	K 6	16.55	1:2.88
Srikakulam	TCGS 1157	3	14.00	37	1:1.92	K 6	10.20	1:1.27
Visakhapatnam (Kondempudi)	TCGS 1157	5	15.91	10	1:3.71	Local variety	14.52	1:3.38
Vizianagaram	TCGS 1157	5	18.30	11	1:3.16	K 6	16.55	1:2.88
Ananthapuram (Kalyandurg)	TCGS 1694	5	12.47	20	1:2.10	K 6	10.40	1:1.74
Nellore (Nellore)	TCGS 1694	3	31.68	13	1:1.50	TAG 24	27.96	1:1.4
Tamil Nadu								
Coimbatore	BSR 2	5	25.08	44	1:1.32	Dharani	17.45	1:1.83
Erode	BSR 2	3	21.47	26	1:2.14	CO 2	16.98	1:1.76
Namakkal	BSR 2	5	16.24	14	1:2.44	Dharani	14.20	1:2.17
Perambalur	BSR 2	5	21.07	24	1:2.38	TMV 7	17.02	1:1.95
Tirunelveli	BSR 2	5	24.00	25	1:2.18	TMV 7	19.20	1:1.67
Thoothukudi	GJG 32	5	16.60	14	1:2.09	TMV 7	14.50	1:1.82
Tirunelveli	GJG 32	5	22.50	17	1:2.02	TMV 7	19.20	1:1.67
Villupuram	GJG 33	5	21.90	47	1:2.89	TMV 13	14.85	1:2.13
Perambalur	ICGV 06420	5	19.79	16	1:2.21	TMV 7	17.02	1:1.95
Coimbatore	K 1812	5	23.24	33	1:1.69	Dharani	17.45	1:1.83
Dindigul	K 1812	5	18.80	37	1:2.04	VRI 2	13.70	1:1.65
Erode	K 1812	3	23.80	40	1:2.35	CO 2	16.98	1:1.76
Namakkal	K 1812	5	22.45	58	1:3.06	Dharani	14.20	1:2.17
Pudukkottai	K 1812	5	27.00	35	1:2.45	VRI 2/TMV 7	20.00	1:1.83
Salem	K 1812	5	29.32	45	1:1.89	TMV 2	20.20	1:1.36

State and KVK	Treatment					Farmers practice		
	Variety	No. of Trials	Yield (q/ha)	% increase over FP	BCR	Variety	Yield (q/ha)	BCR
Theni	K 1812	5	17.18	36	1:2.12	Local varieties	12.62	1:1.59
Thiruvarur	K 1812	5	21.63	22	1:2.70	Western 44 / G7	17.80	1:2.23
Vellore	K 1812	5	32.01	19	1:3.19	Local varieties	26.93	1:1.61
Villupuram II	K 1812	14	18.06	37	1:2.72	TMV 7	13.15	1:2.13
Virudhunagar	MH 421	5	8.90	17	1:2.67	VBN 4	7.60	1:1.72
Thoothukudi	TMV 14	5	18.10	25	1:2.32	TMV 7	14.50	1:1.82
Villupuram	TMV 14	5	21.35	44	1:2.94	TMV 13	14.85	1:2.13
Karur	TMV 14	5	22.75	44	1:1.59	TMV 14	15.75	1:1.43
Virudhunagar	VBN 5	5	9.20	21	1:2.87	VBN 4	7.60	1:1.72
Salem	VRI 10	5	25.40	26	1:1.70	TMV 2	20.20	1:1.36
Thiruvarur	VRI 10	5	23.45	32	1:2.93	Western 44/ G7	17.80	1:2.23
Vellore	VRI 10	5	31.51	17	1:3.42	Local varieties	26.93	1:1.61
Villupuram	VRI 10	5	26.25	35	1:1.56	TMV 13	19.50	1:1.18
Villupuram II	VRI 10	14	18.24	39	1:2.84	TMV 7	13.15	1:2.13
Dindigul	VRI 8	5	17.10	25	1:2.18	VRI 2	13.70	1:1.65
Pudukkottai	VRI 9	5	26.88	34	1:2.39	VRI 2/TMV 7	20.00	1:1.83
Theni	VRI 9	5	19.88	58	1:2.48	Local varieties	12.62	1:1.59
Tiruppur	VRI 9	5	15.50	15	1:2.38	Local varieties	13.50	1:2.00
Telangana								
Adilabad	K 1812	3	22.50	13	1:2.69	TAG 24	20.00	1:2.55
Khammam (Wyra)	K 1812	3	33.75	21	1:2.41	K 6	28.00	1:1.96
Karimnagar (Jammikunta)	K 1812	3	31.25	53	1:2.85	K 6	20.37	1:2.41
Mahabubnagar (Palem)	K 1812	2	34.92	51	1:1.68	K 6	23.08	1:1.62

KVK Medak provided early fruiting, good quality and high yielding Arka Prasan ribbed guard seed. Under drip irrigation and ICM I got 35t/ha yield. With an investment of 1.2 Lakh, I got a net income of Rs. 5.8 Lakh. I also distributed seeds to my neighboring farmers.

Mr. Balaram Reddy
Gangwar village, Medak, TS

Horticultural Crops

a. Vegetables

Bhendi varieties Arka Nikhta and CO Bh 4 gave 7 to 70 per cent higher yield and economic returns. Chilli varieties LCA 620, LCA 625, Arka Saanvi, CO Ch 1 were assessed by KVKs and the varieties gave 12 to 92 per cent higher yield than farmers varieties. Ridge gourd varieties Arka Prasan and Arka Vikram gave 8 to 33 per cent higher yield than farmers varieties. Tomato varieties Arka Samrat, Arka Abhed CO TH 4 were assessed and found to yield 7 to 67 per cent higher than the farmers varieties (table 3.1.7).

Table 3.1.7. Performance of vegetable varieties in On Farm Trials of Zone X

State and KVK	Treatment					Farmers practice		
	Variety	No. of Trials	Yield (q/ha)	% increase over FP	BCR	Variety	Yield (q/ha)	BCR
Amaranthus								
Andhra Pradesh								
Chittoor (RASS)	Arka Samraksha	16	72.00	11	1:1.73	Local variety	65.00	1:1.53
Chittoor (RASS)	Arka Varna	16	68.50	5	1:1.60	Local variety	65.00	1:1.53
Tamil Nadu								
Thiruvarur	Arka Varna	5	93.60	21	1:1.74	Local variety	77.30	1:1.68
Thiruvarur	PLR 1	5	86.30	12	1:1.80	Local variety	77.30	1:1.68
Bhindi/Okra								
Andhra Pradesh								
Kurnool (Yagantipalle)	Arka Anamika	5	165	12	1:3.83	Surabhi 33	148	1:3.35
Krishna (Ghantasala)	Arka Nikhita	5	237	14	1:2.95	Radhika	208	1:2.53
Prakasam (Kandukur)	Arka Nikitha	10	80	7	1:1.58	Reeta	75	1:1.51
Ananthapuram (Kalyandurg)	CO Bh 4	5	198	12	1:4.22	Surabhi 33	178	1:3.27
Prakasam (Kandukur)	CO Bh 4	10	80	7	1:1.58	Reeta	75	1:1.51
Krishna (Ghantasala)	CO Bh 4	5	229	10	1:2.86	Radhika	208	1:2.53
Tamil Nadu								
Dharmapuri	Arka Nikita	5	189	33	1:2.89	Private hybrid	142	1:2.68
Thiruvallur	Arka Nikita	5	130	30	1:2.92	Local variety	100	1:2.16
Thiruvarur	Arka Nikita	5	356	50	1:1.54	Private hybrid	237	1:1.33
Thiruvallur	CO Bh 4	5	170	70	1:3.09	Local variety	100	1:2.16
Dharmapuri	CO Bh 4	5	174	23	1:2.79	Private hybrid	142	1:2.68
Telangana								
Karimnagar (Jammikunta)	Kashi Lalima	12	124	17	1:3.11	Private hybrid	106	1:2.54
Bottlegourd								
Tamil Nadu								
Thiruvarur	Arka Ganga	5	47.66	74	1:1.66	Local variety	27.33	1:1.41
Coimbatore	Arka Nutan	5	314	5	1:2.59	Local variety	298	1:2.25
Coimbatore	CO 1	5	364	22	1:3.21	Local variety	298	1:2.25
Thiruvarur	CO 1	5	37.20	36	1:1.56	Local variety	27.33	1:1.41
Brinjal								
Tamil Nadu								
Cuddalore	Arka Neelkanth	5	150	49	1:3.07	Local variety	101	1:2.25

State and KVK	Treatment					Farmers practice		
	Variety	No. of Trials	Yield (q/ha)	% increase over FP	BCR	Variety	Yield (q/ha)	BCR
Madurai	Arka Neelkanth	5	430	8	1:2.33	Simran	400	1:2.2
Ramanathapuram	CO 2	5	215	54	1:3.07	Pandiyur brinjal	140	1:2.33
Villupuram	Grafted on *Solanum torvum*	5	615	92	1:2.04	Seedlings	321	1:1.65
Villupuram	Grafted on local RS	5	364	13	1:1.7	Seedlings	321	1:1.65
Cuddalore	MDU 2	5	200	99	1:4.1	Local variety	101	1:2.25
Ramanathapuram	MDU 2	5	225	61	1:3.21	Pandiyur brinjal	140	1:2.33
Madurai	VRM Br 1	5	525	31	1:2.5	Simran	400	1:2.2
Green chilli								
Andhra Pradesh								
Chittoor (Kalikiri)	Arka Gagan	5	52.30	109	1:2.69	Private hybrid	25.00	1:1.25
Srikakulam	Arka Kyathi	5	180	18	1:3.72	Private hybrid	153	1:2.91
Chittoor (Kalikiri)	Arka Megana	5	51.20	105	1:2.63	Private hybrid	25	1:1.25
Nellore (Periyavaram)	LCA 620	5	63.75	16	1:2.29	Private hybrid	55.19	1:1.87
Prakasam (Darsi)	LCA 620	5	39.00	26	1:1.50	Private hybrid	31	1:1.28
Nellore (Periyavaram)	LCA 625	5	65.50	19	1:2.33	Private hybrid	55.19	1:1.87
Prakasam (Darsi)	LCA 625	5	48.00	55	1:1.60	Private hybrid	31	1:1.28
Srikakulam	LCH 111	5	175	15	1:3.57	Privet Hybrid	153	1:2.91
Puducherry								
Karaikal	Arka Saanvi	5	209	42	1:2.61	Local variety	146	1:2.08
Karaikal	CO Ch 1	5	225	53	1:2.74	Local variety	146	1:2.08
Tamil Nadu								
Dindigul	Arka Saanvi	5	220	15	1:3.09	Priyanga	196	1:2.61
Thiruvannamalai	Arka Saanvi	5	218	12	1:2.60	Priyanka	195	1:2.32
Perambalur	Arka Gagan	5	156	18	1:2.75	private hybrid	133	1:2.37
Thiruvallur	Arka Khyati	5	121	23	1:2.06	US 341	99	1:2.01
Tiruchirappalli	Arka Meghana	5	56.80	8	1:1.39	Local variety	52.7	1:1.34
Dharmapuri	Arka Saanvi	5	92.30	18	1:2.23	Private hybrid	78.2	1:1.92
Krishnagiri	Arka Saanvi	5	198	24	1:2.57	Sierra	161	1:1.99
Karur	Arka Tanvi	3	31.15	13	1:2.59	Private Hybrid	27.46	1:2.31
Villupuram II	Arka Thanvi	5	87.50	67	1:1.54	US 612	52.5	1:1.35
Krishnagiri	CO Ch 1	5	182	13	1:2.34	Sierra	161	1:1.99
Tiruchirappalli	CO Ch 1	5	59.40	13	1:1.41	Local variety	52.7	1:1.34
Dharmapuri	CO Ch 1	5	97.50	25	1:2.31	Private hybrid	78.2	1:1.92
Dindigul	CO Ch 1	5	243	27	1:3.58	Priyanga	192	1:2.61
Thiruvallur	CO Ch 1	5	187	89	1:2.14	US 341	99	1:2.01
Thiruvannamalai	CO Ch 1	5	240	23	1:2.89	Priyanka	195	1:2.32
Villupuram II	CO Ch 1	5	101	92	1:1.59	US 612	52.5	1:1.35
Onion								
Andhra Pradesh								
Kadapa (Vonipenta)	Agri found light red	5	210	5	1:1.72	KP	200	1:1.77
Kurnool (Banavasi)	Arka Bheem	5	38.54	36	1:2.53	Local variety	28.26	1:1.61
Kurnool (Banavasi)	Arka Kalyan	5	36.27	28	1:2.33	Local variety	28.26	1:1.61

State and KVK	Treatment					Farmers practice		
	Variety	No. of Trials	Yield (q/ha)	% increase over FP	BCR	Variety	Yield (q/ha)	BCR
Ananthapuram (Kalyandurg)	NHRDF 3	5	24.32	9	1:1.47	Pedda Ballery	22.24	1:1.43
Ananthapuram (Kalyandurg)	NHRDF 4	5	27.54	24	1:1.74	Pedda Ballery	22.24	1:1.43
Kadapa (Vonipenta)	NHRDF 883	5	214	7	1:1.71	KP	200	1:1.77
Kadapa (Utukur)	Red 4	3	212	37	1:2.53	Panchaganga	155	1:1.64
Kurnool (Yagantipalle)	Red 4	5	266	19	1:1.74	Panchaganga	223	1:1.43
Tamil Nadu								
Tirunelveli	Bhima dark red	5	220	18	1:4.64	Local variety	186	1:2.38
Thiruvarur	CO 6	5	189	13	1:2.97	CO 5	168	1:2.76
Telangana								
Mahabubnagar (YFA)	Bhima Kiran	11	192	15	1:2.03	local light red	167	1:1.43
Nalgonda (Gaddipally)	Bhima Shweta	4	277	44	1:1.94	Private variety	192	1:1.43
Mahabubnagar (YFA)	Bhima Super	11	205	23	1:2.10	local light red	167	1:1.43
Ridge gourd								
Andhra Pradesh								
Krishna (Garikapadu)	Arka Prasan	5	252	24	1:1.57	Local variety	204	1:1.48
Kurnool (Banavasi)	Arka Prasan	5	25.90	12	1:1.87	Local variety	23.1	1:1.49
Nellore (Periyavaram)	Arka Prasan	5	240	33	1:2.40	Private hybrid	180	1:1.71
Kadapa (Vonipenta)	Arka Prasan	5	16.40	8	1:3.40	Local variety	15.2	1:3.10
West Godavari (Undi)	Arka Prasan	5	103	8	1:1.78	Jaipur long	95	1:1.64
Kurnool (Banavasi)	Arka Vikram	5	28.20	22	1:2.35	Local variety	23.1	1:1.49
Nellore (Periyavaram)	Arka Vikram	5	212	18	1:2.05	Private hybrid	180	1:1.71
Kadapa (Vonipenta)	Arka Vikram	5	17.50	15	1:3.47	Local variety	15.2	1:3.10
Krishna (Garikapadu)	Jaipur Long	5	232	14	1:1.54	Local variety	204	1:1.48
Tamil Nadu								
Dindigul	Arka Vikram	5	234	7	1:3.34	Latika	218	1:3.07
Dindigul	CO H 1	5	263	20	1:3.83	Latika	218	1:3.07
Telangana								
Karimnagar (Jammikunta)	Arka Prasan	12	187	14	1:5.52	Private hybrid	164	1:4.43
Karimnagar (Ramagirikhilla)	Arka Prasan	5	188	15	1:1.78	Saniya 4	163	1:1.72
Nalgonda (Gaddipally)	Arka Prasan	6	268	19	1:2.54	Private Hybrids	224	1:2.19
Nalgonda (Kampasagar)	Arka Prasan	3	39.50	12	1:7.39	Private Hybrids	35.2	1:5.55
Tomato								
Andhra Pradesh								
East Godavari (Pandirimamidi)	Arka Abhed	3	536	23	1:3.95	Private hybrids	436	1:3.29
Chittoor (RASS)	Arka Abhed	16	580	20	1:3.73	Local variety	485	1:2.97
Kadapa (Utukur)	Arka Abhed	3	585	19	1:1.79	Sivam	490	1:1.26
Krishna (Ghantasala)	Arka Abhed	5	525	14	1:2.58	Chirayu	462	1:2.25
Prakasam (Darsi)	Arka Abhed	5	50.90	45	1:1.63	PHS 448	35.1	1:1.59
Visakhapatnam (BCT)	Arka Abhed	5	83.00	17	1:1.64	Lakhsmi	71	1:1.84
Visakhapatnam (BCT)	Arka Abhed	5	569	37	1:2.02	Lakhsmi	409	1:1.54
Chittoor (Kalikiri)	Arka Apeksha	15	830	17	1:1.5	Sahoo	710	1:1.5

State and KVK	Treatment					Farmers practice		
	Variety	No. of Trials	Yield (q/ha)	% increase over FP	BCR	Variety	Yield (q/ha)	BCR
Chittoor (RASS)	Arka Samrat	16	545	12	1:3.41	Local variety	485	1:2.97
East Godavari (Pandirimamidi)	Arka Samrat	3	482	10	1:3.55	Private hybrids	436	1:3.29
Kadapa (Utukur)	Arka Samrat	3	513	5	1:1.49	Sivam	490	1:1.26
Krishna (Ghantasala)	Arka Samrat	5	512	11	1:2.52	Chirayu	462	1:2.25
Prakasam (Darsi)	Arka Samrat	5	46.30	32	1:1.60	PHS 448	35.1	1:1.59
Visakhapatnam (BCT)	Arka Samrat	5	76.00	7	1:1.59	Lakhsmi	71	1:1.84
Visakhapatnam (BCT)	Arka Samrat	5	579	42	1:2.08	Lakhsmi	409	1:1.54
Tamil Nadu								
Dindigul	Arka Abhed	5	648	11	1:3.50	Private hybrid	582	1:3.11
Thiruvannamalai	Arka Abhed	5	823	14	1:2.81	Lakhsmi	719	1:2.4
Kanyakumari	Arka Abhed	5	441	33	1:1.99	Lakshmi	331	1:1.50
Theni	Arka Apeksha	5	767	12	1:3.20	Sivam	684	1:2.77
Theni	CO 4	5	885	29	1:3.25	Sivam	684	1:2.77
Dindigul	CO TH 4	5	658	13	1:3.57	Private hybrid	582	1:3.11
Kanyakumari	CO TH 4	5	551	67	1:2.49	Lakshmi	331	1:1.50
Thiruvannamalai	CO TH 4	5	768	7	1:2.56	Lakhsmi	719	1:2.40
Telangana								
Mancherial	Arka Abhed	3	498	45	1:2.12	PHS 448	343	1:1.76
Nalgonda (Gaddipally)	Arka Abhed	6	543	16	1:3.01	Private Hybrids	467	1:2.74
Nalgonda (Kampasagar)	Arka Abhed	3	48.60	30	1:4.50	Private Hybrids	37.5	1:2.50
Ranga Reddy	Arka Abhed	5	420	22	1:2.17	US 440	343	1:1.51
Ranga Reddy	Arka Samrat	5	415	21	1:2.15	US 440	343	1:1.51

OFT on pearl millet – KVK, Madurai, Tamil Nadu

b. Flowers fruits, spices and condiments

Gladiolus varieties Arka Amar and Arka Ayush yielded 7 to 15 per cent higher number of flowers than farmers varieties. Watermelon variety Arka Shyama and Arka Muthu gave 5 to 12 per cent higher yield than farmers varieties (Table 3.1.8).

Table 3.1.8. Performance of varieties of flowers, fruits, and spices in On Farm Trials of Zone X

State and KVK	Treatment					Farmers practice		
	Variety	No. of Trials	Yield (q/ha)	% increase over FP	BCR	Variety	Yield (q/ha)	BCR
Flowers								
Aster								
Andhra Pradesh								
Ananthapuram (Reddipalli)	Arka Chandrika	5	12.50	20	1:2.19	Arka Chandrakant	10.39	1:1.83
China Aster								
Vizianagaram	Arka Aadhya	5	12.15	32	1:2.78	Local white	9.23	1:2.11
Vizianagaram	Arka Poornima	5	13.90	51	1:3.18	Local white	9.23	1:2.11
Gladiolus								
Visakhapatnam (Kondempudi)	Arka Amar	5	176250	15	1:1.28	Arka Pradham	153750	1:1.12
Vizianagaram	Arka Amar	5	255750	15	1:2.20	Local yellow	222750	1:1.49
Visakhapatnam (Kondempudi)	Arka Ayush	5	165000	7	1:1.20	Arka Pradham	153750	1:1.12
Vizianagaram	Arka Ayush	5	244750	10	1:2.11	Local yellow	222750	1:1.49
Marigold								
Kadapa (Utukur)	Arka Abhi	5	136	48	1:2.18	Yellow maxima	92	1:1.67
Visakhapatnam (Kondempudi)	Arka Abhi	5	117	22	1:3.61	Yellow maxima	96.25	1:2.98
Srikakulam	Arka Bangara-2	5	72.64	51	1:3.01	Seracole	48.25	1:2.05
Visakhapatnam (Kondempudi)	Arka Bhanu	5	109	13	1:3.34	Yellow maxima	96.25	1:2.98
Srikakulam	Yellow dollar	5	70.96	47	1:2.94	Seracole	48.25	1:2.05
Tuberose								
Tamil Nadu								
Thiruvarur	Arka Nirantara	5	78.60	16	1:4.89	Local varieties	67.9	1:3.72
Thiruvarur	Prajwal	5	92.00	35	1:5.69	Local varieties	67.9	1:3.72
Fruits								
Banana								
Tamil Nadu								
Karur	Kaveri Kalki	3	480	11	1:1.82	Karpooravalli	431	1:1.63
Karur	Udhayam	3	571	32	1:2.11	Karpooravalli	431	1:1.63
Watermelon								
Andhra Pradesh								
Nellore (Periyavaram)	Arka Muthu	5	480	3	1:2.26	Private hybrids	465	1:1.77
Nellore (Periyavaram)	Arka Shyama	5	520	12	1:2.59	Private hybrids	465	1:1.77
East Godavari (Kalavacharla)	Arka Muthu	5	293	11	1:2.60	Shakkar Plus	263	1:2.34
East Godavari (Kalavacharla)	Arka Shyama	5	350	33	1:3.11	Shakkar Plus	263	1:2.34
Tamil Nadu								

State and KVK	Treatment					Farmers practice		
	Variety	No. of Trials	Yield (q/ha)	% increase over FP	BCR	Variety	Yield (q/ha)	BCR
Thoothukudi	Arka Akash	5	480	14	1:2.86	Private hybrids	420	1:2.50
Thoothukudi	Arka Shyama	5	584	39	1:3.48	Private hybrids	420	1:2.50
Telangana								
Karimnagar (Jammikunta)	Arka Shyama	12	326	21	1:4.97	Private hybrids	270	1:3.19
Karimnagar (Ramagirikhilla)	Arka Shyama	5	315	17	1:1.74	Andaman	270	1:1.62
Medak (Tuniki)	Arka Shyama	6	400	7	1:2.00	Melody	375	1:1.81
Spices and condiments								
Red Chille								
Andhra Pradesh								
Visakhapatnam (Kondempudi)	LCA 620	5	33.15	13	1:2.27	Potti Mirapa	29.40	1:2.17
Visakhapatnam (Kondempudi)	LCA 625	5	38.13	30	1:2.62	Potti Mirapa	29.40	1:2.17
Ananthapuram (Kalyandurg)	LCA 643	5	11.02	22	1:3	HPH 2043	9.040	1:2.07
Tamil Nadu								
Ariyalur	Arka Tanvi	5	36.20	11	1:3.05	Private hybrids	32.50	1:2.88
Ariyalur	CO (Ch) 1	5	43.76	35	1:3.68	Private hybrids	32.50	1:2.88
Telangana								
Khammam (Wyra)	Arka Tejasvi	3	58.75	7	1:2.74	Yashaswini	55.00	1:2.41

3.1.2 Crop production technologies

a. Integrated Nutrient Management

The integrated nutrient management practices assessed by KVKs include Soil Test Based fertilizer management, organic farming, bio-fertilizers, nutrient solubilizers and mobilizers, crop specific nutrient mixture for soil application and foliar spray. A total of 95 technologies on INM including 64 on agricultural crops and 31 on horticultural crops were assessed by 33 KVKs in the Zone. In agricultural crops, 39 INM technologies were assessed for paddy by 19 KVKs wherein average yield was 53.63 q/ha as against 46.84 q/ha in farmer's practice (14.5% higher). INM for groundnut gave an average yield of 21.42 q/ha which was 14.8 per cent higher than farmers practice. The average yield in the INM plots of tomato was 473.32 q/ha while in farmer's practice, it was 376.71 q/ha.

I am a dry land tribal farmer. Under the guidance of KVK Palem, I established climate resilient IFS system in one hectare and I am earning a net income of Rs 14,000 to 42,000 per month. I have convinced 24 farmers in my locality to adopt this model. I received IARI Innovative Farmer Award.

Mr. B.Raju
Gummakonda village, Nagarkurnool district, TS

b. Integrated Crop Management

Integrated Crop Management technologies in paddy gave an average grain yield of 55.94 q/ha while in farmer's practice, it was 47.20 q/ha. ICM practices in cotton gave 29 per cent higher yield than farmer's practice. ICM technologies gave 33 and 45 per cent higher yields in vegetables and fruits, respectively than farmers with higher economic returns.

3.1.3 Integrated Pest and Disease Management

a. Integrated Pest Management

The mean increase in yield due to integrated pest management technologies assessed by KVKs in the Zone was 35 per cent with higher economic returns. IPM for maize gave an average yield of 64.79 q/ha as against 55.84 q/ha in farmer's practice. In paddy, integrated pest management practices gave an average grain yield of 59.73 which was 15 per cent higher than farmer's practice. IPM technologies assessed on cotton gave an average yield of 26.47 q/ha as against 22.41 q/ha in farmer's practice. IPM technologies in fruits increased the yield at an average of 40 per cent over farmer's practice. The average yields of brinjal and green chillies 93 were 143.50 and 143.93 q/ha, respectively while in farmer's practice, the average yields were 113.12 and 128.69 q/ha, respectively.

b. Integrated Disease Management

Integrated Disease Management practices assessed by KVKs included chemical control, microbial control, inter cropping and tolerant / resistant varieties. Integrated disease management technology packages for agricultural and horticultural crops resulted in an average yield increase of 20 per cent over farmer's practice. In paddy, IDM technologies gave an average grain yield of 51.89 q/ha while in farmer's practice, it was 47.40 q/ha. IDM package in cotton increased the yield by 23 per cent over farmer's practice.

3.1.4. Livestock, Poultry and Fishery

For the control and management of various disease in cattle, TANUCHEK SCC kit, Surf Field Mastitis Test (SFMT) reagent, herbal acaricide, Butox, CIRG, Herbal extract, Ivermectin, Poly Herbal Spray, TRPVB Tick shield, Ethno veterinary practices, Megatex etc. were assessed against farmer's practices which resulted higher milk yield and healthy animals. Poultry breeds Ghagus, Vanasree, Rajashree, Nandanam Broiler, Naked neck and quail breeds Namkkal gold were assessed against conventional breeds and were found to yield 70 per cent higher egg and meat. Fodder sorghum varieties CoFS 29 and CoFS 33 were assessed for their performance against farmer's practices and were found to yield 54.11 and 68.04 q/ha fodder yield as against 31.5 q/ha in farmer's practice.

3.1.5 Women Empowerment and enterprises

Enterprises like sericulture, mushroom production, fruit preservation, solar drier based value addition, value added banana products manufacturing, health mix preparation, Hibuscus based value added products, value added millet products, seaweed production *etc*., were assessed in terms of production and income. Value addition to millets in the form of cookies, flavored millet cookies with medicinal plants *etc*. were assessed for their potential as an enterprise for women. Candy making and other preserved fruit products were also assessed as potential enterprise for women. Health mix, ready to cook food, breakfast mix are some of the other technologies that were assessed as potential enterprises as well as healthy and nutritious food for children and adults.

3.1.6. Drudgery reduction technologies

Drudgery reduction and labourer saving tools and machineries like cotton shredder, seed cum ferti drill, seed drill, groundnut digger cum stripper, groundnut stripper, sub-soiler, etc., were assessed against Farmer's practice in terms of time saved, additional yield obtained *etc*.

Evaluation of Seed Cum Ferti-Drill in Groundnut- KVK, Karimnagar (Jammikunta), Telangana

Assessment of Solar drying methods of fish- KVK, Thoothukudi, Tamil Nadu

Little millet under assessment - KVK, Thiruvannamalai , Tamil Nadu

3.2 Frontline Demonstrations

Frontline Demonstrations were organized by the KVKs to demonstrate the potential of crop varieties, crop and animal husbandry technologies and agricultural implements at several location-specific farming and agro-ecological situations. Training programmes and field days were organized for extension workers and farmers for rapid dissemination of improved technologies.

A total of 11959 demonstrations were conducted in 3130.56 ha on field crops, horticultural crops, tools and implements, livestock, enterprises and women and children welfare by KVKs in Zone X (Table 3.2.1). In crops, 7430 demonstrations were conducted by 71 KVKs in Zone-X covering cereals, millets, pulses, oilseeds, commercial crops, fodder crops, vegetables, fruits, flowers, spices, plantation crops and medicinal plants in 2668.76 ha. Among the crops, 4235 demonstrations were conducted on field crops and 3195 on horticultural crops. A total of 520 demonstrations were conducted on hybrids, 448 on tools and implements, 2291 on livestock, 1136 on various enterprises and 134 on women and children related demonstrations. Among agricultural crops, 1236 demonstrations were conducted on rice varieties and other production and protection technologies (Table 3.2.2). In millets out of 570 demonstrations, 140 were in sorghum, 135 on finger millet and 110 on foxtail millet. In pulses (other than CFLD), out of 851 demonstrations, 440 were in blackgram, 156 in redgram 150 in chickpea and 85 in greengram. Out of 526 demonstrations in oilseeds (other than CFLD), 396 were in groundnut and 65 in sesamum. Among the commercial crops, 160 were in sugarcane and 66 in mulberry. Among fibre crops, 238 demonstrations were in cotton. Among 166 demonstrations on fodder crops, 70 were on fodder sorghum. Among 1394 demonstrations in vegetables, 237 were on tomato, 198 on brinjal, 153 each on green chilli and ridge gourd. Out of 150 demonstrations on tuber crops, 145 were on tapioca. Out of 766 demonstrations in fruits, 266 were in banana, 219 in mango and 96 in guava. In total, 165 demonstrations were conducted on flowers including jasmine, tuberose, chrysanthemum, and marigold. Among 310 demonstrations on spices and condiments, 120 were on dry chillies and 108 on turmeric. Among plantation crops, 200 demonstrations were on coconut, 80 on cashew and 70 on oil palm.

a. Crops

In crops category, out of 3403 demonstrations in Tamil Nadu, 739 were in cereals and 554 in vegetables (Table 3.2.2). In Andhra Pradesh, out of 2715 demonstrations on crops, 463 were in cereals, 406 in vegetables, 354 in fruits, 340 in pulses and 270 in millets. Out of 1187 demonstrations in Telangana, 424 in vegetables, 223 in Cereals and 141 in fruits. In Puducherry, out of 125 demonstrations on crops, 45 were in cereals and 25 in other horticultural crops.

b. Hybrids

A total of 520 demonstrations were conducted on crop hybrids, out of which 298 were by KVKs of Tamil

Demonstration of IISR Turmeric special – KVK, Adilabad, Telangana

Demonstration of ridge gourd variety Arka Prasan- KVK, Mahaboobnagar, Telangana

Nadu, 106 by Andhra Pradesh, 106 by Telangana and 10 by Puducherry (Table 3.2.3). Among the crops, 112 demonstrations were in maize, 114 in tomato and 50 in bhendi/okra.

c. Tools and Implements

Out of 448 demonstrations conducted on tools and implements, 234 were by KVKs of Tamil Nadu, 67 by Andhra Pradesh, 144 by Telangana and 3 by Puducherry (Table 3.2.4).

d. Livestock, poultry and fishery

KVKs in the Zone conducted 2291 demonstrations on livestock, poultry and fishery involving 3526751 animals, poultry birds and fish fingerlings (Table 3.2.5). Among them, 756 demonstrations were conducted by KVKs in Tamil Nadu, 912 by Andhra Pradesh, 580 by Telangana and 43 by Puducherry.

e. Enterprises

A total of 1136 demonstrations were conducted on apiculture, drudgery reduction, nutri-garden, sericulture, storage bags, value addition and vermicompost production and 604 enterprise units were established by 38 KVKs in the Zone (Table 3.2.6).

f. Women empowerment

A total of 496 demonstrations on drudgery reduction, enterprise development, health and nutrition, storage techniques and value addition were conducted, and 618 enterprise units were established by 27 KVKs in the Zone for women empowerment (Table 3.2.7).

Table 3.2.1. Details of FLDs conducted by KVKs in Zone X

Category	Tamil Nadu			Andhra Pradesh			Telangana			Puducherry			Total		
	Demos	Area (ha)	KVKs	Demos	Area (ha)	KVKs	Demos	Area (ha)	KVKs	Demos	Area (ha)	KVKs	Demos	Area (ha)	KVKs
Crops															
Field Crops	2056	772.20	30	1582	635.55	23	497	194.40	15	100	30.04	2	4235	1632.19	70
Horticultural Crops	1347	415.19	29	1133	439.88	23	690	175.50	16	25	6.00	2	3195	1036.57	70
Total (Crops)	3403	1187.39	30	2715	1075.43	23	1187	369.90	16	125	36.04	2	7430	2668.76	71
Hybrids	298	101	16	106	43	8	106	127.30	10	10	2	1	520	273.30	35
Tools and implements	234	83.5	13	67	27.2	4	144	74.8	9	3	3	1	448	188.5	27
	Demos	**Nos.**	**KVKs**	**Demos**	**Nos.**	**KVKs**	**Demos**	**Nos.**	**KVKs**	**Demos**	**Nos.**	**KVKs**	**Demos**	**Nos.**	**KVKs**
Livestock	756	30172	27	912	3028005	19	580	466569	5	43	2005	2	2291	3526751	53
Enterprises	531	306	21	342	110	10	228	163	5	35	25	2	1136	604	68
Women and Children	134	181	11	284	225	12	78	212	4	496	618	27	134	181	11
Grand Total	**5356**	**1371.89**	**30**	**4426**	**1145.63**	**23**	**2323**	**572**	**16**	**712**	**41.04**	**2**	**11959**	**3130.56**	
Total No of animals/ Enterprises		**30659**			**3028340**			**466944**			**2648**			**3527536**	

Demos = No. of Demonstrations, KVKs = No. of KVKs

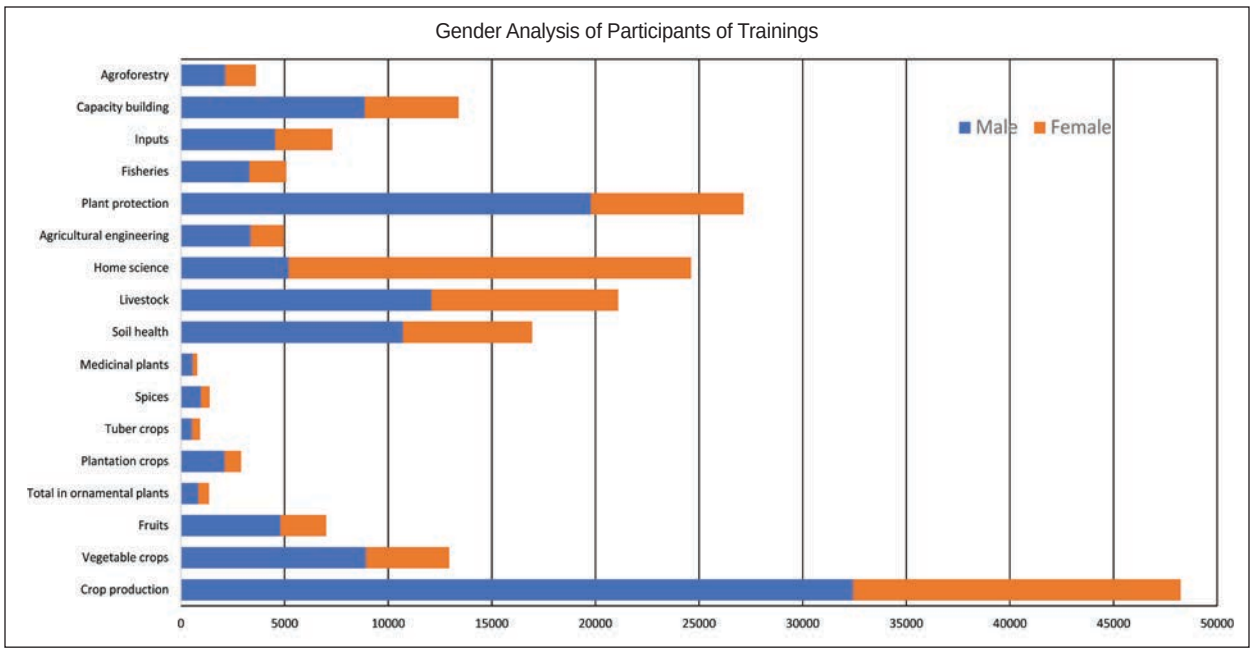


Table 3.2.2. Details of category wise FLDs on crops in Zone-X

Category	Tamil Nadu			Andhra Pradesh			Telangana			Puducherry			Total		
	Demos	Area(ha)	KVKs	Demos	Area(ha)	KVKs	Demos	Area (ha)	KVKs	Demos	Area (ha)	KVKs	Demos	Area (ha)	KVKs
Field Crops															
Cereals															
Paddy (Rice)	684	285.15	26	315	134	12	192	72.4	11	45	14	2	1236	505.55	51
Maize	55	21.25	5	148	56	14	31	12.4	4	0	0	0	234	89.65	23
Total Cereals	**739**	**306.4**	**27**	**463**	**190**	**16**	**223**	**84.8**	**12**	**45**	**14**	**2**	**1470**	**595.2**	**57**
Millets															
Finger millet	50	20	5	70	28	6	5	2	1	10	4	1	135	54	13
Barnyard millet	30	10.5	3	0	0	0	0	0	0	0	0	0	30	10.5	3
Foxtail millet	20	8	2	90	38	6	0	0	0	0	0	0	110	46	8
Kodo millet	20	6.5	2	0	0	0	0	0	0	0	0	0	20	6.5	2
Little millet	10	4	1	0	0	0	0	0	0	0	0	0	10	4	1
Pearl millet	40	14	4	45	18	3	0	0	0	0	0	0	85	32	7
Small millet	30	12	2	0	0	0	0	0	0	0	0	0	30	12	2
Sorghum	75	26.4	8	55	22	5	10	4	1	0	0	0	140	52.4	14
Other Millets	0	0	0	10	4	1	0	0	0	0	0	0	10	4	1
Total Millets	**275**	**101.4**	**20**	**270**	**110**	**13**	**15**	**6**	**2**	**10**	**4**	**1**	**570**	**221.4**	**36**
Pulses															
Redgram	0	0	0	100	41.2	7	56	24.4	8	0	0	0	156	65.6	15
Blackgram	315	113.8	17	110	44	7	0	0	0	15	6	1	440	163.8	25
Chickpea	20	0.8	1	120	48	7	10	4	2	0	0	0	150	52.8	10
Greengram	70	28	7	0	0	0	5	2	1	10	2	1	85	32	9
Horsegram	10	4	1	0	0	0	0	0	0	0	0	0	10	4	1
Rajmah	0	0	0	10	4	1	0	0	0	0	0	0	10	4	1
Total Pulses	**415**	**146.6**	**19**	**340**	**137.2**	**14**	**71**	**30.4**	**9**	**25**	**8**	**2**	**851**	**322.2**	**44**
Oilseeds															
Groundnut	198	86.1	17	145	56	11	53	19.2	7	0	0	0	396	161.3	35
Castor	20	14	2	10	4	1	10	4	1	0	0	0	40	22	4
Safflower	0	0	0	10	4	1	0	0	0	0	0	0	10	4	1
Sesamum	40	14	3	20	8	2	5	2	1	0	0	0	65	24	6
Soybean	0	0	0	0	0	0	10	4	2	0	0	0	10	4	2
Sunflower	0	0	0	0	0	0	5	2	1	0	0	0	5	2	1
Total Oilseeds	**258**	**114.1**	**20**	**185**	**72**	**12**	**83**	**31.2**	**8**	**0**	**0**	**0**	**526**	**217.3**	40

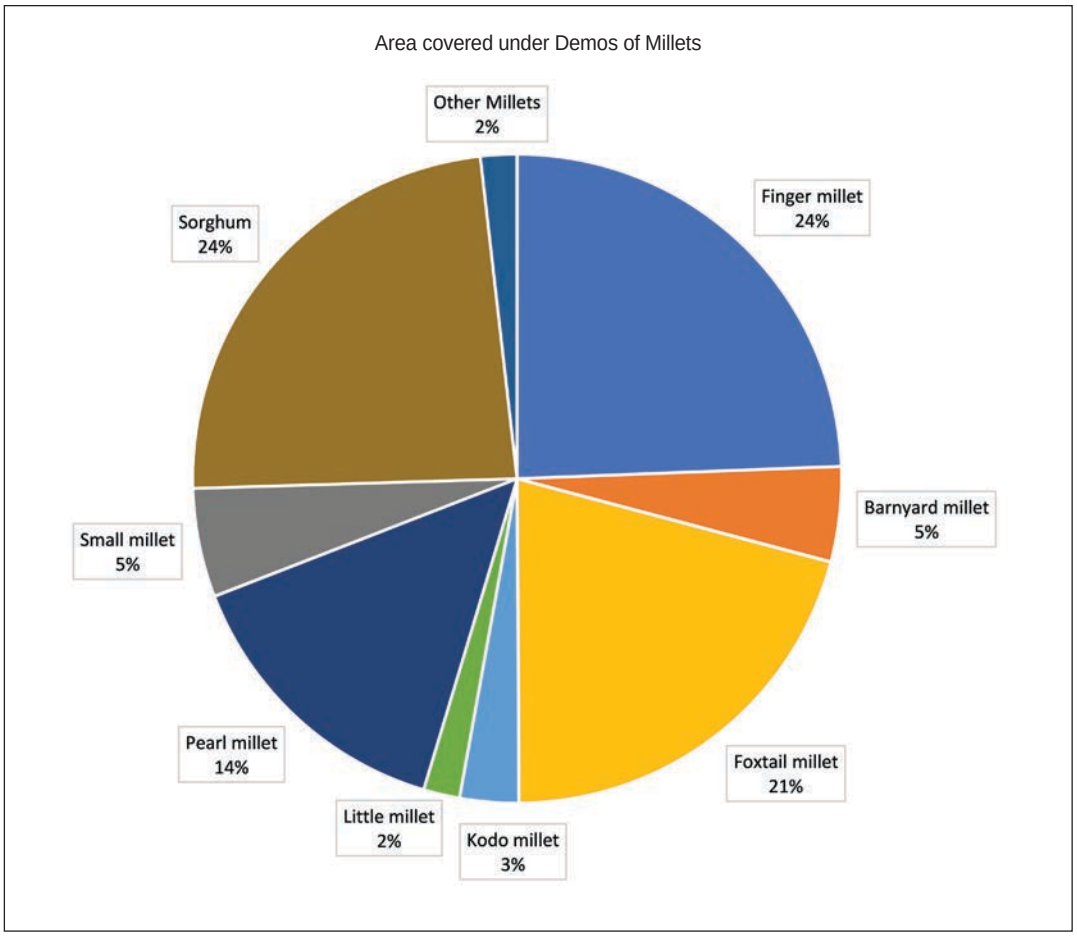
Category	Tamil Nadu			Andhra Pradesh			Telangana			Puducherry			Total		
	Demos	Area(ha)	KVKs	Demos	Area(ha)	KVKs	Demos	Area (ha)	KVKs	Demos	Area (ha)	KVKs	Demos	Area (ha)	KVKs
Commercial Crops															
Mulberry	20	8	2	30	12	1	16	6.4	1	0	0	0	66	26.4	4
Sugarcane	40	16	3	100	38	6	20	8	1	0	0	0	160	62	10
Tobacco	0	0	0	50	37.15	1	0	0	0	0	0	0	50	37.15	1
Total Commercial Crops	**60**	**24**	**5**	**180**	**87.15**	**7**	**36**	**14.4**	**2**	**0**	**0**	**0**	**276**	**125.55**	**14**
Fibre Crops															
Cotton	79	32.5	7	85	32	9	64	25.6	8	10	4	1	238	94.1	25
Total Fibre Crops	**79**	**32.5**	**7**	**85**	**32**	**9**	**64**	**25.6**	**8**	**10**	**4**	**1**	**238**	**94.1**	**25**
Fodder Crops															
Cumbu/Bajra Napier grass	10	2.5	1	0	0	0	0	0	0	0	0	0	10	2.5	1
Fodder seed production	20	2.4	1	0	0	0	0	0	0	0	0	0	20	2.4	1
Fodder sorghum	70	25.4	7	0	0	0	0	0	0	0	0	0	70	25.4	7
Maize	10	10	1	0	0	0	0	0	0	0	0	0	10	10	1
Mixed fodder	10	0.4	1	0	0	0	0	0	0	0	0	0	10	0.4	1
Other fodder crops	0	0	0	18	1.2	2	0	0	0	0	0	0	18	1.2	2
Total Fodder Crops	**120**	**40.7**	**11**	**18**	**1.2**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**138**	41.9	13
Others	110	6.5	7	41	6	5	5	2	3	10	0.04	1	166	14.54	16
Total Field Crops	**2056**	**772.2**	**30**	**1582**	**635.55**	**23**	**497**	**194.4**	**15**	**100**	**30.04**	**2**	**4235**	**1632.19**	**70**
Horticultural Crops															
Vegetables															
Amaranthus	10	2	1	0	0	0	0	0	0	0	0	0	10	2	1
Bhindi/Okra	20	6	2	20	8	2	5	2	1	0	0	0	45	16	5
Bittergourd	0	0	0	0	0	0	10	4	1	0	0	0	10	4	1
Bottlegourd	10	4	1	0	0	0	0	0	0	0	0	0	10	4	1
Brinjal	105	28.8	10	63	25.1	3	20	10	4	10	2	1	198	65.9	18
Cauliflower	0	0	0	0	0	0	5	2	1	0	0	0	5	2	1
Chilli (green)	75	36	8	73	31.1	6	5	2	1	0	0	0	153	69.1	15
Cluster Bean	15	2	2	0	0	0	0	0	0	0	0	0	15	2	2
Coriander leaf	60	14.8	6	0	0	0	10	0.1	1	0	0	0	70	14.9	7
Cowpea	10	2	1	0	0	0	0	0	0	0	0	0	10	2	1
Cucumber	10	2	1	0	0	0	0	0	0	0	0	0	10	2	1
Dolichos bean	10	0.5	1	10	4	1	0	0	0	0	0	0	20	4.5	2
Drumstick	0	0	0	20	5	1	10	0	1	0	0	0	30	5	2
French Bean	20	4	3	0	0	0	0	0	0	0	0	0	20	4	3
Lablab	20	5.2	2	0	0	0	0	0	0	0	0	0	20	5.2	2
Nutri-farm	10	0.25	1	0	0	0	156	7.5	2	0	0	0	166	7.75	3
Onion	15	5	2	20	8	1	18	7	3	0	0	0	53	20	6
Onion (Aggregatum)	59	15.2	5	0	0	0	0	0	0	0	0	0	59	15.2	5
Ridge gourd	10	4	1	95	32.5	8	48	13.5	7	0	0	0	153	50	16
Snake gourd	10	4	1	0	0	0	0	0	0	0	0	0	10	4	1
Spinach	0	0	0	0	0	0	10	4	1	0	0	0	10	4	1
Tomato	45	25	5	85	47	7	107	28.4	8	0	0	0	237	100.4	20
Vegetable Cowpea	20	4.5	2	0	0	0	0	0	0	0	0	0	20	4.5	2
Others	20	4.5	7	20	4.08	5	20	5	3	0	0	1	60	13.58	16
Total Vegetables	**554**	**169.75**	**25**	**406**	**164.78**	**18**	**424**	**85.5**	**15**	**10**	**2**	**1**	**1394**	**422.03**	**59**
Tubers															
Elephant foot yam	5	0.4	1	0	0	0	0	0	0	0	0	0	5	0.4	1
Tapioca (Cassava)	130	35.65	9	10	4	1	0	0	0	5	2	1	145	41.65	11
Total Tubers	**135**	**36.05**	**10**	**10**	**4**	**1**	**0**	**0**	**0**	**5**	**2**	**1**	**150**	**42.05**	**12**
Fruits															
Acid lime	10	4	1	0	0	0	5	2	1	0	0	0	15	6	2
Banana	146	53.45	11	120	49	7	0	0	0	0	0	0	266	102.45	18
Citrus	0	0	0	8	3.1	1	0	0	0	0	0	0	8	3.1	1

Category	Tamil Nadu			Andhra Pradesh			Telangana			Puducherry			Total		
	Demos	Area(ha)	KVKs	Demos	Area(ha)	KVKs	Demos	Area (ha)	KVKs	Demos	Area (ha)	KVKs	Demos	Area (ha)	KVKs
Grapes	5	2	1	0	0	0	0	0	0	0	0	0	5	2	1
Guava	40	16.9	4	21	4	3	35	8	3	0	0	0	96	28.9	10
Lime	10	1	1	0	0	0	0	0	0	0	0	0	10	1	1
Mango	50	17	5	90	36	6	79	34.3	8	0	0	0	219	87.3	19
Muskmelon	0	0	0	5	2	1	0	0	0	0	0	0	5	2	1
Orange	0	0	0	10	4	1	0	0	0	0	0	0	10	4	1
Papaya	10	0.5	1	35	14	5	0	0	0	0	0	0	45	14.5	6
Pomegranate	0	0	0	50	20	3	0	0	0	0	0	0	50	20	3
Sweet Orange	0	0	0	15	6	2	17	6.8	2	0	0	0	32	12.8	4
Watermelon	0	0	0	0	0	0	5	2	1	0	0	0	5	2	1
Total fruits	**271**	**94.85**	**20**	**354**	**138.1**	**17**	**141**	**53.1**	**12**	**0**	**0**	**0**	**766**	**286.05**	**49**
Flowers															
Chrysanthemum	0	0	0	35	14	2	0	0	0	0	0	0	35	14	2
Jasmine	85	27.03	8	5	2	1	0	0	0	0	0	0	90	29.03	9
Marigold	0	0	0	15	6	1	5	2	1	0	0	0	20	8	2
Tuberose	10	4	1	0	0	0	10	4	1	0	0	0	20	8	2
Total Flowers	**95**	**31.03**	**8**	**55**	**22**	**3**	**15**	**6**	**2**	**0**	**0**	**0**	**165**	**59.03**	**13**
Spices and Condiments															
Chilli (Red)	0	0	0	60	24	3	60	16.9	6	0	0	0	120	40.9	9
Coriander (seed)	10	1	1	10	4	1	0	0	0	0	0	0	20	5	2
Ginger	10	0.5	1	30	12	3	0	0	0	0	0	0	40	12.5	4
Pepper	20	3	2	0	0	0	0	0	0	0	0	0	20	3	2
Turmeric (Raw)	15	4	2	60	24	5	20	8	3	0	0	0	95	36	10
Turmeric (Dried)	10	4	1	3	1	1	0	0	0	0	0	0	13	5	2
Other spices	2	0.8	1	0	0	0	0	0	0	0	0	0	2	0.8	1
Total Spices	**67**	**13.3**	**7**	**163**	**65**	**10**	**80**	**24.9**	**8**	**0**	**0**	**0**	**310**	**103.2**	**25**
Medicinal Crops															
Other Medicinal Plants	50	8.41	5	0	0	0	0	0	0	0	0	0	50	8.41	5
Total Medicinal crops	**50**	**8.41**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	50	8.41	5
	0	0	31	0	0	22	0	0	16	0	0	2	**0**	**0**	**71**
Plantation crops															
Cashew	10	4	1	70	20	5	0	0	0	0	0	0	80	24	6
Coconut	165	57.8	12	25	10	3	0	0	0	10	2	1	200	69.8	16
Coffee	0	0	0	10	4	1	0	0	0	0	0	0	10	4	1
Oil palm	0	0	0	40	12	3	30	6	2	0	0	0	70	18	5
Total Plantation crops	**175**	**61.8**	**9**	**145**	**46**	**5**	**30**	**6**	**2**	**10**	**2**	**1**	**360**	**115.8**	**17**
Total Horticultural Crops	**1347**	**415.19**	**29**	**1133**	**439.88**	**23**	**690**	**175.5**	**16**	**25**	**6**	**2**	**3195**	**1036.57**	**70**
Total Crops	**3403**	**1187.39**	**30**	**2715**	**1075.43**	**23**	**1187**	**369.9**	**16**	**125**	**36.04**	**2**	**7430**	**2668.76**	**71**

Demos = No. of Demonstrations, KVKs = No. of KVKs

I cultivated high yielding tobacco variety FCR15 provided by KVK Kandukur and followed the management practices taught by the scientists. The high yielding, tobacco mosaic resistant variety helped me realize additional cured leaf yield of 400 kg over the existing variety and gave an additional income of Rs. 80,000 per ha.

Mr. Ramisetty Dasaiah
Kanduluru , Prakasam District AP


Area covered under Demos of Millets
Other Millets 2%
Finger millet 24%
Barnyard millet 5%
Foxtail millet 21%
Kodo millet 3%
Little millet 2%
Pearl millet 14%
Small millet 5%
Sorghum 24%

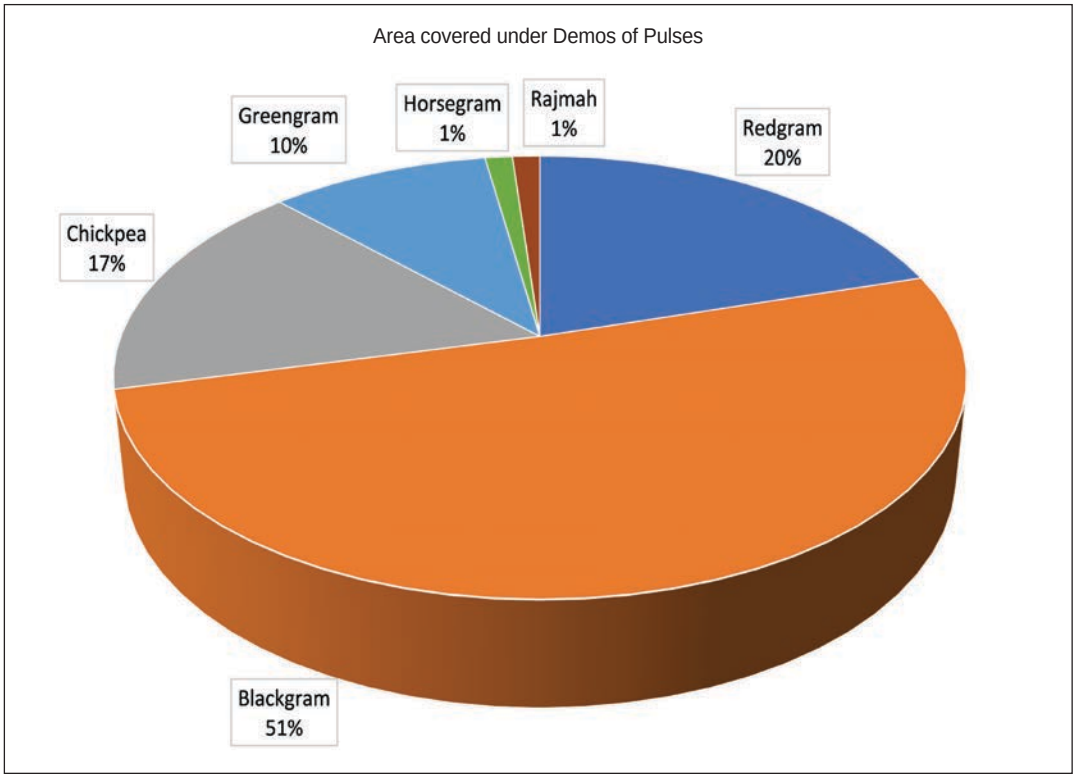

Area covered under Demos of Pulses
Greengram 10%
Horsegram 1%
Rajmah 1%
Redgram 20%
Chickpea 17%
Blackgram 51%

Table 3.2.3. Details of category wise FLDs on crop hybrids in Zone-X

Category	Tamil Nadu			Andhra Pradesh			Telangana			Puducherry			Total		
	Demos	Area (ha)	KVKs	Demos	Area (ha)	KVKs	Demos	Area (ha)	KVKs	Demos	Area (ha)	KVKs	Demos	Area (ha)	KVKs
Field Crops															
Cereals															
Maize	70	26	5				42	98.5	4				**112**	**124.5**	**9**
Paddy (Rice)							10	5	1				**10**	**5**	**1**
Millets															
Pearl millet				10	4	1							**10**	**4**	**1**
Oilseeds															
Castor				20	8	1							**20**	**8**	**1**
Fibre Crops															
Cotton	20	8	2				16	10.4	2				**36**	**18.4**	**4**
Commercial Crops															
Other Commercial Crops				10	4	1							**10**	**4**	**1**
Fodder Crops															
Fodder cafeteria							2	1	1				**2**	**1**	**1**
Horticultural Crops															
Vegetables															
Bhindi/Okra	40	14	4	10	4	1							**50**	**18**	**5**
Chilli	10	4	1										**10**	**4**	**1**
Chilli (green)	20	6	2	3	1.5	1							**23**	**7.5**	**3**
Onion	10	4	1				10	4	1				**20**	**8**	**2**
Others	10	4	1										**10**	**4**	**1**
Ridgegourd	30	7	3										**30**	**7**	**3**
Snake gourd	20	6	2										**20**	**6**	**2**
Tomato	35	12	4	53	21.5	6	26	8.4	4				**114**	**41.9**	**14**
Fruits															
Watermelon	23	6	3							10	2	1	**33**	**8**	**4**
Plantation crops															
Coconut	10	4	1										**10**	**4**	**1**
Total	**298**	**101**	**16**	**106**	**43**	**8**	**106**	**127.30**	**10**	**10**	**2**	**1**	**520**	**273.30**	**35**

Demos = No. of Demonstrations, KVKs = No. of KVKs

Table 3.2.4. Details of category wise FLDs on Tools and implements in Zone-X

Category	Tamil Nadu			Andhra Pradesh			Telangana			Puducherry			Total		
	Demos	Area (ha)	KVKs	Demos	Area (ha)	KVKs	Demos	Area (ha)	KVKs	Demos	Area (ha)	KVKs	Demos	Area (ha)	KVKs
Land preparation	14	6	2	7	2.8	1	5	2	1				**26**	**10.8**	**4**
Sowing and Planting	97	37.05	5	17	3.2	2	77	30.8	7				**191**	**71.05**	**14**
Irrigation							10	10	1				**10**	**10**	**1**
Intercultural operations	51	17.30	6	18	7.2	1	10	5	1				**79**	**29.5**	**8**
Plant protection	10	4	1	20	10	2							**30**	**14**	**3**
Harvesting	52	15.15	6				15	6	2	3	3	1	**70**	**24.15**	**9**
Postharvest technology	10	4	1				12	15	1				**22**	**19**	**2**
Total Mechanization				5	4	1	15	6	2				**20**	**10**	**3**
Total	**234**	**83.5**	**13**	**67**	**27.2**	**4**	**144**	**74.8**	**9**	**3**	**3**	**1**	**448**	**188.5**	**27**

Demos = No. of Demonstrations, KVKs = No. of KVKs

Popularization of Sesame variety JCS-1020 in Adilabad , Telangana under irrigated conditions

Demonstration of GA on flower yield of chrysanthemum- KVK, Kurnool (Yagantipalli), Andhra Pradesh

FLD in mulberry - KVK , Namakkal , Tamil Nadu

Table 3.2.5. Details of category wise FLDs on Livestock, poultry and fisheries in Zone-X

Category	Tamil Nadu			Andhra Pradesh			Telangana			Puducherry			Total		
	Demos	Nos.	KVKs	Demos	Nos.	KVKs	Demos	Nos.	KVKs	Demos	Nos.	KVKs	Demos	Nos.	KVKs
Cow	265	427	16	201	262	13	85	139	2	25	5	1	576	833	32
Buffalo				182	320	9	42	605	4				224	925	13
Goat	100	260	8	14	16	2	10	50	1	5		1	129	326	12
Sheep	20	70	2	115	617	11	31	405	2				166	1092	15
Poultry	250	4110	20	312	4290	8	386	1995	4	5		1	953	10395	33
Duck	20	5	2										20	5	2
Quail	35	1700	4										35	1700	4
Fish	56	23500	7	88	3022500	5	26	463375	3	8	2000	1	178	3511375	16
Rabbit	10	100	1										10	100	1
Total	756	30172	27	912	3028005	19	580	466569	5	43	2005	2	2291	3526751	53

Nos. = No. of animals/fish/fingerlings, KVKs = No of KVKs

Table 3.2.6. Details of category wise FLDs on enterprises in Zone-X

Category	Tamil Nadu			Andhra Pradesh			Telangana			Puducherry			Total		
	Demos	Nos.	KVKs	Demos	Nos.	KVKs	Demos	Nos.	KVKs	Demos	Nos.	KVKs	Demos	Nos.	KVKs
Backyard Poultry	35	10	2										35	10	2
Bio-inputs	10	10	1										10	10	1
Bio-mineralizer	10	1	1										10	1	1
Confectionery				10		1				5	5	1	15	5	2
Cut flower Production	10	10	1										10	10	1
Feed production	25		1										25		1
Groundnut stripper				1	1	1							1	1	1
Harvester				36	11	2							36	11	2
Herbal garden										10	10	1	10	10	1
Mobile App	3	3	1										3	3	1
Mushroom	10	10	1							5	5	1	15	15	2
Nutrigarden	30	12	3	111	27	3	150	150	1				291	189	7
Sericulture				10	10	1							10	10	1
Storage	20	20	2	10	10	1				5	5	1	35	35	4
Sugarcane expert system	10		1										10		1
Sweet flag	20	15	2										20	15	2
Transplanter	5	5	1										5	5	1
Value addition	293	160	18	142	34	8	78	13	5	10		1	523	207	32
Vermicompost	50	50	3	22	17	2							72	67	5
Total	**531**	**306**	**21**	**342**	**110**	**10**	**228**	**163**	**5**	**35**	**25**	**2**	**1136**	**604**	**38**

Demos = No. of Demonstrations, Nos. = No. of enterprise units, KVKs = No. of KVKs

Table 3.2.7. Details of category wise FLDs on women empowerment in Zone-X

Category	Tamil Nadu			Andhra Pradesh			Telangana			Total		
	Demos	Nos.	KVKs	Demos	Nos.	KVKs	Demos	Nos.	KVKs	Demos	Nos.	KVKs
Drudgery Reduction				31	20	4	7	7	1	38	27	5
Health and Nutrition	40	35	5	31	30	5	10	10	1	81	75	11
Kitchen Gardening	38	33	6	150	140	7	46	180	4	234	353	17
Storage Technique	10	105	1	1	5	1	10	10	1	21	120	3
Value Addition	46	8	6	71	30	6	5	5	1	122	43	13
Total	**134**	**181**	**11**	**284**	**225**	**12**	**78**	**212**	**4**	**496**	**618**	**27**

Demos = No. of Demonstrations, Nos. = No. of enterprise units, KVKs = No. of KVKs

3.2.1. Performance of Technologies in Frontline Demonstrations

A total number of 1236 FLDs on varieties, IPM and IDM technologies were conducted on rice crop with an average yield increase of 14% and BCR of 2.06:1 (Table 3.2.8). The average yield advantages in the 140 demonstrations on sorghum, 135 demonstrations on finger millet and 110 demonstrations on foxtail millet were 14, 10 and 34 per cent, respectively and the BCR was 2.14:1, 2.85:1 and 2.26:1, respectively. Among pulses, an average yield increase of 26 per cent was observed in 440 demonstrations on blackgram varieties and technologies while in the 156 demonstrations on redgram, the average yield increase was nine per cent. Among the oilseeds, the average yield enhancement in 396 demonstrations on groundnut was 25 per cent and the BCR was 2.20:1. Cotton technologies were demonstrated at 238 locations with an average yield enhancement of 16 per cent. Among the vegetable crops, brinjal varieties and technologies were demonstrated at 198 locations with an average yield enhancement of 20 per cent, nutri-farm with multiple vegetables in 166 demonstrations with an average yield enhancement of 50 per cent, tomato at 237 locations with an average yield increase of 37 per cent and green chillies at 153 locations with an average yield increase of 24 per cent. Among the fruit crops, mango varieties and technologies were demonstrated at 219 locations with an average yield increase of 48 per cent. Banana was demonstrated at 266 locations with an average yield enhancement of 13 per cent. Red chilli was demonstrated at 120 locations with an average yield increase of 18 per cent.

Tools and implements for sowing and planting, intercultural operations, harvesting equipment and post-harvest processing tool and equipment were demonstrated at 448 locations. The performance of technologies in terms of improvement in performance, savings in time and manpower, income and benefit cost ratio are presented in Table 3.2.10.

KVKs in the Zone conducted 2291 demonstrations involving 3526751 animals, birds and fish fingerlings on technologies like Mastiguard, bypass fat, urea molasses mineral block, region specific mineral mixture, Ketocheck, Ethno Veterinary Medicines, evaluation of improved breeds in cattle, goat and sheep; improved fodder varieties, feed preparation technologies, improved poultry breeds like Aseel, Gramapriya, Nandanam D3, Nandanam IV, Rajasri, Vanasri, *etc*., Fish breeds, fish production and management, fish pond management, *etc.* (Table 3.2.11). Performance of various tools and enterprises like ring harvester, nutri-garden, value addition to various crops like millets, vegetables and fruits, vermicomposting, silkworm rearing, apiculture, *etc*. were demonstrated and compared with farmers practice in terms of production, income, quality, benefit cost ratio *etc.* (Table 3.2.12.). Enterprises suitable for small business-like value-added products from millets, vegetables, mushroom, *etc*., drudgery reduction machines and tools like weeders, planters *etc*., were demonstrated to women farmers for their empowerment (Table 3.2.13).

KVK Kalikiri demonstrated technology for the control of pests and diseases in my mango orchard of 5 acres. Using mango fruit covers, methyl eugenol traps and periodical breaking of soil under trees, pests and diseases were controlled, quality ensured and I am getting a premium price for the fruits. Now, I'm exporting mangoes to other countries too.

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Table 3.2.8. Performance of crop varieties and technologies in the FLDs of Zone X

Crop	Demos	Area (ha)	KVKs	Yield (q/ha)			Economics					
							Demonstration			Check		
				Demo	Check	%	Gross Cost (Rs.)	Net Returns (Rs.)	BCR	Gross Cost (Rs.)	Net Returns (Rs.)	BCR
Field Crops												
Cereals												
Paddy (Rice)	1236	505.55	51	55.57	48.54	14	58000	61645	2.06	59600	44293	1.74
Maize	234	89.65	23	281.50	240.54	17	69951	108920	2.56	66625	84572	2.27
Total Cereals	**1470**	**595.2**	**57**									
Millets												
Finger millet	135	54	13	116.28	105.33	10	40416	74731	2.85	41687	62707	2.50
Barnyard millet	30	10.5	3	15.57	11.43	36	55000	38043	1.69	41645	23897	1.57
Foxtail millet	110	46	8	447.31	332.96	34	33499	42096	2.26	27473	20224	1.74
Kodo millet	20	6.5	2	24.59	18.56	32	86750	60880	1.70	69960	33960	1.49
Little millet	10	4	1	4.98	4.12	21	26250	8628	1.33	24000	4735	1.20
Pearl millet	85	32	7	21.72	17.86	22	28534	39197	2.37	29252	25785	1.88
Small millet	30	12	2	17.56	15.46	14	30883	38635	2.25	27181	26772	1.98
Sorghum	140	52.4	14	398.13	350.56	14	40290	45730	2.14	38810	33870	1.87
Other Millets	10	4	1	69.30	62.50	11	55125	114660	3.08	60500	92747	2.53
Total Millets	**570**	**221.4**	**36**									
Pulses												
Redgram	156	65.6	15	129.32	118.16	9	38559	40864	2.06	42911	35879	1.84
Blackgram	440	163.8	25	51.61	40.88	26	41548	53657	2.29	40232	33640	1.84
Chickpea	150	52.8	10	169.22	148.69	14	54352	69904	2.29	47781	45483	1.95
Greengram	85	32	9	6.69	5.29	27	22955	25021	2.09	22544	15589	1.69
Horsegram	10	4	1	9.96	8.51	17	31915	32506	2.02	33175	16283	1.49
Rajmah	10	4	1	3.70	2.85	30	13125	16475	2.26	13100	9700	1.74
Total Pulses	**851**	**322.2**	**44**									
Oilseeds												
Groundnut	396	161.3	35	386.52	309.55	25	69545	83572	2.20	69823	62305	1.89
Castor	40	22	4	14.17	10.38	37	46521	44704	1.96	42161	24899	1.59
Safflower	10	4	1	8.75	7.68	14	15100	24275	2.61	17640	16920	1.96
Sesamum	65	24	6	6.56	5.39	22	20938	32958	2.57	21095	23376	2.11
Soybean	10	4	2	24.45	19.83	23	39608	81170	3.05	39133	58409	2.49
Total Oilseeds	**526**	**217.3**	**40**									
Commercial Crops												
Mulberry	66	26.4	4	157.13	127.53	23	41458	72659	2.75	28289	48297	2.71
Sugarcane	160	62	10	565.67	510.89	11	108144	132031	2.22	106368	110018	2.03
Total Commercial Crops	**276**	**125.55**	**14**									
Fibre Crops												
Cotton	238	94.1	25	107.73	93.03	16	59552	68301	2.15	59662	45704	1.77
Total Fibre Crops	**238**	**94.1**	**25**									
Fodder Crops												

Crop	Demos	Area (ha)	KVKs	Yield (q/ha)			Economics					
							Demonstration			Check		
				Demo	Check	%	Gross Cost (Rs.)	Net Returns (Rs.)	BCR	Gross Cost (Rs.)	Net Returns (Rs.)	BCR
Cumbu/Bajra Napier grass	10	2.5	1	2100.00	1420.00	48	65000	184000	3.83	46500	73800	2.59
Fodder seed production	20	2.4	1	1987.63	1657.75	20	82645	122958	2.49	78324	82130	2.05
Fodder sorghum	70	25.4	7	447.39	251.40	78	58819	69126	2.18	52244	40986	1.78
Maize	10	10	1	281.50	240.54	17	69951	108920	2.56	66625	84572	2.27
Other fodder crops	18	1.2	2	94.01	69.66	35	39050	39825	2.02	28500	25250	1.89
Total Fodder	**138**	**41.9**	**13**									
Others	166	14.54	16									
Total Field Crops	**4235**	**1632.19**	**70**									
Horticultural Crops												
Vegetables												
Amaranthus	10	2	1	164.30	126.20	30	61615	67000	2.09	64536	68000	2.05
Bhindi/Okra	45	16	5	75.13	63.25	19	58373	97946	2.68	61202	68648	2.12
Bittergourd	10	4	1	276.00	198.00	39	291800	170600	1.58	229200	102700	1.45
Bottlegourd	10	4	1	180.00	162.00	11	95600	174400	2.82	86300	140500	2.63
Brinjal	198	65.9	18	520.03	432.16	20	129421	194879	2.51	130265	146087	2.12
Cauliflower	5	2	1	147.00	138.00	7	160630	132370	1.82	179350	97170	1.54
Chilli (green)	153	69.1	15	94.85	76.35	24	231937	168703	1.73	190284	83960	1.44
Cluster Bean	15	2	2	91.68	68.98	33	70697	237568	4.36	76745	150559	2.96
Coriander leaf	70	14.9	7	72.35	56.93	27	52198	58544	2.12	49636	34600	1.70
Cowpea	10	2	1	280.80	190.60	47	147125	414475	3.82	137750	243450	2.77
Cucumber	10	2	1	41.25	35.00	18	25000	57500	3.30	24000	46000	2.92
Drumstick	30	5	2	10.00	7.00	43	39975	55000	2.38	39125	37500	1.96
French Bean	20	4	3	149.87	127.00	18	102000	178427	2.75	111975	125360	2.12
Lablab	20	5.2	2	107.65	90.36	19	83750	196400	3.35	81300	140810	2.73
Nutri-farm	166	7.75	3	11.55	7.73	50	4938	3831	1.78	3250	1750	1.54
Onion	53	20	6	1504.64	1256.39	20	100296	166844	2.66	105302	121472	2.15
Onion (Aggregatum)	59	15.2	5	101.15	78.58	29	92815	178923	2.93	94278	124993	2.33
Ridge gourd	153	50	16	192.37	167.30	15	155110	290907	2.88	154876	238175	2.54
Snake gourd	10	4	1	147.60	128.80	15	82500	153660	2.86	87500	92820	2.06
Spinach	10	4	1	102.00	89.00	15	135900	119100	1.88	126500	51500	1.41
Tomato	237	100.4	20	1047.09	762.95	37	158467	314939	2.99	154445	239157	2.55
Vegetable cowpea	20	4.5	2	176.20	123.15	43	79714	105886	2.33	65639	62618	1.95
Total Vegetables	**1394**	**422.03**	**59**									
Tubers												
Elephant foot yam	5	0.4	1	86.00	69.00	25	26780	102220	4.82	28125	75375	3.68
Tapioca (Cassava)	145	41.65	11	274.18	224.70	22	107843	223118	3.07	114174	162728	2.43
Total Tubers	**150**	**42.05**	**12**									
Fruits												
Acid lime	15	6	2	75.35	61.05	23	221150	656675	3.97	226650	394830	2.74
Banana	266	102.45	18	546.05	482.13	13	225739	440271	2.95	227808	363171	2.59

Crop	Demos	Area (ha)	KVKs	Yield (q/ha)			Economics					
							Demonstration			Check		
				Demo	Check	%	Gross Cost (Rs.)	Net Returns (Rs.)	BCR	Gross Cost (Rs.)	Net Returns (Rs.)	BCR
Citrus	8	3.1	1	130.40	103.40	26	88250	224710	3.55	84500	163660	2.94
Grapes	5	2	1	422.00	354.50	19	326000	1034000	4.17	306552	827846	3.70
Guava	96	28.9	10	132.68	109.91	21	337598	362915	2.07	205262	169271	1.82
Lime	10	1	1	77.32	62.41	24	305188	206887	1.68	256874	143890	1.56
Mango	219	87.3	19	145.09	98.20	48	108618	168000	2.55	93858	106586	2.14
Muskmelon	5	2	1	14.25	11.75	21	47850	73275	2.53	56450	43425	1.77
Papaya	45	14.5	6	949.55	862.06	10	146050	374745	3.57	169150	305160	2.80
Pomegranate	50	20	3	193.26	163.90	18	277640	1237556	5.46	276140	935532	4.39
Sweet Orange	32	12.8	4	127.75	104.20	23	286063	328583	2.15	532222	253775	1.48
Watermelon	5	2	1	750.00	665.00	13	118250	211750	2.79	129500	163100	2.26
Total fruits	**766**	**286.05**	**49**									
Flowers												
Chrysanthemum	35	14	2	92.30	79.10	17	181730	284620	2.57	181527	211173	2.16
Jasmine	90	29.03	9	46.46	38.31	21	243740	237228	1.97	214517	163184	1.76
Marigold	20	8	2	98.15	80.65	22	89373	222015	3.48	91483	141905	2.55
Tuberose	20	8	2	137.85	89.15	55	528100	505200	1.96	293000	203300	1.69
Total Flowers	**165**	**59.03**	**13**									
Spices and Condiments												
Chilli (Red)	120	40.9	9	44.47	37.76	18	258878	461656	2.78	379749	450981	2.19
Coriander (seed)	20	5	2	25.82	17.75	45	38763	44011	2.14	37175	22285	1.60
Ginger	40	12.5	4	153.61	137.56	12	181882	482802	3.65	182786	421381	3.31
Pepper	20	3	2	39.05	29.84	31	111375	327135	3.94	104250	222220	3.13
Turmeric (Raw)	95	36	10	230.82	206.84	12	183583	226493	2.23	187945	177988	1.95
Turmeric (Dried)	13	5	2	138.75	117.70	18	147844	166664	2.13	151270	57443	1.38
Other spices	2	0.8	1									
Total Spices	**310**	**103.2**	**25**									
Medicinal Crops												
Other Medicinal	50	8.41	5									
Total Medicinal	**50**	**8.41**	**5**									
Plantation crops												
Cashew	80	24	6	52.14	35.26	48	63520	52832	1.83	68913	37147	1.54
Coconut	200	69.8	16	5949	4463	33	38028	59459	2.56	33198	48861	2.47
Coffee	10	4	1	6.82	4.83	41	56250	134710	3.39	48062	87315	2.82
Oil palm	70	18	5	258.60	221.75	17	146019	253139	2.73	147013	200550	2.36
Total Plantation	**360**	**115.8**	**17**									
Total Horti Crops	**3195**	**1036.57**	**70**									
Total Crops	**7430**	**2668.76**	**71**									

Demos = No. of Demonstrations, KVKs = No. of KVKs; Demo = Demonstration; Check = Farmer's Practice; % = Per cent increase in demonstration over check; BCR = Benefit-Cost Ratio

Demonstration of drum seeded rice – KVK, Kanyakumari, Tamil Nadu

Demonstration of fertigation in oil palm – KVK, West Godavari (VR Gudem), Andhra Pradesh

Seed to seed mechanization in rice – KVK, Visakhapatnam (BCT), Andhra Pradesh

Table 3.2.9. Performance of hybrids in the FLDs of Zone X

Crop	Demos	Area (ha)	KVKs	Yield (q/ha)			Economics					
							Demonstration			Check		
				Demo	Check	%	Gross Cost (Rs.)	Net Returns (Rs.)	BCR	Gross Cost (Rs.)	Net Returns (Rs.)	BCR
Tamil Nadu												
Field Crops												
Cereals												
Maize	70	26	5	63.57	52.40	21	45897	85046	2.85	46655	62084	2.33
Fibre Crops												
Cotton	20	8	2	20.70	17.90	16	85530	127299	2.49	93280	104849	2.12
Horticultural Crops												
Vegetables												
Bhindi/Okra	40	14	4	711.13	586.85	21	64754	139026	3.15	62480	84724	2.36
Chilli	10	4	1	42.20	36.50	16	66000	145000	3.20	68000	114500	2.68
Chilli (green)	20	6	2	515.30	425.40	21	97250	164870	2.70	93700	110327	2.18
Onion	10	4	1	185.00	128.00	45	158000	194000	2.23	174000	96000	1.55
Others	10	4	1	678.71	594.26	14	84932	191783	3.26	98275	154285	2.57
Ridge gourd	30	7	3	804.26	369.60	118	140501	298260	3.12	141401	207662	2.47
Snake gourd	20	6	2	338.66	291.74	16	163106	244629	2.50	172066	178202	2.04
Tomato	35	12	4	663.15	562.23	18	134618	304833	3.26	141159	234904	2.66
Fruits												
Watermelon	23	6	3	165.57	137.50	20	41833	60245	2.44	34267	32542	1.95
Plantation crops												
Coconut (Nos)	10	4	1	16450	13125	25	82250	164500	3.00	79500	118125	2.49
Total	**298**	**101**	**16**									
Andhra Pradesh												
Field Crops												
Millets												
Pearl millet	10	4	1	17.35	15.80	10	26000	13038	1.50	26000	9550	1.37
Oilseeds												
Castor	20	8	1	17.09	14.16	21	29852	69093	3.31	31454	52253	2.66
Horticultural Crops												
Vegetables												
Bhindi/Okra	10	4	1	15.80	10.52	50	51300	158000	4.08	56600	105200	2.86
Chilli (green)	3	1.5	1	10.00	9.00	11	250000	110000	1.44	225000	110000	1.49
Tomato	53	21.5	6	471.80	417.22	13	214333	270332	2.26	213389	210916	1.99
Total	**106**	**43**	**8**									
Telangana												
Field Crops												
Cereals												
Maize	42	98.5	4	70.32	54.04	30	51707	90352	2.75	54737	84313	2.54
Paddy (Rice)	10	5	1	68.99	68.88	0	44750	93850	3.10	45750	90850	2.99
Fibre Crops												
Cotton	16	10.4	2	14.77	11.69	26	66723	77673	2.16	59177	61943	2.05

Crop	Demos	Area (ha)	KVKs	Yield (q/ha)			Economics					
							Demonstration			Check		
				Demo	Check	%	Gross Cost (Rs.)	Net Returns (Rs.)	BCR	Gross Cost (Rs.)	Net Returns (Rs.)	BCR
Fodder Crops												
Fodder cafeteria	2	1	1	2000.00	920.00	117	3000	2400	1.80	1600	600	1.38
Horticultural Crops												
Vegetables												
Onion	10	4	1	381.00	337.00	13	181000	124000	1.69	170000	66250	1.39
Tomato	26	8.4	4	498.25	438.32	14	140429	241172	2.72	144993	190662	2.31
Total	**106**	**127.3**	**10**									
Puducherry												
Fruits												
Watermelon	10	2	1	428.00	377.00	14	101654	197945	2.95	99728	164172	2.65
Total	**10**	**2**	**1**									

Demos = No. of Demonstrations, KVKs = No. of KVKs; Demo = Demonstration; Check = Farmer's Practice; % = Per cent increase in demonstration over check; BCR = Benefit-Cost Ratio

Table 3.2.10. Performance of tools and implement in the FLDs of Zone X

Tool/ Implement/ Machinery	Crop	Demos	Area (ha)	Parameter	Value			Economics					
								Demonstration			Check		
					Demo	Check	%	Gross Cost (Rs.)	Net Returns (Rs.)	BCR	Gross Cost (Rs.)	Net Returns (Rs.)	BCR
Andhra Pradesh													
Subsoiler	Groundnut	7	2.8	Yield (q/ha)	5.87	4.58	28	35220	23240	1.66	22680	13150	1.58
Drone	Paddy	5	2	Yield (q/ha)	58	52	12	54110	64065	2.18	53950	52000	1.96
Drone technology	Paddy	5	4	Min/acre	15	300	-95	68850	24939	1.36	71890	17615	1.25
HVS Tractor mounted sprayer	Coconut	10	4	nuts/ha	14200	7955	79	49700	56800	2.14	43912	19728	1.45
Others	Vegetables	10	0.4	Drudgery	48.9	78.2	-37						
Seed Cum Fertilizer Drill	Groundnut	7	2.8	Yield (q/ha)	6.56	4.98	32	39360	26460	1.67	22920	13180	1.58
Seed to Seed mechanization	Paddy	5	4	Cost (Rs)	16500	34600	-52	53312	46137	1.87	71417	19617	1.27
Tamil Nadu													
Aluminium unipole ladder	Black pepper	5	1	Labourers saved	15	4	275	25500	74500	3.92	36000	36000	2.00
Bhendi Cutter	Bhendi	5	0.25	Man hours	300	400	-25	93400	107000	2.15	97300	99200	2.02
Cotton plucker	Cotton	10	4	Man hour/ ha	60	585	-90	97413	65260	1.67	110388	52285	1.47
Cotton plucker	Cotton	10	4	Labourer charges	5000	21938	-77	97413	65260	1.67	110388	52285	1.47
Ring Harvester	Bhendi	10	0.4	Labourer saved	20	17	18	135000	96400	1.71	116500	76100	1.65
Turmeric harvester	Turmeric	4	2	Coverage (ha/ labourer)	0.012	0.006	100	14000	19200	2.37	30000	19000	1.63
Power weeder	Vegetables	5	0.5	Cost of harvest (Rs)	400	4000	-90	95700	498000	6.20	98800	492000	5.98
Inter cultivator cum Ridger	Banana	4	2	Coverage (ha/ labourer)	0.072	0.028	157	17500	25000	2.43	38000	23000	1.61
Cono weeder (TNAU model)	Paddy	6	2.4	Man hour/ha	50	140	-64	58375	29875	1.51	67782	20039	1.30
Cono weeder (TNAU model)	Paddy	6	2.4	Labourer cost (Rs)	9375	13125	-29	58375	29875	1.51	67782	20039	1.30
Power weeder	Rice	10	4	Yield (q/ha)	53	38.2	39	45300	59210	2.31	49610	45513	1.92

Tool/ Implement/ Machinery	Crop	Demos	Area (ha)	Parameter	Value			Economics					
								Demonstration			Check		
					Demo	Check	%	Gross Cost (Rs.)	Net Returns (Rs.)	BCR	Gross Cost (Rs.)	Net Returns (Rs.)	BCR
Soil moisture indicator	Sugarcane	10	2	Irrigations	40	50	-20	160100	210971	2.32	169290	192705	2.14
De-trasher	Sugarcane	10	4	Yield (t/ha)	96.625	94.125	3	86410	188971.3	3.19	88410	179846.3	3.03
Stone remover	-	4	2	Coverage (ha/ labourer)	0.024	0.008	200	18000	22000	2.22	54000	9000	1.17
Total mechanization	Groundnut	10	4	Cost (Rs.)	0	0		55125	102025	2.85	70000	66010	1.94
Soil moisture indicator	Sugarcane	10	2.5	Cost (Rs.)	0	0		131500	210700	2.60	129800	165200	2.27
Drone	Groundnut	10	4	Yield (q/ha)	25	20	25	68850	118650	2.72	67350	82650	2.23
Straw baler	Paddy	10	4	Cost (Rs)	0	0		44000	57840	2.31	50000	51840	2.04
Seedling transplanter	Tomato	10	4	Yield (q/ha)	71.5	70.8	1	175000	320000	2.83	215000	285500	2.33
Drum seeder	Paddy	6	2.4	Man hour/ha	20	183.2	-89	58375	29875	1.51	67782	20039	1.30
Drum Seeder	Paddy	6	2.4	Labourer cost (Rs)	4688	6870	-32	58375	29875	1.51	67782	20039	1.30
Drum seeder	Paddy	10	4	Yield (q/ha)	59	52.8	12	37100	51503	2.39	34300	30659	1.89
Drum seeder	Paddy	10	4	Yield (q/ha)	58.9	59.75	-1	46250	36210	1.78	49180	34470	1.70
Seed drill	Groundnut	10	4	Time (hrs)	2.50	20	-88	54899	19591	1.36	57138	8722	1.15
Seed drill	Groundnut	10	4	Labourer charges (Rs)	3438	5500	-37	54899	19591	1.36	57138	8722	1.15
Rotary dibbler	Groundnut	10	4	Time (hrs)	20	100	-80	52451	21817	1.42	58788	12708	1.22
Rotary dibbler	Groundnut	10	4	Labourer charges (Rs)	3125	6500	-52	52451	21817	1.42	58788	12708	1.22
Vegetable planter	Tomato	5	2	Man hour/ha	60	142	-58	125225	159469	2.27	127800	142750	2.12
Vegetable planter	Tomato	5	2	Labourer charges (Rs)	2750	5325	-48	125225	159469	2.27	127800	142750	2.12
Vegetable Transplanter	Brinjal	5	0.25	Man hour/ha	40.00	60.00	-33	93200	106000	2.14	97400	99600	2.02
Telangana													
Harvester	Red gram	5	2	Yield (q/ha)	14.62	11.02	33	28450	40775	2.43	31340	32235	2.03
Paddy Baler	Paddy	10	4	Yield (q/ha)	62.00	58.75	6	61250	68330	2.12	70625	52162.5	1.74
Power Weeder	Line sowing crops	10	5	Yield (q/ha)	9.00	6.50	38	55000	41000	1.75	75000	44000	1.59
Side shift rotavator	Mango	5	2	Yield (q/ha)	75.21	61.13	23	83540	70120	1.84	93630	21380	1.23
AWD Pipe	paddy	5	5	Yield (q/ha)	6.80	5.10	33	11900	7350	1.62	89250	38750	1.43
Micro Sprinklers	leafy vegetables	5	5	Yield (q/ha)	8.60	6.50	32	60000	39000	1.65	91000	52000	1.57
Stalk Slasher	cotton, redgram	12	15	Yield (q/ha)	8.00	6.50	23	71000	44000	1.62	85000	60000	1.71
Drum Seeder	Paddy	5	2	Yield (q/ha)	69.45	57.25	21	60120	71900	2.20	64620	47560	1.74
Drum seeder	Paddy	5	2	Yield (q/ha)	65.09	61.43	6	128360	73666	1.57	124480	54378	1.44
Seed drill	Maize	10	4	Yield (q/ha)	68.25	58.75	16	58750	75156.2	2.28	70625	44642.5	1.63
Plastic mulch sheet laying machine	Vegetables	10	4	Yield (q/ha)	41.25	33.75	22	175250	236250	2.35	214375	123125	1.57
Planter	Redgram	25	10	Yield (q/ha)	14.00	9.50	47	50000	35000	1.70	75000	40000	1.53
Paddy Transplanter	Paddy	10	4	Cost (Rs/ha)				54625	81035	2.48	55375	69065	2.25
Raised bed planter and digger	Turmeric	5	2	Cost (Rs/ha)				237500	148200	1.62	265500	98740	1.37
Seed cum ferti-drill	Paddy	7	2.8	Yield (q/ha)	67.18	61.21	10	45140	85566	2.90	57421	61389	2.07
Total mechanization	Turmeric	5	2	Yield (q/ha)	71.25	56.25	27	256250	135625	1.53	262500	46875	1.18
Total mechanization	Groundnut	5	2	Yield (q/ha)	12.96	8.76	48	41680	27450	1.66	47670	12540	1.26
Total mechanization	Rice	5	2	Yield (q/ha)	58.64	48.34	21	58420	55450	1.95	74570	31650	1.42

Demos = No. of Demonstrations, KVKs = No. of KVKs; Demo = Demonstration; Check = Farmer's Practice; % = Per cent increase in demonstration over check; BCR = Benefit-Cost Ratio

Table 3.2.11. Performance of livestock, poultry, and fishery technologies in the FLDs of Zone X

State/Technology	Demos	Nos.	Parameter	Value			Economics					
							Demonstration			Check		
				Demo	Check	%	Gross Cost (Rs.)	Net Returns (Rs.)	BCR	Gross Cost (Rs.)	Net Returns (Rs.)	BCR
Andhra Pradesh												
Buffalo												
Disease Management												
Integrated health management	10	10	Milk (L)	85	62	37	2100	11200	6.33	1200	4800	5.00
Mastitis mgt through diet	2	10	Milk (L)	10	8	25	27506	255500	10.29	30000	204400	7.81
Feed and Fodder management												
CoFS-29 + Hedge lucerne	10	20	Yield (t/ha)	6.09	5.29	15	96.2	147.4	2.53	102.6	109	2.06
Nutrition Management												
Bypass fat	10	50	Fat (%)	7.5	4.3	74	22957	18770	1.82	10245	6987	1.68
Bypass fat	10	40	Milk (L)	567	486	17	1200	2600	3.17	800	1256	2.57
RSMM	10	50	Milk (L/90 days)	648	585	11	17812	15218	1.85	16750	12500	1.75
UMMB	10	50	Milk (L)	782	534	46	21896	17488	1.80	15025	10771	1.72
Production and Mgt												
Double PgF2 α protocol	10	20	Conception (%)	93.4	66.7	40	1600	650	1.41	1360	550	1.40
Cattle												
Disease Management												
Mastitis mgt through diet	30	30	Healthy animals (%)	94	84	12	2880	5040	2.75	2520	3480	2.38
Feed and Fodder mgt												
Co FS 31	10	25	Yield (q/ha)	142	64.5	120	5625	15675	3.79	3600	6150	2.71
Cowpea	10	25	Yield (q/ha)	92.3	70	32	4200	7820	2.86	3400	5750	2.69
Mixed fodder	10		Milk (L)	585	360	63	29250	14730	1.50	9200	7000	1.76
Silage	8	32	Milk (L)	9	6.5	38	530	1150	3.17	850	950	2.12
Super Napier grass	10	35	Yield (t/ha)	557	398	40	120500	87465	1.73	93490	64500	1.69
Nutrition Management												
Bypass fat	20	20	Milk (L)	445	418	6	8800	22250	3.53	9000	20900	3.32
RSMM	10	30	Milk (L)	711	648	10	800	2520	4.15	480	1100	3.29
UMMB	10	10	Milk (L)	6.5	6.2	5	4400	4860	2.10	4200	4090	1.97
Fish												
Composite fish culture												
Grass carp	10		Yield (kg/ha)	1500	1264	19	100000	65000	1.65	100000	34930	1.35
Disease Management												
IDM	5		Yield (kg/ha)	1625	1200	35	80000	98750	2.23	70000	62000	1.89
Nutrition Management												
Argulus (Fish Lice) mgt	10		Incidence (%)	2.1	1.7	24	210000	60000	1.29	240000	50000	1.21
Minerals	5		Yield (kg/ha)	4958	4312	15	1090760	495800	1.45	1034880	344960	1.33

State/Technology	Demos	Nos.	Parameter	Value			Economics					
							Demonstration			Check		
				Demo	Check	%	Gross Cost (Rs.)	Net Returns (Rs.)	BCR	Gross Cost (Rs.)	Net Returns (Rs.)	BCR
Production and Management												
BMP	5		kg/ha	6116	5917	3	354728	287452	1.81	384605	236680	1.62
Probiotic	10	1500000	Yield (kg/ acre)	2150	1783	21	539025	166125	1.31	399550	90800	1.23
Poultry												
Disease Management												
Deworming and NCD vaccination	10	300	Wt gain (g/12 weeks)	660	570	16	4000	11000	3.75	4000	8500	3.13
Evaluation of Breeds												
Aseel	10	100	Wt (kg)	1.9	1.5	27	325	721	3.22	293	296	2.01
Kadaknath	200	2000	Survivability %	2.2	1.8	22	616	500	1.81	360	250	1.69
Kaveri	10	100	Wt (kg)	1.9	1.2	58	6300	14230	3.26	5100	9600	2.88
Rajasri	2	1100	Eggs	150	30	400	26000	413550	16.91	26000	303760	12.68
Vanasri	10	100	Wt (kg)	19.08	11.4	67	2500	4178	2.67	2000	1990	2.00
Nutrition Management												
Azolla	10	200	Wt (g)	900	850	6	11000	27200	3.47	12500	20400	2.63
Sheep												
Disease Management												
Herbal acaricide	8	40	Healthy animals (%)	90	60	50	680	6350	10.34	940	1534	2.63
Nutrition mgt												
Creep feeding	10	70	Wt gain (kg)	11.6	7.8	49	4975	4017	1.81	3147	2411	1.77
Flushing	2	2	Survivability %	80	50	60	1000	40600	41.60	4000	37600	10.40
Milk replacer	10	30	Wt gain (kg)	18.1	10.7	69	5430	4680	1.86	3210	0	
Supplemental feed	5	20	Wt (kg)	16	10	60	1250	5950	5.76	900	3600	5.00
Supplementary concentrate	10	75	Wt (kg)	13	9	44	1225	5200	5.24	1000	3600	4.60
UMMB	10	50	Wt (kg)	17	10	70	2000	6500	4.25	1500	4000	3.67
Puducherry												
Cattle												
Disease Management												
EVM	10	2	Conception (%)	80	20	300	58600	21300	1.36	51900	12100	1.23
Tick shied	10	2	Milk (L)	8	6	33	60000	26400	1.44	52200	12600	1.24
Processing and value addition												
Paneer machine	5	1	Profit realized (Rs)	375	288	30	240	135	1.56	220	68	1.31
Fish												
Evaluation of Breeds												
Amur carp	5	800	Growth rate (g)	360	255	41	29000	54000	2.86	27000	38000	2.41
Nutrition Management												

State/Technology	Demos	Nos.	Parameter	Value			Economics					
							Demonstration			Check		
				Demo	Check	%	Gross Cost (Rs.)	Net Returns (Rs.)	BCR	Gross Cost (Rs.)	Net Returns (Rs.)	BCR
Floating fish feed	3	1200	Growth rate (g)	570	380	50	45000	85500	2.90	39000	57000	2.46
Goat												
Nutrition Management												
Milk replacer	5		Wt gain (kg)	7.65	6.15	24	2086.5	973.5	1.47	1782	680	1.38
Poultry												
Disease Management												
TANUVAS –TRPVB AMS beads	5		Survivability %	94.71	80	18	341.3	108.7	1.32	428.98	21.02	1.05
Tamil Nadu												
Cattle												
Disease Management												
Mastiguard	10	10	Incidence (%)	10	40	-75	27700	29000	2.05	29500	15500	1.53
Bio-teat Dip-Post dip	20	30	SCM	22	6	267	42250	42000	1.99	41500	40000	1.96
First aid kit	10	20	Wt (kg)	205	176	16	5750	7250	2.26	5500	5800	2.05
Integrated approach	20	49	Control (%)	67	53	26	42100	42000	2.00	40500	40000	1.99
Mastiguard	10	20	Milk (L)	9.6	8.1	19	28600	46500	2.63	26000	38200	2.47
Nano Heal Cream	10	20	Milk (L)	9.4	8.9	6	28500	43250	2.52	29500	41500	2.41
Spot on preparation	10	10	Milk (L)	8.2	6.8	21	16450	30250	2.84	18200	17900	1.98
Wound healing	10	10	Milk (L)	2800	2700	4	40000	74000	2.85	40000	41000	2.03
Feed and Fodder management												
Fodder bank	10	10	Milk (L)	11.2	8.4	33	5625	4455	1.79	5400	900	1.17
Mixed fodder	10	10	Milk (L)	8.3	6.4	30	16864	32136	2.91	18456	16542	1.90
Nutrition Management												
By-products	5	50	Milk (L)	2240	1820	23	53760	35840	1.67	50960	21840	1.43
Bypass fat	10	20	Fat (%)	4.2	3.8	11	13350	23550	2.76	11700	16020	2.37
Bypass fat	10	20	Milk (L)	7	5.5	27	7830	12180	2.56	13050	10340	1.79
TANUVAS feed calculator	10	2	Milk (L)	10	6	67	200	161	1.81	150	61	1.41
Production and Management												
Concentrate mixture	5	10	Milk (L)	9.5	7.9	20	50081	34035	1.68	45789	24883	1.54
Intravaginal Sponge	10	10	Cost (Rs)	388	431	-10	38800	73200	2.89	43100	68900	2.60
ProSync NC	10	20	Milk (L)	3376	2590	30	50925	50352	1.99	62464	15236	1.24
ProSync NC	10	10	Cost (Rs)	40300	44000	-8	40300	71700	2.78	44000	68000	2.55
TNAU Cattle expert system	20	50	Milk (L)	12.1	9.8	23	51450	56310	2.09	38800	27560	1.71
Duckery												
Evaluation of Breeds												
Duck farming	10	5	Eggs	180	120	50	2000	3600	2.80	2000	2400	2.20
Pekin duck	10	0	Eggs	300	247	21	4050	2610	1.64	3450	1236	1.36

State/Technology	Demos	Nos.	Parameter	Value			Economics					
							Demonstration			Check		
				Demo	Check	%	Gross Cost (Rs.)	Net Returns (Rs.)	BCR	Gross Cost (Rs.)	Net Returns (Rs.)	BCR
Fish												
Composite fish culture												
Floating fish feed	3	1000	Wt (kg)	52.97	37.12	43	582736	303252	1.52	408408	93078	1.23
Floating pellet	3	0	Wt (kg)	4089	3370	21	348800	589500	2.69	229300	128500	1.56
Stunted fish fingerlings	3	0	Yield (kg / ha)	4250	3550	20	352000	582000	2.65	224100	132300	1.59
Evaluation of Breeds												
GIFT Tilapia	10	500	Yield (q/ha)	250	170	47	90000	160000	2.78	120000	50000	1.42
Production and Management												
Fish farming	5	2500	kg/unit	95	64	48	1772	7768	5.38	2176	4284	2.97
Carp polyculture	5	7500	Yield (q/ha)	40.32	27.31	48	133605	184465	2.38	133202	81678	1.61
Composite fish culture	3	3000	Wt (kg)	56.916	47.527	20	796824	671694	1.84	617853.6	350078.6	1.57
Composite fish culture	5	6000	Yield (q/ha)	40.02	26.78	49	135990	173430	2.28	138823	83597	1.60
Integration poultry with fish	3	3000	Wt (kg)	77.29	57.52	34	737769	604269	1.82	484965	366015	1.75
Murrel culture	3		Wt (kg)	772	289	167	176220	347400	2.97	41675	72250	2.73
Goat												
Disease Management												
EVM	10	100	Wt gain (kg)	13.3	10.4	28	2395	1595	1.67	2865	273	1.10
Nutrition Management												
Milk replacer	10	20	Wt gain (kg)	18.5	13.5	37	3100	6675	3.15	2400	3660	2.53
Mineral mixture	10	10	Wt (kg)	15	11	36	11536	21243	2.84	17463	19526	2.12
RSMM	10		Wt (kg)	17	15	13	3096	3000	1.97	3364	2700	1.80
Special diet	10		Wt (kg)	10	8	25	1827	1973	2.08	1800	1240	1.69
TANUVAS AFLD salt lick	10		W (kg)	18.2	15	21	1500	3960	3.64	1500	3000	3.00
TANUVAS mineral mixture	10	10	Wt (kg)	20	12	67	15500	8500	1.55	15000	6600	1.44
Processing and value addition												
Value added meat	10	10	Preference (%)	2	10	-80	3600	2670	1.74	3420	480	1.14
FAMACHA CHART	10	100	Wt gain (kg)	85	48	77	153120	223220	2.46	168523	178569	2.06
Poultry												
Disease Management												
AMS beads	10	250	Survivability %	97	74	31	8000	18500	3.31	6500	10150	2.56
Fowl pox and RDVK vac	10	100	Wt gain (kg)	89	44	102	29741	39549	2.33	31562	24568	1.78
Probiotic beads	10	100	Wt (g)	980	830	18	4222	12585	3.98	3620	8850	3.44
Vaccination	5	20	Survivability %	96.2	88.1	9	97.2	203	3.09	78.3	153	2.95
Evaluation of Breeds												

State/Technology	Demos	Nos.	Parameter	Value			Economics					
							Demonstration			Check		
				Demo	Check	%	Gross Cost (Rs.)	Net Returns (Rs.)	BCR	Gross Cost (Rs.)	Net Returns (Rs.)	BCR
Improved native chicken	5	50	Wt (kg)	1.05	0.78	35	110	205	2.86	110	124	2.13
Namakkal Gold quail	10	20	Eggs	220	180	22	9200	13800	2.50	9200	8800	1.96
Nandanam IV	10	200	Eggs	91	47	94	135430	184780	2.36	152663	115896	1.76
Nandhanam 4 -Naked Neck	10	250	Wt (kg)	3.2	2.8	14	8750	25750	3.94	0	0	
Scientific poultry rearing	10	250	Eggs	179	78	129	3305	7421	3.25	4100	1087	1.27
TANUVAS Aseel	10	250	Wt (kg)	1.097	0.896	22	5263.87	8371.13	2.59	4212.9	4490.91	2.07
TANUVAS Gramapriya	10	40	Wt gain (kg)	180	90	100	7500	24000	4.20	7000	12000	2.71
TANUVAS Star chicken	5	150	Wt (kg)	30.75	25.3	22	4305	6150	2.43	4048	5566	2.38
Nutrition Management												
Tree leaf meal	10	250	Eggs	171	74	131	3738	6858	2.83	3917	1948	1.50
Calcium supplement	10	500	Hatching %	94	81	16	47850	29882	1.62	35780	14312	1.40
Pro-beads EC	10	190	Wt (kg)	10.5	9.2	14	1470	2205	2.50	1380	1840	2.33
Production and Management												
Portable mini poultry brooder	10	10	Livability (%)	97.96	85	15	29500	22600	1.77	27650	9460	1.34
TANUVAS Poultry waterer	5	150	Wt (kg)	5.25	3.99	32	840	997	2.19	678	718	2.06
Egg incubator	10	250	Net returns				3200	3380	2.06	5250	2050	1.39
Quail												
Evaluation of Breeds												
Namakkal Gold Quail	10	1000	Eggs	228	123	85	37297	57467	2.54	29770	9423	1.32
Nandanam quail 3	5	100	Eggs	244	184	33	2575	1534	1.60	2460	336	1.14
Rabbitry												
Feed and Fodder management												
Azolla	10	100	Wt (kg)	90	43	109	75896	111693	2.47	81100	91016	2.12
Sheep												
Feed and Fodder management												
Fortified concentrate mixture	10	50	Wt gain (kg)	11.25	8.25	36	1350	2637.5	2.95	1275	1510	2.18
TANUVAS Sheep and Goat mineral mixture	10	20	Wt (kg)	300	250	20	10000	6000	1.60	8000	4000	1.50
Telangana												
Buffalo												
Feed and Fodder management												
Super Napier	11	245	Yield (t/ha)	115	95	21	10500	9250	1.88	1600	1250	1.78
Nutrition Management												
Area Specific Mineral Mixture	20	60	Milk (L)	5.91	5.4	9	1325	2450	2.85	5975	5425	1.91

State/Technology	Demos	Nos.	Parameter	Value			Economics					
							Demonstration			Check		
				Demo	Check	%	Gross Cost (Rs.)	Net Returns (Rs.)	BCR	Gross Cost (Rs.)	Net Returns (Rs.)	BCR
Cattle												
Feed and Fodder management												
Mixed fodder	10	42	Yield (t/ha)	132.5	82.5	61	11500	6850	1.60	4850	2680	1.55
TMR	10	32	Milk (L)	255	190	34	152	85	1.56	265	82	1.31
Production and Management												
Sexed semen	50	50	Conception (%)	13	6	117	50000					
Fish												
Composite fish culture												
Optimum stocking density	3	0	Yield (q/ha)	465	427	9	558000	331500	1.59	512400	288400	1.56
Disease Management												
Disease treatment	3	2000	Yield (q/ha)	55	35	57	390000	620000	2.59	260000	350000	2.35
Fish Red Disease mgt	3	7500	Yield (q/ha)	7.9	4.4	80	33500	53400	2.59	18500	21100	2.14
Fish Production												
Integrated management of Argulus	3	0	Yield (q/ha)	452	386	17	542400	324550	1.60	463200	325700	1.70
Processing and value addition												
Optimum fish loading	5	1875	Survivability %	90	55	64	28500	21115	1.74	27000	9320	1.35
Production and Management												
BMP	3	0	Yield (kg)	470	423	11	564000	339600	1.60	507800	256600	1.51
Captive Fish Nursery Management	3	450000	Survivability %	70.5	29.5	139	44250	131500	3.97	35900	32600	1.91
IFS	3	2000	Yield (q/ha)	50	25	100	350000	700000	3.00	150000	240000	2.60
Goat												
Nutrition Management												
Stallfed Sheep/Goat Farming	10	50	W (kg)	1.85	1.15	61	1450	3275	3.26	1325	1750	2.32
Poultry												
Evaluation of Breeds												
Gramapriya	6	1150	Survivability %	80000	0		90000	50000	1.56	100000	60000	1.60
Rajasri	345	345	Eggs	375	225	67	660	475	1.72	160	105	1.66
Sheep												
Nutrition Management												
Balanced nutrition	5	150	Wt (kg)	3.5	2.8	25	500	9500	20.00	750	7250	10.67
Molasses coated mineral brick	20	100	Wt (kg)	19	16	19	8333	338333	41.60	33300	313333	10.41

MM= Mineral mixture; Demos = No. of Demonstrations, Nos.=No. of animals/birds/fish; Demo = Demonstration; Check = Farmer's Practice, % = Per cent increase in demonstration over check; BCR = Benefit Cost Ratio; ICF=Inland Fish Culture; CFC = Composite Fish Culture

Table 3.2.12. Performance of tools and enterprises in the FLDs of Zone X

State/Technology	Demos	Nos.	Parameter	Value			Economics					
							Demonstration			Check		
				Demo	Check	%	Gross Cost (Rs.)	Net Returns (Rs.)	BCR	Gross Cost (Rs.)	Net Returns (Rs.)	BCR
Andhra Pradesh												
Confectionery	10	10	Sensory evaluation	90	75	20						
Lime harvester	3	10	Fruits harvested per hour	150	110	36	50	475	10.50			
Mango harvester	3	10	Fruits harvested per hour	650	600	8						
Mango harvester	30	30	Economic value (Rs)	100000	94000	6	100000	94000	1.94	94000	60000	1.64
Moringa millet biscuit	10	10	Hedonic Scale	8.1	7.8	4	750	180	1.24	100	22	1.22
Nutri garden	10	10	Consumption (kg)	35	25	40						
Nutrition Garden	100	100	Nutrient intake	12000	8000	50	3000	9000	4.00	4000	4800	2.20
Papaya toffee	10	10	Hedonic Scale	8.1	7.4	9	250	150	1.60	60	15	1.25
Portable Vermicompost units	12	12	kg	6000	5000	20	10000	60000	7.00	500	2000	5.00
Tomato varugu and tomato powder	10	10	Hedonic Scale	8.5	7.7	10	500	680	2.36	120	20	1.17
Value added tomato	10	156	Lycopene content	17.84	17.72	1						
Value addition in mango	30	30	Shelf life	80	60	33	2600	4100	2.58	2600	2200	1.85
value addition in millets	15	30	Economic value (Rs)	16000	9000	78	22000	14000	1.64	6200	6900	2.11
Tamil Nadu												
Acetic Acid production from Cashew Apple	10	10	Litres	500	200	150	5000	15000	4.00	5000	2000	1.40
ARKA (OM) 1	10	10	Yield (kg)	1.2	1	20	19500	27750	2.42	20000	15650	1.78
Coconut Chips	10	10	Organoleptic Evaluation	4.65	3.5	33	13550	28050	3.07	6250	6250	2.00
Coconut products	5	10	Economics (Rs)	34200	25840	32	14730	19470	2.32	14500	11370	1.78
Cut flower production	5	5	Nos	325000	230000	41	150000	175000	2.17	150000	80000	1.53
Dry Grapes Manjari Medika	10	10	Organoleptic Evaluation	23	18	28	25800	67200	3.60	7857	14143	2.80
Extruded products from tapioca	10	8	Shelf life (Days)	90	90		1250	250	1.20	1100	100	1.09
Fermented milk products	10	0	Shelf life of curd (Days)	10	5	100	1500	900	1.60	1400	100	1.07
Guava powder	3	3	Organoleptic evaluation	6	8	-25	450	500	2.11	400	500	2.25
Hurdle technology for Pineapple	10	8	Shelf life (Days)	60	7	757	750	115	1.15	750	50	1.07
Instant mix	10	10	Shelf life (days) for 50kg	180	5	3500	6750	10750	2.59	2250	1500	1.67
Low fat banana chips	10	10	Shelf life (days) for 50kg	25	10	150	15000	25000	2.67	2000	1200	1.60
Low fat banana chips	3	3	Oil absorption (%)	27.88	21.55	29	330	500	2.52	390	500	2.28
Low-Fat Coconut products	10	8	Consumer acceptability (score)	9	7	29	2770	2030	1.73	500	50	1.10

State/Technology	Demos	Nos.	Parameter	Value			Economics					
							Demonstration			Check		
				Demo	Check	%	Gross Cost (Rs.)	Net Returns (Rs.)	BCR	Gross Cost (Rs.)	Net Returns (Rs.)	BCR
Multi grain millet foods	3	3	Organoleptic evaluation	9	7.8	15	200	400	3.00	180	300	2.67
NCOF Waste Decomposer	10	10	C/N ratio	23	32	-28	1024	2744	3.68			
Nutraceutical dip tea	3	3	Organoleptic evaluation	8.5	7.9	8	640	1500	3.34	580	1100	2.90
Nutri garden	10	10	Yield	20	18	11	14730	19470	2.32	14500	11370	1.78
Poultry mobile app	10	10	Weight (kg)	1	0.8	25	3800	3965	2.04	4500	2600	1.58
Rapid composting techniques	10	10	Compost production (kg)	82500	52500	57	25000	57500	3.30	24000	28500	2.19
Rapid Vermicompost production	10	10	C/N ratio	21	32	-34	10826	17974	2.66	4280	3720	1.87
Rapid vermicomposting technology	10	10	Composting period (days)	96	156	-38	4800	16000	4.33	12400	16000	2.29
Ready to eat/ cook Mushroom products	5	10	Shelf life (days)	30105	22890	32	13500	16605	2.23	12489	10401	1.83
Ready to eat/cook mushroom products	10	10	Yield (kg)	15	13	15	13500	16605	2.23	12489	10401	1.83
seaweed millets cookies	10	10	Shelf life	350	200	75	150	200	2.33	125	75	1.60
Sympodial orchid	5	5	Nos	520000	480000	8	140000	380000	3.71	140000	340000	3.43
TNAU Bio-mineralizer	10	10	Yield (q)	92	85.5	8	93750	177650	2.89	87500	164725	2.88
TNAU Bio-mineralizer	10	10	C/N ratio	20	29	-31	1246	2754	3.21	470		
TNAU Fruity fresh	10	10	q/ha	400	400	0	92000	443800	5.82	92000	428000	5.65
TNAU Sweet flag	10	10	Shelf life (days)	330	72	358						
TNAU Sweet flag	10	10	Yield (kg)	100	94	6	5600	6500	2.16	5040	5120	2.02
TNAU sweet flag	10	10	Shelf life (days)	240	95	153						
Value Added Honey	10	10	Consumer acceptability (score)	9	8.5	6	5018	7592	2.51	2000	1650	1.83
Value added Moringa	5	5	Cost (Rs)	4400	2400	83	244	460	2.89	260	160	1.62
Value added Tomato	5	5	Cost (Rs)	3200	1800	78	310	220	1.71	160	66	1.41
VAM	10	10	Seedling establishment rate (%)	95	80	19	20000	15000	1.75	20000	13000	1.65
Telangana												
Millet flours	35	96	Sensory evaluation	86	45	91	6500	7500	2.15	2500	1500	1.60
Value added groundnut products	10	10	Income (Rs)	36000	24000	50	16200	36000	3.22	17250	24000	2.39
Value added millet products	10	10	Income (Rs)	75000	13500	456	46500	75000	2.61	9500	13500	2.42
Value added millet products	2	6	Acceptability	90	75	20	24000	15000	1.63	23400	45000	2.92

Demos = No. of Demonstrations, Nos.= No. of enterprise units, Demo = Demonstration, Check = Farmer's Practice, % = Per cent increase in demonstration over check; BCR = Benefit Cost Ratio

Table 3.2.13. Performance of enterprises on women empowerment in the FLDs of Zone X

State/Technology	Demos	Nos.	Parameter	Value			Economics					
							Demonstration			Check		
				Demo	Check	%	Gross Cost (Rs.)	Net Returns (Rs.)	BCR	Gross Cost (Rs.)	Net Returns (Rs.)	BCR
Andhra Pradesh												
Backyard poultry	10	10	Growth (kg)	1.85	1.1	68	5550	12568	3.26	4126	8653	3.10
Backyard Poultry	10	200	Egg consumption (days)	250	180	39	450	350	1.78	400	150	1.38
Community nutri garden	20	20	Consumption per week (kg)	5	3	67	500	650	2.30	500	450	1.90
Community Nutri Garden	10	200	Frequency of consumption	2000	800	150	450	1540	4.42	100	60	1.60
Millet biscuits	20	20	Yield (kgs)	500	450	11	350	450	2.29	350	300	1.86
Moringa leaf powder foxtail millet cookies	10	30	Acceptance	6.6	4.9	35						
Nutri-garden	10	50	Frequency of consumption	1400	600	133	300	1000	4.33	700	200	1.29
Nutri-garden	50	50	Yield (kg)	1150	450	156	2500	6000	3.40	1000	1200	2.20
Nutri-garden	30	30	Yield (kg)	366	147	149	700	6512	10.30	200	1350	7.75
Sugarcane Leaf stripper	2	20	Labourer wages (Rs)	8000	6000	33	6400	2800	1.44	5600	3800	1.68
Triple layer Hermetic storage bags	1	20	Storage duration (days)	1800	300	500	1200	600	1.50	2200	1300	1.59
Wheel hoe	20	20	Drudgery Index	87	82	6	200	250	2.25	200	200	2.00
Tamil Nadu												
Nutri-garden	5	5	Yield (kg)	1.5765	0.55	187	1180	1503	2.27	1150	240	1.21
Nutri-garden	2	200	Yield (g)	500	250	100	50	100	3.00	50	250	6.00
Nutri-garden	5	5	Yield (q)	1.9	0.2	850	1450	5850	5.03	1320	1825	2.38
Nutri-garden	10	10	Yield (g)	550	200	175	150	400	3.67	125	75	1.60
Nutri-garden	5	5	Yield (kg)	242	28	764	1803	2432	2.35	285	205	1.72
Super bags	5	5	Healthy seeds (%)	100	78	28	7180	2820	1.39	7240	7800	2.08
TNAU fruity fresh	5	5	Shelf life (days)	15	4	275	1200	1900	2.58	1100	1000	1.91
Value added fish	5	15	Yield (Kg	7.5	6.5	15	1875	8250	5.40	2025	3468	2.71
Value added fish	10	10	Pesticide residue (ppm)	0.007	0.098	-93						
Value addition of Moringa pulp	10	10	Cost (Rs)	4400	2400	83	280	460	2.64	260	160	1.62
Value addition of tomato	10	10	Cost (Rs)	3200	1800	78	310	220	1.71	160	66	1.41
Telangana												
Cotton harvest bag	7	7	Drudgery reduction	100	68	47						
Nutri-garden	10	10	Consumption (kg)	100	77	30						
Nutri-garden	10	10	Income (Rs)	2230	1354	65	6912	5023	1.73	1400	523	1.37
Nutri-garden	10	10	Income (Rs)	1400	1100	27	100	1400	15.00			
Supplementation with nutri atta	10	10	Weight (gm)	100	87	15						

Demos = No. of Demonstrations, Nos.= No. of enterprise units, Demo = Demonstration, Check = Farmer's Practice, % = Per cent increase in demonstration over check BCR = Benefit Cost Ratio

Demonstration of Onion variety Bhima kiran – KVK, Medak (DDS), Telangana

Demonstration of IPM in Jasmine - KVK, Thoothukudi , Tamil Nadu

Demonstration of IPDM in paddy – KVK, Dindigul, Tamil Nadu

FLD on banana chip preparation – KVK, Perambalur , Tamil Nadu

Backyard poultry with Aseel birds – KVK, Prakasam (Darsi)

FLD on MSRI Paddy- KVK , Srikakulam , Andhra Pradesh

3.3. Trainings

Training is one of the important mandates of Krishi Vigyan Kendras which plays a pivotal role in capacity development of farmers and extension personnel to update their knowledge and skills on improved agricultural technologies. Accordingly, KVKs assess the training needs, prioritize, and conduct various training programmes for farmers and farmwomen primarily focused on knowledge and skills, while it is entrepreneurship development for rural youth and knowledge on frontier areas of science and technology for extension personnel. During the reporting period, KVKs in Zone-X conducted 8355 training programmes to 301966 beneficiaries (Table 3.3.1) including farmers, rural youth extension functionaries, sponsored trainings, and vocational trainings.

A total of 7340 training programmes on agricultural and allied technologies to increase the production and productivity of crops, dairy and others were organized for 264765 farmers and farm women, rural youth, and extension functionaries by KVKs in the Zone. Sponsored training was conducted for 30546 beneficiaries and vocational training for 6655 beneficiaries through 763 and 252 programmes, respectively. Clientele wise details conducted by KVKs of different states in Zone X are furnished in Table 3.3.2.

Table 3.3.1. Details of client wise training programmes organized by KVKs in Zone-X

Category	Tamil Nadu		Andhra Pradesh		Telangana		Puducherry		Total	
	NC	NP	NC	NP	NC	NP	NC	NP	NC	NP
Need-based trainings										
Farmers and Farm Women	3078	101385	1403	50242	1021	45788	64	2325	5566	199740
Rural Youth	566	16595	259	11218	143	4882	4	88	972	32783
Extension Personnel	348	13261	279	12254	168	6599	7	128	802	32242
Total need-based trainings	**3992**	**131241**	**1941**	**73714**	**1332**	**57269**	**75**	**2541**	**7340**	**264765**
Sponsored Trainings	612	24086	80	2699	65	3661	6	100	763	30546
Vocational Trainings	133	3845	79	1570	34	978	6	262	252	6655
Grand total	**4737**	**159172**	**2100**	**77983**	**1431**	**61908**	**87**	**2903**	**8355**	**301966**

NC = No. of courses NP = No. of Participants

Table 3.3.2. Details of client wise training programmes organized by KVKs in Zone-X

Clientele	No. of Courses	Other Beneficiaries			SC/ST Beneficiaries			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Tamil Nadu										
FFW	3078	46773	30728	77501	12777	11107	23884	59550	41835	101385
RY	566	6531	5302	11833	2268	2494	4762	8799	7796	16595
EF	348	6483	4594	11077	1057	1127	2184	7540	5721	13261
Total	**3992**	**59787**	**40624**	**100411**	**16102**	**14728**	**30830**	**75889**	**55352**	**131241**
Sponsored	612	10952	7217	18169	2929	2988	5917	13881	10205	24086
Vocational	133	1398	1415	2813	418	614	1032	1816	2029	3845
Grand Total	**4737**	**72137**	**49256**	**121393**	**19449**	**18330**	**37779**	**91586**	**67586**	**159172**
Andhra Pradesh										
FFW	1403	21610	13890	35500	8719	6023	14742	30329	19913	50242
RY	259	3513	5118	8631	1285	1302	2587	4798	6420	11218
EF	279	6264	3469	9733	1452	1069	2521	7716	4538	12254
Total	**1941**	**31387**	**22477**	**53864**	**11456**	**8394**	**19850**	**42843**	**30871**	**73714**
Sponsored	80	909	611	1520	722	457	1179	1631	1068	2699
Vocational	79	374	438	812	420	338	758	794	776	1570

Clientele	No. of Courses	Other Beneficiaries			SC/ST Beneficiaries			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Grand Total	**2100**	**32670**	**23526**	**56196**	**12598**	**9189**	**21787**	**45268**	**32715**	**77983**
Telangana										
FFW	1021	18620	7722	26342	11101	8345	19446	29721	16067	45788
RY	143	1732	982	2714	1198	970	2168	2930	1952	4882
EF	168	3364	1504	4868	989	742	1731	4353	2246	6599
Total	**1332**	**23716**	**10208**	**33924**	**13288**	**10057**	**23345**	**37004**	**20265**	**57269**
Sponsored	65	1280	583	1863	960	838	1798	2240	1421	3661
Vocational	34	325	103	428	326	224	550	651	327	978
Grand Total	**1431**	**25321**	**10894**	**36215**	**14574**	**11119**	**25693**	**39895**	**22013**	**61908**
Puducherry										
FFW	64	1370	503	1873	212	240	452	1582	743	2325
RY	4	48	11	59	19	10	29	67	21	88
EF	7	69	33	102	18	8	26	87	41	128
Total	**75**	**1487**	**547**	**2034**	**249**	**258**	**507**	**1736**	**805**	**2541**
Sponsored	6	27	62	89	3	8	11	30	70	100
Vocational	6	68	146	214	11	37	48	79	183	262
Grand Total	**87**	**1582**	**755**	**2337**	**263**	**303**	**566**	**1845**	**1058**	**2903**
Grand total for Zone -X										
FFW	5566	88373	52843	141216	32809	25715	58524	121182	78558	199740
RY	972	11824	11413	23237	4770	4776	9546	16594	16189	32783
EF	802	16180	9600	25780	3516	2946	6462	19696	12546	32242
Total	**7340**	**116377**	**73856**	**190233**	**41095**	**33437**	**74532**	**157472**	**107293**	**264765**
Sponsored	763	13168	8473	21641	4614	4291	8905	17782	12764	30546
Vocational	252	2165	2102	4267	1175	1213	2388	3340	3315	6655
Grand Total	**8355**	**131710**	**84431**	**216141**	**46884**	**38941**	**85825**	**178594**	**123372**	**301966**

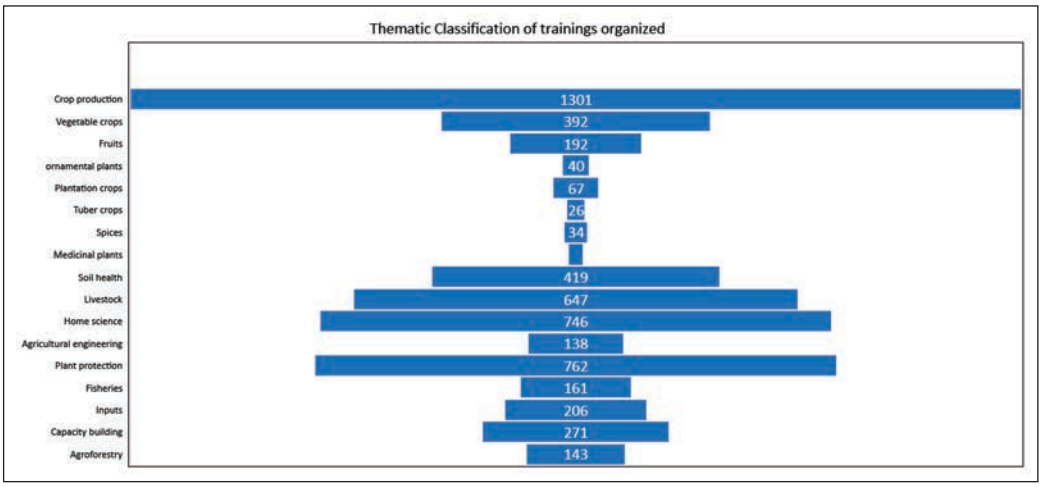
FFW=Farmers and Farm Women, RY=Rural Youth, EF=Extension Functionaries

Thematic area wise trainings offered to farmers and farm women are furnished in Table 3.3.3. A total of 5566 training courses were organized for 199740 farmers in Tamil Nadu, Andhra Pradesh, Telangana, and Puducherry. Among the various thematic areas, 1301 courses were on crop production, 772 on horticulture, 419 on soil health, 647 on livestock, 746 on women empowerment, 138 on agricultural engineering, 762 on plant protection, 161 on fisheries, 206 on production of seeds and other inputs, 271 on capacity building and 143 on agro-forestry.

Using the millet primary processing unit and biscuit making unit provided by KVK, Vizianagaram , I formed an FPO of 25 tribal women and I am selling millet biscuits to ITDA women hostels and earning Rs 12000 per month. I received Narishakthi puraskar from Hon. President of India and best women farmer award from ANGRAU.

Ms. K. Saraswathi
Kothavalasa, Vizianagaram, AP.

3.3.1. Farmers and Farm women



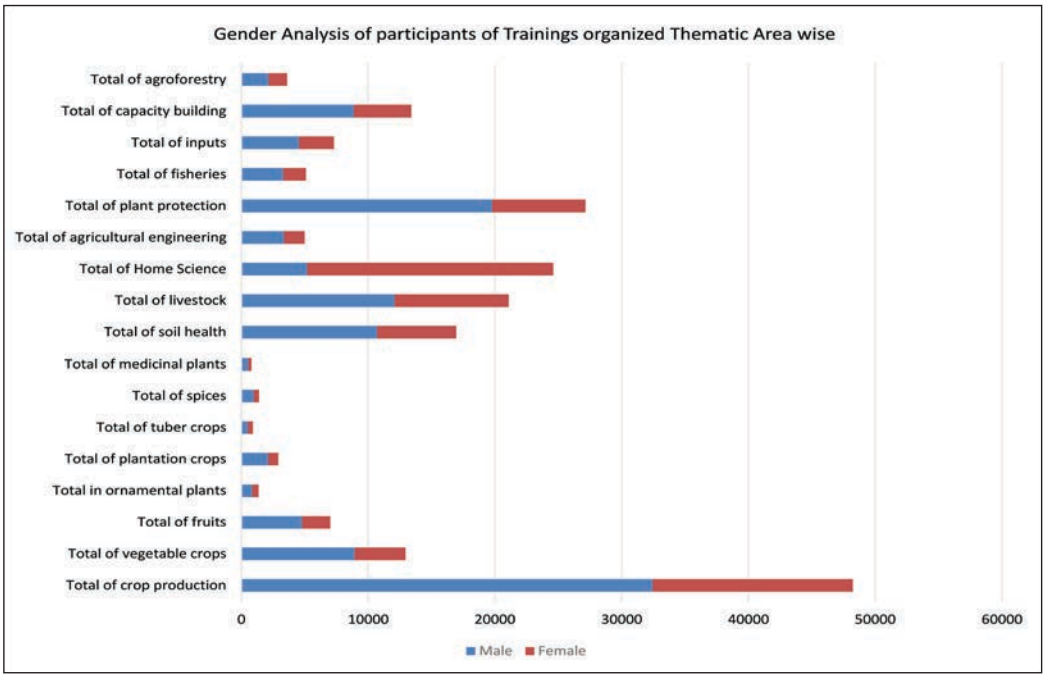


Table 3.3.3. Details of subject area wise training programmes conducted for farmers in Zone-X

Thematic area	No. of courses	Participants								
		Others			SC/ST			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I. Crop production										
Crop diversification	61	1332	379	**1711**	386	268	**654**	**1718**	**647**	**2365**
Cropping systems	58	1515	499	**2014**	327	200	**527**	**1842**	**699**	**2541**
Integrated crop management	450	8280	3672	**11952**	2908	1647	**4555**	**11188**	**5319**	**16507**
Integrated farming	55	815	540	**1355**	212	118	**330**	**1027**	**658**	**1685**
Integrated nutrient management	124	2483	1029	**3512**	594	383	**977**	**3077**	**1412**	**4489**
Micro irrigation/irrigation	31	588	251	**839**	127	90	**217**	**715**	**341**	**1056**
Nursery management	19	326	175	**501**	86	65	**151**	**412**	**240**	**652**
Production of organic inputs	84	1217	680	**1897**	377	630	**1007**	**1594**	**1310**	**2904**

Thematic area	No. of courses	Participants								
		Others			SC/ST			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Resource conservation technologies	38	938	417	**1355**	283	131	**414**	**1221**	**548**	**1769**
Seed production	76	1406	715	**2121**	315	213	**528**	**1721**	**928**	**2649**
Soil & water conservation	68	1121	458	**1579**	577	330	**907**	**1698**	**788**	**2486**
Weed management	43	915	243	**1158**	238	93	**331**	**1153**	**336**	**1489**
Others	194	3533	1657	**5190**	1541	912	**2453**	**5074**	**2569**	**7643**
Total of crop production	**1301**	**24469**	**10715**	**35184**	**7971**	**5080**	**13051**	**32440**	**15795**	**48235**
II. Horticulture										
a) Vegetable crops										
Exotic vegetables	9	208	60	**268**	37	5	**42**	**245**	**65**	**310**
Export potential vegetables	6	183	27	**210**	12	5	**17**	**195**	**32**	**227**
Grading and standardization	7	205	62	**267**	37	16	**53**	**242**	**78**	**320**
Nursery raising	69	1225	466	**1691**	409	213	**622**	**1634**	**679**	**2313**
Off-season vegetables	24	448	240	**688**	158	70	**228**	**606**	**310**	**916**
Production of low value and high value crops	50	742	295	**1037**	232	89	**321**	**974**	**384**	**1358**
Protective cultivation	34	462	320	**782**	180	91	**271**	**642**	**411**	**1053**
Others in vegetable crop	28	458	241	**699**	198	108	**306**	**656**	**349**	**1005**
Others	165	2748	1179	**3927**	990	526	**1516**	**3738**	**1705**	**5443**
Total of vegetable crops	**392**	**6679**	**2890**	**9569**	**2253**	**1123**	**3376**	**8932**	**4013**	**12945**
b) Fruits										
Cultivation of fruit	64	906	500	**1406**	409	226	**635**	**1315**	**726**	**2041**
Export potential fruits	4	51	70	**121**	56	34	**90**	**107**	**104**	**211**
Layout and management of orchards	6	118	58	**176**	22	12	**34**	**140**	**70**	**210**
Management of young plants/orchards	17	487	131	**618**	155	67	**222**	**642**	**198**	**840**
Micro irrigation systems of orchards	29	482	206	**688**	204	178	**382**	**686**	**384**	**1070**
Plant propagation techniques	14	300	105	**405**	185	70	**255**	**485**	**175**	**660**
Rejuvenation of old orchards	12	148	88	**236**	69	18	**87**	**217**	**106**	**323**
Training and pruning	17	259	111	**370**	165	74	**239**	**424**	**185**	**609**
Others	29	536	165	**701**	250	93	**343**	**786**	**258**	**1044**
Total of fruits	**192**	**3287**	**1434**	**4721**	**1515**	**772**	**2287**	**4802**	**2206**	**7008**
c) Ornamental plants										
Export potential of ornamental plants	10	154	52	**206**	69	45	**114**	**223**	**97**	**320**
Management of potted plants	1	21	29	**50**	5	4	**9**	**26**	**33**	**59**
Nursery management	10	156	161	**317**	78	50	**128**	**234**	**211**	**445**
Propagation techniques of ornamental plants	5	43	41	**84**	35	23	**58**	**78**	**64**	**142**
Others in ornamental plants	2	23	7	**30**	2	0	**2**	**25**	**7**	**32**
Others	12	183	81	**264**	67	27	**94**	**250**	**108**	**358**
Total in ornamental plants	**40**	**580**	**371**	**951**	**256**	**149**	**405**	**836**	**520**	**1356**
d) Plantation crops										
Processing and value addition	8	126	89	**215**	30	22	**52**	**156**	**111**	**267**
Production and management technology	52	1269	363	**1632**	528	256	**784**	**1797**	**619**	**2416**
Others	7	136	49	**185**	22	10	**32**	**158**	**59**	**217**
Total of plantation crops	**67**	**1531**	**501**	**2032**	**580**	**288**	**868**	**2111**	**789**	**2900**
e) Tuber crops										
Processing and value addition	7	72	22	**94**	40	61	**101**	**112**	**83**	**195**
Production and management technology	19	295	228	**523**	118	83	**201**	**413**	**311**	**724**

Thematic area	No. of courses	Participants								
		Others			SC/ST			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Others	0	0	0	**0**	0	0	**0**	**0**	**0**	**0**
Total of tuber crops	**26**	**367**	**250**	**617**	**158**	**144**	**302**	**525**	**394**	**919**
f) Spices										
Processing and value addition	7	87	40	**127**	113	34	**147**	**200**	**74**	**274**
Production and management technology	17	266	123	**389**	177	73	**250**	**443**	**196**	**639**
Others	10	144	20	**164**	185	127	**312**	**329**	**147**	**476**
Total of spices	**34**	**497**	**183**	**680**	**475**	**234**	**709**	**972**	**417**	**1389**
g) Medicinal and Aromatic Plants										
Nursery management	6	100	54	**154**	62	46	**108**	**162**	**100**	**262**
Post-harvest technology and value addition	1	12	6	**18**	3	1	**4**	**15**	**7**	**22**
Production and management technology	11	274	60	**334**	62	45	**107**	**336**	**105**	**441**
Others	3	10	0	**10**	37	15	**52**	**47**	**15**	**62**
Total of medicinal plants	**21**	**396**	**120**	**516**	**164**	**107**	**271**	**560**	**227**	**787**
Grand total of horticulture	**772**	**13337**	**5749**	**19086**	**5401**	**2817**	**8218**	**18738**	**8566**	**27304**
III. Soil health and fertility management										
Balance use of fertilizers	53	1221	609	**1830**	311	237	**548**	**1532**	**846**	**2378**
Integrated nutrient management	113	1989	1090	**3079**	674	360	**1034**	**2663**	**1450**	**4113**
Integrated water management	10	171	59	**230**	78	40	**118**	**249**	**99**	**348**
Management of problematic soils	13	217	98	**315**	72	46	**118**	**289**	**144**	**433**
Micronutrient deficiency in crops	21	308	204	**512**	166	61	**227**	**474**	**265**	**739**
Nutrient use efficiency	9	210	54	**264**	51	35	**86**	**261**	**89**	**350**
Production and use of organic inputs	34	648	383	**1031**	258	186	**444**	**906**	**569**	**1475**
Soil and water testing	66	1392	633	**2025**	423	575	**998**	**1815**	**1208**	**3023**
Soil fertility management	54	1032	519	**1551**	368	191	**559**	**1400**	**710**	**2110**
Others	46	918	679	**1597**	207	179	**386**	**1125**	**858**	**1983**
Total of soil health	**419**	**8106**	**4328**	**12434**	**2608**	**1910**	**4518**	**10714**	**6238**	**16952**
IV. Livestock production and management										
Animal nutrition management	73	1018	638	**1656**	346	242	**588**	**1364**	**880**	**2244**
Dairy management	95	1230	951	**2181**	403	504	**907**	**1633**	**1455**	**3088**
Disease management	78	973	622	**1595**	400	295	**695**	**1373**	**917**	**2290**
Feed & fodder technology	89	1545	789	**2334**	485	300	**785**	**2030**	**1089**	**3119**
Piggery management	13	181	66	**247**	103	47	**150**	**284**	**113**	**397**
Poultry management	138	1376	1013	**2389**	812	1181	**1993**	**2188**	**2194**	**4382**
Production of quality animal products	26	439	318	**757**	131	80	**211**	**570**	**398**	**968**
Rabbit management	7	54	51	**105**	59	47	**106**	**113**	**98**	**211**
Goat farming	76	929	617	**1546**	431	523	**954**	**1360**	**1140**	**2500**
Others	52	947	517	**1464**	227	207	**434**	**1174**	**724**	**1898**
Total of livestock	**647**	**8692**	**5582**	**14274**	**3397**	**3426**	**6823**	**12089**	**9008**	**21097**
V. Home Science/Women empowerment										
Design and development of low/minimum cost diet	23	113	438	**551**	25	233	**258**	**138**	**671**	**809**
Designing and development for high nutrient efficiency diet	16	143	227	**370**	48	174	**222**	**191**	**401**	**592**
Gender mainstreaming through SHGs	20	2	308	**310**	0	76	**76**	**2**	**384**	**386**
Household food security by kitchen gardening and nutrition gardening	154	836	2946	**3782**	307	1301	**1608**	**1143**	**4247**	**5390**
Location specific drudgery reduction technologies	32	170	615	**785**	88	145	**233**	**258**	**760**	**1018**

Thematic area	No. of courses	Participants								
		Others			SC/ST			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Minimization of nutrient loss in processing	18	65	318	**383**	11	63	**74**	**76**	**381**	**457**
Processing and cooking	51	203	990	**1193**	67	277	**344**	**270**	**1267**	**1537**
Rural Crafts	1	0	0	**0**	3	12	**15**	**3**	**12**	**15**
Storage loss minimization techniques	14	102	234	**336**	14	12	**26**	**116**	**246**	**362**
Value addition	271	1346	4024	**5370**	671	2111	**2782**	**2017**	**6135**	**8152**
Women and childcare	60	164	2177	**2341**	39	521	**560**	**203**	**2698**	**2901**
Women empowerment	46	232	1090	**1322**	84	471	**555**	**316**	**1561**	**1877**
Others	40	291	475	**766**	167	181	**348**	**458**	**656**	**1114**
Total of Home Science	**746**	**3667**	**13842**	**17509**	**1524**	**5577**	**7101**	**5191**	**19419**	**24610**
VI. Agricultural engineering										
Farm machinery and its maintenance	60	992	207	**1199**	337	151	**488**	**1329**	**358**	**1687**
Installation and maintenance of micro irrigation systems	18	233	83	**316**	264	43	**307**	**497**	**126**	**623**
Post-harvest technology	14	211	50	**261**	81	52	**133**	**292**	**102**	**394**
Production of small tools and implements	3	29	11	**40**	28	22	**50**	**57**	**33**	**90**
Repair and maintenance of farm machinery and implements	8	168	42	**210**	67	9	**76**	**235**	**51**	**286**
Small scale processing and value addition	6	61	48	**109**	37	40	**77**	**98**	**88**	**186**
Use of plastics in farming practices	3	48	23	**71**	62	24	**86**	**110**	**47**	**157**
Solar powered farm devices	26	617	658	**1275**	130	164	**294**	**747**	**822**	**1569**
Others	0	0	0	**0**	0	0	**0**	**0**	**0**	**0**
Total of agricultural engineering	**138**	**2359**	**1122**	**3481**	**1006**	**505**	**1511**	**3365**	**1627**	**4992**
VII. Plant protection										
Biocontrol of pests and diseases	72	1275	451	**1726**	412	362	**774**	**1687**	**813**	**2500**
Integrated disease management	167	2631	1000	**3631**	1028	563	**1591**	**3659**	**1563**	**5222**
Integrated Pest Management	387	7444	2183	**9627**	2912	1177	**4089**	**10356**	**3360**	**13716**
Production of biocontrol agents and bio pesticides	35	655	284	**939**	358	231	**589**	**1013**	**515**	**1528**
Seed treatment techniques	101	2347	731	**3078**	720	386	**1106**	**3067**	**1117**	**4184**
Total of plant protection	**762**	**14352**	**4649**	**19001**	**5430**	**2719**	**8149**	**19782**	**7368**	**27150**
VIII. Fisheries										
Breeding and culture of ornamental fishes	6	125	60	**185**	20	6	**26**	**145**	**66**	**211**
Carp fry and fingerling rearing	13	243	57	**300**	99	44	**143**	**342**	**101**	**443**
Composite fish culture	40	480	288	**768**	284	187	**471**	**764**	**475**	**1239**
Fish processing and value addition	13	234	211	**445**	61	82	**143**	**295**	**293**	**588**
Hatchery management and culture of freshwater prawn	2	0	13	**13**	27	10	**37**	**27**	**23**	**50**
Integrated fish farming	28	475	231	**706**	190	108	**298**	**665**	**339**	**1004**
Pen culture of fish and prawn	1	57	0	**57**	5	0	**5**	**62**	**0**	**62**
Portable plastic carp hatchery	4	33	42	**75**	5	9	**14**	**38**	**51**	**89**
Shrimp farming	8	90	34	**124**	47	13	**60**	**137**	**47**	**184**
Others	46	655	308	**963**	177	77	**254**	**832**	**385**	**1217**
Total of fisheries	**161**	**2392**	**1244**	**3636**	**915**	**536**	**1451**	**3307**	**1780**	**5087**
IX. Production of inputs at site										
Apiculture	41	706	323	**1029**	164	136	**300**	**870**	**459**	**1329**
Bio-agents production	1	8	3	**11**	2	5	**7**	**10**	**8**	**18**
Bio-fertilizer production	6	108	57	**165**	46	27	**73**	**154**	**84**	**238**
Bio-pesticides production	3	52	17	**69**	22	8	**30**	**74**	**25**	**99**

Thematic area	No. of courses	Participants								
		Others			SC/ST			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Mushroom production	29	401	327	**728**	190	166	**356**	**591**	**493**	**1084**
Organic manures production	26	453	306	**759**	129	82	**211**	**582**	**388**	**970**
Planting material production	2	40	12	**52**	14	6	**20**	**54**	**18**	**72**
Production of bee-colonies and wax sheets	6	86	61	**147**	42	10	**52**	**128**	**71**	**199**
Production of fish feed	2	47	26	**73**	11	6	**17**	**58**	**32**	**90**
Production of livestock feed and fodder	11	162	79	**241**	43	14	**57**	**205**	**93**	**298**
Seed production	10	185	60	**245**	56	11	**67**	**241**	**71**	**312**
Vermicompost production	52	878	529	**1407**	242	187	**429**	**1120**	**716**	**1836**
Others	17	378	241	**619**	82	57	**139**	**460**	**298**	**758**
Total of inputs	**206**	**3504**	**2041**	**5545**	**1043**	**715**	**1758**	**4547**	**2756**	**7303**
X. Capacity building and group dynamics										
Entrepreneurial development of farmers/ youths	87	1271	708	**1979**	572	226	**798**	**1843**	**934**	**2777**
Formation and management of SHGs	19	237	146	**383**	95	39	**134**	**332**	**185**	**517**
Group dynamics	15	480	190	**670**	115	52	**167**	**595**	**242**	**837**
Leadership development	8	138	47	**185**	35	23	**58**	**173**	**70**	**243**
Mobilization of social capital	9	35	82	**117**	44	19	**63**	**79**	**101**	**180**
Others	133	3721	1566	**5287**	2129	1434	**3563**	**5850**	**3000**	**8850**
Total of capacity building	**271**	**5882**	**2739**	**8621**	**2990**	**1793**	**4783**	**8872**	**4532**	**13404**
XI Agro-forestry										
Integrated Farming Systems	58	395	288	**683**	163	142	**305**	**558**	**430**	**988**
Nursery management	2	25	53	**78**	8	7	**15**	**33**	**60**	**93**
Production technologies	21	428	259	**687**	127	141	**268**	**555**	**400**	**955**
Others in agroforestry	6	185	38	**223**	21	16	**37**	**206**	**54**	**260**
Others	56	580	194	**774**	205	331	**536**	**785**	**525**	**1310**
Total of agroforestry	**143**	**1613**	**832**	**2445**	**524**	**637**	**1161**	**2137**	**1469**	**3606**
Grand total	**5566**	**88373**	**52843**	**141216**	**32809**	**25715**	**58524**	**121182**	**78558**	**199740**

Method Demonstration on banana pseudo stem injection – KVK, Thoothukudi, Tamil Nadu

Tamil Nadu

KVKs of Tamil Nadu organized 3078 training courses on crop production, horticulture, soil health and fertility management, livestock production and management, women empowerment, agricultural engineering, plant protection, fisheries, production of inputs, agroforestry, group dynamics, *etc*., in which 59550 men and 41835 women farmers participated (Table 3.3.4). In crop production 755 training courses were conducted by the KVKs of Tamil Nadu in which maximum number were on integrated crop management (277). Under horticulture 429 training courses were conducted and maximum trainings were on vegetable crops (226) followed by fruits (90) and plantation crops (35). A total of 321 training courses were organized under plant protection in the areas of integrated pest and disease management, biocontrol of pests and diseases, production of bio-control agents and bio-pesticides and others.

Table 3.3.4. Details of Training Programmes for Farmers in Tamil Nadu

Thematic area	No. of courses	Participants								
		Others			SC/ST			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I. Crop production										
Crop diversification	25	547	172	**719**	106	66	**172**	**653**	**238**	**891**
Cropping systems	39	880	364	**1244**	97	139	**236**	**977**	**503**	**1480**
Integrated crop management	277	5038	2676	**7714**	1065	642	**1707**	**6103**	**3318**	**9421**
Integrated farming	39	624	382	**1006**	115	68	**183**	**739**	**450**	**1189**
Integrated nutrient management	66	1180	666	**1846**	180	237	**417**	**1360**	**903**	**2263**
Micro irrigation/irrigation	14	185	161	**346**	53	34	**87**	**238**	**195**	**433**
Nursery management	10	171	119	**290**	53	31	**84**	**224**	**150**	**374**
Production of organic inputs	47	680	381	**1061**	136	132	**268**	**816**	**513**	**1329**
Resource conservation technologies	19	294	233	**527**	44	47	**91**	**338**	**280**	**618**
Seed production	64	1159	625	**1784**	252	157	**409**	**1411**	**782**	**2193**
Soil & water conservation	19	371	247	**618**	42	53	**95**	**413**	**300**	**713**
Weed management	15	232	84	**316**	62	39	**101**	**294**	**123**	**417**
Others	121	2438	1259	**3697**	548	505	**1053**	**2986**	**1764**	**4750**
Total of crop production	**755**	**13799**	**7369**	**21168**	**2753**	**2150**	**4903**	**16552**	**9519**	**26071**
II. Horticulture										
a) Vegetable crops										
Exotic vegetables	6	104	48	**152**	27	4	**31**	**131**	**52**	**183**
Export potential vegetables	3	84	20	**104**	4	2	**6**	**88**	**22**	**110**
Grading and standardization	5	140	52	**192**	23	10	**33**	**163**	**62**	**225**
Nursery raising	28	398	205	**603**	148	96	**244**	**546**	**301**	**847**
Off-season vegetables	12	155	149	**304**	45	34	**79**	**200**	**183**	**383**
Production of low value and high value crops	32	417	181	**598**	143	61	**204**	**560**	**242**	**802**
Protective cultivation	19	277	219	**496**	75	52	**127**	**352**	**271**	**623**
Others in vegetable crop	16	302	203	**505**	83	53	**136**	**385**	**256**	**641**
Others	105	1621	873	**2494**	426	336	**762**	**2047**	**1209**	**3256**
Total of vegetable crops	**226**	**3498**	**1950**	**5448**	**974**	**648**	**1622**	**4472**	**2598**	**7070**
b) Fruits										
Cultivation of fruit	40	454	368	**822**	266	141	**407**	**720**	**509**	**1229**
Export potential fruits	4	51	70	**121**	56	34	**90**	**107**	**104**	**211**
Layout and management of orchards	1	14	11	**25**	3	2	**5**	**17**	**13**	**30**

Thematic area	No. of courses	Participants								
		Others			SC/ST			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Management of young plants/orchards	6	90	58	**148**	38	31	**69**	**128**	**89**	**217**
Micro irrigation systems of orchards	8	149	77	**226**	21	15	**36**	**170**	**92**	**262**
Plant propagation techniques	5	67	40	**107**	64	37	**101**	**131**	**77**	**208**
Rejuvenation of old orchards	5	59	48	**107**	2	0	**2**	**61**	**48**	**109**
Training and pruning	12	159	83	**242**	106	49	**155**	**265**	**132**	**397**
Others	9	61	83	**144**	15	28	**43**	**76**	**111**	**187**
Total of fruits	**90**	**1104**	**838**	**1942**	**571**	**337**	**908**	**1675**	**1175**	**2850**
c) Ornamental plants										
Export potential of ornamental plants	8	95	34	**129**	48	41	**89**	**143**	**75**	**218**
Management of potted plants	1	21	29	**50**	5	4	**9**	**26**	**33**	**59**
Nursery management	8	80	139	**219**	43	35	**78**	**123**	**174**	**297**
Propagation techniques of ornamental plants	3	11	26	**37**	3	11	**14**	**14**	**37**	**51**
Others in ornamental plants	2	23	7	**30**	2	0	**2**	**25**	**7**	**32**
Others	3	55	45	**100**	20	15	**35**	**75**	**60**	**135**
Total in ornamental plants	**25**	**285**	**280**	**565**	**121**	**106**	**227**	**406**	**386**	**792**
d) Plantation crops										
Processing and value addition	8	126	89	**215**	30	22	**52**	**156**	**111**	**267**
Production and management technology	27	334	196	**530**	123	100	**223**	**457**	**296**	**753**
Total of plantation crops	**35**	**460**	**285**	**745**	**153**	**122**	**275**	**613**	**407**	**1020**
e) Tuber crops										
Processing and value addition	7	72	22	**94**	40	61	**101**	**112**	**83**	**195**
Production and management technology	14	220	139	**359**	82	55	**137**	**302**	**194**	**496**
Total of tuber crops	**21**	**292**	**161**	**453**	**122**	**116**	**238**	**414**	**277**	**691**
f) Spices										
Processing and value addition	3	10	24	**34**	79	25	**104**	**89**	**49**	**138**
Production and management technology	7	68	76	**144**	82	39	**121**	**150**	**115**	**265**
Others	5	50	1	**51**	146	103	**249**	**196**	**104**	**300**
Total of spices	**15**	**128**	**101**	**229**	**307**	**167**	**474**	**435**	**268**	**703**
g) Medicinal and Aromatic Plants										
Nursery management	4	57	37	**94**	15	16	**31**	**72**	**53**	**125**
Post-harvest technology and value addition	1	12	6	**18**	3	1	**4**	**15**	**7**	**22**
Production and management technology	9	174	48	**222**	18	23	**41**	**192**	**71**	**263**
Others	3	10	0	**10**	37	15	**52**	**47**	**15**	**62**
Total of medicinal plants	**17**	**253**	**91**	**344**	**73**	**55**	**128**	**326**	**146**	**472**
Grand total of horticulture	**429**	**6020**	**3706**	**9726**	**2321**	**1551**	**3872**	**8341**	**5257**	**13598**
III. Soil health and fertility management										
Balance use of fertilizers	29	824	485	**1309**	152	113	**265**	**976**	**598**	**1574**
Integrated nutrient management	77	1182	891	**2073**	354	239	**593**	**1536**	**1130**	**2666**
Integrated water management	7	145	50	**195**	10	5	**15**	**155**	**55**	**210**
Management of problematic soils	10	167	92	**259**	50	38	**88**	**217**	**130**	**347**
Micronutrient deficiency in crops	12	163	159	**322**	84	16	**100**	**247**	**175**	**422**
Nutrient use efficiency	5	108	43	**151**	15	16	**31**	**123**	**59**	**182**
Production and use of organic inputs	17	394	252	**646**	92	36	**128**	**486**	**288**	**774**

Thematic area	No. of courses	Participants								
		Others			SC/ST			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Soil and water testing	27	763	380	**1143**	177	116	**293**	**940**	**496**	**1436**
Soil fertility management	33	579	383	**962**	121	58	**179**	**700**	**441**	**1141**
Others	40	816	614	**1430**	128	126	**254**	**944**	**740**	**1684**
Total of soil health	**257**	**5141**	**3349**	**8490**	**1183**	**763**	**1946**	**6324**	**4112**	**10436**
IV. Livestock production and management										
Animal nutrition management	32	480	314	**794**	154	95	**249**	**634**	**409**	**1043**
Dairy management	58	588	603	**1191**	206	310	**516**	**794**	**913**	**1707**
Disease management	43	563	334	**897**	144	147	**291**	**707**	**481**	**1188**
Feed & fodder technology	49	907	534	**1441**	236	176	**412**	**1143**	**710**	**1853**
Piggery management	8	122	23	**145**	46	17	**63**	**168**	**40**	**208**
Poultry management	76	884	665	**1549**	394	464	**858**	**1278**	**1129**	**2407**
Production of quality animal products	16	242	191	**433**	44	25	**69**	**286**	**216**	**502**
Rabbit management	4	26	19	**45**	16	24	**40**	**42**	**43**	**85**
Goat farming	57	727	482	**1209**	222	394	**616**	**949**	**876**	**1825**
Others	39	725	479	**1204**	131	175	**306**	**856**	**654**	**1510**
Total of livestock	**382**	**5264**	**3644**	**8908**	**1593**	**1827**	**3420**	**6857**	**5471**	**12328**
V. Home Science/Women empowerment										
Design and development of low/minimum cost diet	6	59	89	**148**	10	18	**28**	**69**	**107**	**176**
Designing and development for high nutrient efficiency diet	5	67	101	**168**	20	48	**68**	**87**	**149**	**236**
Gender mainstreaming through SHGs	8	0	111	**111**	0	24	**24**	**0**	**135**	**135**
Household food security by kitchen gardening and nutrition gardening	71	402	1201	**1603**	165	386	**551**	**567**	**1587**	**2154**
Location specific drudgery reduction technologies	10	73	151	**224**	22	46	**68**	**95**	**197**	**292**
Minimization of nutrient loss in processing	9	48	135	**183**	9	15	**24**	**57**	**150**	**207**
Processing and cooking	28	145	440	**585**	34	193	**227**	**179**	**633**	**812**
Rural Crafts	1	0	0	**0**	3	12	**15**	**3**	**12**	**15**
Storage loss minimization techniques	4	40	55	**95**	3	10	**13**	**43**	**65**	**108**
Value addition	164	1183	2091	**3274**	535	923	**1458**	**1718**	**3014**	**4732**
Women and childcare	15	86	596	**682**	3	91	**94**	**89**	**687**	**776**
Women empowerment	21	178	428	**606**	76	172	**248**	**254**	**600**	**854**
Others	26	179	169	**348**	157	109	**266**	**336**	**278**	**614**
Total of Home Science	**368**	**2460**	**5567**	**8027**	**1037**	**2047**	**3084**	**3497**	**7614**	**11111**
VI. Agricultural engineering										
Farm machinery and its maintenance	23	469	128	**597**	37	47	**84**	**506**	**175**	**681**
Installation and maintenance of micro irrigation systems	12	129	77	**206**	37	11	**48**	**166**	**88**	**254**
Post-harvest technology	11	178	39	**217**	56	31	**87**	**234**	**70**	**304**
Repair and maintenance of farm machinery and implements	4	67	23	**90**	0	0	**0**	**67**	**23**	**90**
Small scale processing and value addition	3	3	22	**25**	6	9	**15**	**9**	**31**	**40**
Solar powered farm devices	10	324	95	**419**	6	0	**6**	**330**	**95**	**425**
Total of agricultural engineering	**63**	**1170**	**384**	**1554**	**142**	**98**	**240**	**1312**	**482**	**1794**
VII. Plant protection										

Thematic area	No. of courses	Participants								
		Others			SC/ST			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Biocontrol of pests and diseases	30	526	280	**806**	173	164	**337**	**699**	**444**	**1143**
Integrated disease management	80	1095	505	**1600**	423	297	**720**	**1518**	**802**	**2320**
Integrated Pest Management	134	2369	971	**3340**	490	335	**825**	**2859**	**1306**	**4165**
Production of biocontrol agents and bio pesticides	11	201	58	**259**	63	21	**84**	**264**	**79**	**343**
Seed treatment techniques	66	1037	528	**1565**	193	273	**466**	**1230**	**801**	**2031**
Total of plant protection	**321**	**5228**	**2342**	**7570**	**1342**	**1090**	**2432**	**6570**	**3432**	**10002**
VIII. Fisheries										
Breeding and culture of ornamental fishes	6	125	60	**185**	20	6	**26**	**145**	**66**	**211**
Carp fry and fingerling rearing	5	64	30	**94**	30	31	**61**	**94**	**61**	**155**
Composite fish culture	27	325	278	**603**	148	145	**293**	**473**	**423**	**896**
Fish processing and value addition	5	133	113	**246**	44	21	**65**	**177**	**134**	**311**
Hatchery management and culture of freshwater prawn	1	0	13	**13**	2	5	**7**	**2**	**18**	**20**
Integrated fish farming	23	418	203	**621**	170	101	**271**	**588**	**304**	**892**
Portable plastic carp hatchery	4	33	42	**75**	5	9	**14**	**38**	**51**	**89**
Shrimp farming	3	41	28	**69**	13	3	**16**	**54**	**31**	**85**
Others	32	470	217	**687**	111	42	**153**	**581**	**259**	**840**
Total of fisheries	**106**	**1609**	**984**	**2593**	**543**	**363**	**906**	**2152**	**1347**	**3499**
IX. Production of inputs at site										
Apiculture	36	570	284	**854**	135	113	**248**	**705**	**397**	**1102**
Bio-agents production	1	8	3	**11**	2	5	**7**	**10**	**8**	**18**
Bio-fertilizer production	5	83	39	**122**	33	16	**49**	**116**	**55**	**171**
Bio-pesticides production	1	24	5	**29**	4	2	**6**	**28**	**7**	**35**
Mushroom production	26	373	292	**665**	129	134	**263**	**502**	**426**	**928**
Organic manures production	21	369	269	**638**	79	52	**131**	**448**	**321**	**769**
Planting material production	2	40	12	**52**	14	6	**20**	**54**	**18**	**72**
Production of bee-colonies and wax sheets	6	86	61	**147**	42	10	**52**	**128**	**71**	**199**
Production of fish feed	1	32	22	**54**	0	0	**0**	**32**	**22**	**54**
Production of livestock feed and fodder	11	162	79	**241**	43	14	**57**	**205**	**93**	**298**
Seed production	10	185	60	**245**	56	11	**67**	**241**	**71**	**312**
Small tools and implements	0	0	0	**0**	0	0	**0**	**0**	**0**	**0**
Vermicompost production	39	676	461	**1137**	121	125	**246**	**797**	**586**	**1383**
Others	16	378	217	**595**	82	37	**119**	**460**	**254**	**714**
Total of inputs	**175**	**2986**	**1804**	**4790**	**740**	**525**	**1265**	**3726**	**2329**	**6055**
X. Capacity building and group dynamics										
Entrepreneurial development of farmers/ youths	66	825	526	**1351**	486	188	**674**	**1311**	**714**	**2025**
Formation and management of SHGs	6	52	58	**110**	18	3	**21**	**70**	**61**	**131**
Group dynamics	7	343	122	**465**	40	11	**51**	**383**	**133**	**516**
Leadership development	4	53	33	**86**	19	13	**32**	**72**	**46**	**118**
Mobilization of social capital	2	16	35	**51**	1	1	**2**	**17**	**36**	**53**
Others	26	615	160	**775**	223	80	**303**	**838**	**240**	**1078**
Total of capacity building	**111**	**1904**	**934**	**2838**	**787**	**296**	**1083**	**2691**	**1230**	**3921**
XI Agro-forestry										

Thematic area	No. of courses	Participants								
		Others			SC/ST			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Integrated Farming Systems	54	383	270	**653**	108	92	**200**	**491**	**362**	**853**
Nursery management	2	25	53	**78**	8	7	**15**	**33**	**60**	**93**
Production technologies	16	318	179	**497**	85	93	**178**	**403**	**272**	**675**
Others in agroforestry	5	145	18	**163**	9	10	**19**	**154**	**28**	**182**
Others	34	321	125	**446**	126	195	**321**	**447**	**320**	**767**
Total of agroforestry	**111**	**1192**	**645**	**1837**	**336**	**397**	**733**	**1528**	**1042**	**2570**
Grand total	**3078**	**46773**	**30728**	**77501**	**12777**	**11107**	**23884**	**59550**	**41835**	**101385**

Off campus training in ICM in coconut – KVK, Kanyakumari

Off campus Training on IPDM in banana – KVK, Tiruvannamalai

Training on fodder production – KVK, Tiruvannamalai

Andhra Pradesh

In Andhra Pradesh 1403 trainings were organized for 30329 men and 19913 women farmers (Table 3.3.5). Under crop production, maximum number of trainings was organized on integrated crop management practices (104) followed by Integrated nutrient management (36). In horticulture 164 training courses were conducted including vegetables (77), fruits (51), Plantation crops (10) *etc*. Under soil health management 76 trainings were conducted for 2843 farmers and farm women, in which the highest were on INM (18). In livestock production and management, 164 trainings were conducted in which 32 were on poultry management 26 on animal nutrition management, 24 on feed and fodder management, 23 on dairy management 22 on disease management *etc*., to a total number of 5392 farmers and farm women. Under home science 259 training programmes were conducted for 8336 farmers and rural women. On plant protection 259 trainings were conducted for 10374 farmers.

Table 3.3.5. Details of Training Programmes for Farmers in Andhra Pradesh

Thematic area	No. of courses	Participants								
		Others			SC/ST			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I. Crop production										
Crop diversification	10	146	59	**205**	27	14	**41**	**173**	**73**	**246**
Cropping systems	7	124	46	**170**	38	13	**51**	**162**	**59**	**221**
Integrated crop management	104	2054	775	**2829**	843	528	**1371**	**2897**	**1303**	**4200**
Integrated farming	8	125	132	**257**	66	34	**100**	**191**	**166**	**357**
Integrated nutrient management	36	853	264	**1117**	174	98	**272**	**1027**	**362**	**1389**
Micro irrigation/irrigation	6	110	30	**140**	16	17	**33**	**126**	**47**	**173**
Nursery management	7	110	53	**163**	26	34	**60**	**136**	**87**	**223**
Production of organic inputs	22	424	268	**692**	104	65	**169**	**528**	**333**	**861**
Resource conservation technologies	12	288	101	**389**	82	61	**143**	**370**	**162**	**532**
Seed production	11	237	78	**315**	39	24	**63**	**276**	**102**	**378**
Soil & water conservation	18	254	57	**311**	154	120	**274**	**408**	**177**	**585**
Weed management	21	534	105	**639**	111	40	**151**	**645**	**145**	**790**
Others	35	646	206	**852**	385	174	**559**	**1031**	**380**	**1411**
Total of crop production	**297**	**5905**	**2174**	**8079**	**2065**	**1222**	**3287**	**7970**	**3396**	**11366**
II. Horticulture										
a) Vegetable crops										
Exotic vegetables	2	62	9	**71**	10	1	**11**	**72**	**10**	**82**
Export potential vegetables	2	60	7	**67**	8	3	**11**	**68**	**10**	**78**
Grading and standardization	2	65	10	**75**	14	6	**20**	**79**	**16**	**95**
Nursery raising	17	363	128	**491**	67	49	**116**	**430**	**177**	**607**
Off-season vegetables	4	113	24	**137**	18	8	**26**	**131**	**32**	**163**
Production of low value and high value crops	11	198	85	**283**	10	8	**18**	**208**	**93**	**301**
Protective cultivation	6	93	52	**145**	7	5	**12**	**100**	**57**	**157**
Others in vegetable crop	8	123	21	**144**	90	43	**133**	**213**	**64**	**277**
Others	25	370	125	**495**	181	63	**244**	**551**	**188**	**739**
Total of vegetable crops	**77**	**1447**	**461**	**1908**	**405**	**186**	**591**	**1852**	**647**	**2499**
b) Fruits										
Cultivation of fruit	15	274	77	**351**	70	54	**124**	**344**	**131**	**475**
Layout and management of orchards	4	70	33	**103**	5	0	**5**	**75**	**33**	**108**
Management of young plants/orchards	4	35	14	**49**	7	4	**11**	**42**	**18**	**60**
Micro irrigation systems of orchards	5	82	39	**121**	103	115	**218**	**185**	**154**	**339**
Plant propagation techniques	4	84	49	**133**	38	12	**50**	**122**	**61**	**183**
Rejuvenation of old orchards	5	72	28	**100**	33	16	**49**	**105**	**44**	**149**
Training and pruning	2	56	12	**68**	14	7	**21**	**70**	**19**	**89**
Others	12	300	38	**338**	69	35	**104**	**369**	**73**	**442**
Total of fruits	**51**	**973**	**290**	**1263**	**339**	**243**	**582**	**1312**	**533**	**1845**
c) Ornamental plants										
Export potential of ornamental plants	1	44	12	**56**	14	2	**16**	**58**	**14**	**72**
Nursery management	1	50	15	**65**	35	15	**50**	**85**	**30**	**115**
Propagation techniques of ornamental plants	1	0	0	**0**	14	6	**20**	**14**	**6**	**20**

Thematic area	No. of courses	Participants								
		Others			SC/ST			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Others	8	128	36	**164**	19	7	**26**	**147**	**43**	**190**
Total in ornamental plants	**11**	**222**	**63**	**285**	**82**	**30**	**112**	**304**	**93**	**397**
d) Plantation crops										
Production and management technology	4	0	0	**0**	68	65	**133**	**68**	**65**	**133**
Others	6	122	47	**169**	20	10	**30**	**142**	**57**	**199**
Total of plantation crops	**10**	**122**	**47**	**169**	**88**	**75**	**163**	**210**	**122**	**332**
e) Tuber crops										
Production and management technology	1	13	6	**19**	6	4	**10**	**19**	**10**	**29**
Total of tuber crops	**1**	**13**	**6**	**19**	**6**	**4**	**10**	**19**	**10**	**29**
f) Spices										
Processing and value addition	3	45	16	**61**	23	9	**32**	**68**	**25**	**93**
Production and management technology	5	92	9	**101**	26	13	**39**	**118**	**22**	**140**
Others	4	49	7	**56**	31	24	**55**	**80**	**31**	**111**
Total of spices	**12**	**186**	**32**	**218**	**80**	**46**	**126**	**266**	**78**	**344**
g) Medicinal and Aromatic Plants										
Nursery management	1	35	15	**50**	37	20	**57**	**72**	**35**	**107**
Production and management technology	1	92	10	**102**	34	12	**46**	**126**	**22**	**148**
Total of medicinal plants	**2**	**127**	**25**	**152**	**71**	**32**	**103**	**198**	**57**	**255**
Grand total of horticulture	**164**	**3090**	**924**	**4014**	**1071**	**616**	**1687**	**4161**	**1540**	**5701**
III. Soil health and fertility management										
Balance use of fertilizers	9	142	56	**198**	50	39	**89**	**192**	**95**	**287**
Integrated nutrient management	18	373	105	**478**	178	63	**241**	**551**	**168**	**719**
Integrated water management	3	26	9	**35**	68	35	**103**	**94**	**44**	**138**
Management of problematic soils	2	35	5	**40**	10	0	**10**	**45**	**5**	**50**
Micronutrient deficiency in crops	5	100	40	**140**	32	12	**44**	**132**	**52**	**184**
Nutrient use efficiency	1	21	0	**21**	4	0	**4**	**25**	**0**	**25**
Production and use of organic inputs	9	151	57	**208**	74	33	**107**	**225**	**90**	**315**
Soil and water testing	15	310	126	**436**	77	46	**123**	**387**	**172**	**559**
Soil fertility management	9	154	39	**193**	88	29	**117**	**242**	**68**	**310**
Others	5	66	60	**126**	77	53	**130**	**143**	**113**	**256**
Total of soil health	**76**	**1378**	**497**	**1875**	**658**	**310**	**968**	**2036**	**807**	**2843**
IV. Livestock production and management										
Animal nutrition management	26	381	246	**627**	115	87	**202**	**496**	**333**	**829**
Dairy management	23	364	181	**545**	110	88	**198**	**474**	**269**	**743**
Disease management	22	264	224	**488**	160	71	**231**	**424**	**295**	**719**
Feed & fodder technology	24	423	153	**576**	169	85	**254**	**592**	**238**	**830**
Piggery management	5	59	43	**102**	57	30	**87**	**116**	**73**	**189**
Poultry management	32	336	194	**530**	248	150	**398**	**584**	**344**	**928**
Production of quality animal products	5	86	65	**151**	58	31	**89**	**144**	**96**	**240**
Rabbit management	3	28	32	**60**	43	23	**66**	**71**	**55**	**126**
Goat farming	14	141	75	**216**	189	85	**274**	**330**	**160**	**490**
Others	10	189	28	**217**	69	12	**81**	**258**	**40**	**298**
Total of livestock	**164**	**2271**	**1241**	**3512**	**1218**	**662**	**1880**	**3489**	**1903**	**5392**

Thematic area	No. of courses	Participants								
		Others			SC/ST			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
V. Home Science/Women empowerment										
Design and development of low/minimum cost diet	10	7	155	**162**	3	117	**120**	**10**	**272**	**282**
Designing and development for high nutrient efficiency diet	7	41	84	**125**	7	56	**63**	**48**	**140**	**188**
Gender mainstreaming through SHGs	10	2	161	**163**	0	31	**31**	**2**	**192**	**194**
Household food security by kitchen gardening and nutrition gardening	55	305	1172	**1477**	62	333	**395**	**367**	**1505**	**1872**
Location specific drudgery reduction technologies	17	38	406	**444**	8	66	**74**	**46**	**472**	**518**
Minimization of nutrient loss in processing	7	11	169	**180**	0	22	**22**	**11**	**191**	**202**
Processing and cooking	18	32	451	**483**	0	36	**36**	**32**	**487**	**519**
Storage loss minimization techniques	7	12	138	**150**	0	1	**1**	**12**	**139**	**151**
Value addition	77	137	1497	**1634**	79	641	**720**	**216**	**2138**	**2354**
Women and childcare	34	53	1265	**1318**	23	144	**167**	**76**	**1409**	**1485**
Women empowerment	12	20	352	**372**	0	51	**51**	**20**	**403**	**423**
Others	5	6	127	**133**	0	15	**15**	**6**	**142**	**148**
Total of Home Science	**259**	**664**	**5977**	**6641**	**182**	**1513**	**1695**	**846**	**7490**	**8336**
VI. Agricultural engineering										
Farm machinery and its maintenance	6	97	7	**104**	70	10	**80**	**167**	**17**	**184**
Installation and maintenance of micro irrigation systems	2	40	0	**40**	20	0	**20**	**60**	**0**	**60**
Post-harvest technology	3	33	11	**44**	25	21	**46**	**58**	**32**	**90**
Production of small tools and implements	3	29	11	**40**	28	22	**50**	**57**	**33**	**90**
Repair and maintenance of farm machinery and implements	2	39	0	**39**	21	0	**21**	**60**	**0**	**60**
Small scale processing and value addition	2	8	18	**26**	11	23	**34**	**19**	**41**	**60**
Solar powered farm devices	16	293	563	**856**	124	164	**288**	**417**	**727**	**1144**
Total of agricultural engineering	**34**	**539**	**610**	**1149**	**299**	**240**	**539**	**838**	**850**	**1688**
VII. Plant protection										
Biocontrol of pests and diseases	22	457	98	**555**	114	55	**169**	**571**	**153**	**724**
Integrated disease management	55	944	355	**1299**	318	147	**465**	**1262**	**502**	**1764**
Integrated Pest Management	143	3002	765	**3767**	1321	442	**1763**	**4323**	**1207**	**5530**
Production of biocontrol agents and bio pesticides	15	334	166	**500**	209	101	**310**	**543**	**267**	**810**
Seed treatment techniques	24	994	161	**1155**	319	72	**391**	**1313**	**233**	**1546**
Total of plant protection	**259**	**5731**	**1545**	**7276**	**2281**	**817**	**3098**	**8012**	**2362**	**10374**
VIII. Fisheries										
Carp fry and fingerling rearing	2	30	0	**30**	38	3	**41**	**68**	**3**	**71**
Composite fish culture	9	77	0	**77**	103	22	**125**	**180**	**22**	**202**
Fish processing and value addition	4	11	47	**58**	0	38	**38**	**11**	**85**	**96**
Hatchery management and culture of freshwater prawn	1	0	0	**0**	25	5	**30**	**25**	**5**	**30**
Integrated fish farming	4	37	28	**65**	16	5	**21**	**53**	**33**	**86**
Shrimp farming	5	49	6	**55**	34	10	**44**	**83**	**16**	**99**
Others	10	117	62	**179**	45	25	**70**	**162**	**87**	**249**
Total of fisheries	**35**	**321**	**143**	**464**	**261**	**108**	**369**	**582**	**251**	**833**

Thematic area	No. of courses	Participants								
		Others			SC/ST			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
IX. Production of inputs at site										
Apiculture	3	120	34	**154**	13	10	**23**	**133**	**44**	**177**
Bio-fertilizer production	1	25	18	**43**	13	11	**24**	**38**	**29**	**67**
Mushroom production	3	28	35	**63**	61	32	**93**	**89**	**67**	**156**
Organic manures production	2	34	23	**57**	16	19	**35**	**50**	**42**	**92**
Vermicompost production	6	98	42	**140**	40	26	**66**	**138**	**68**	**206**
Others	1	0	24	**24**	0	20	**20**	**0**	**44**	**44**
Total of inputs	**16**	**305**	**176**	**481**	**143**	**118**	**261**	**448**	**294**	**742**
X. Capacity building and group dynamics										
Entrepreneurial development of farmers/ youths	13	231	110	**341**	12	2	**14**	**243**	**112**	**355**
Formation and management of SHGs	10	115	43	**158**	65	11	**76**	**180**	**54**	**234**
Group dynamics	5	59	45	**104**	43	31	**74**	**102**	**76**	**178**
Leadership development	3	49	7	**56**	8	8	**16**	**57**	**15**	**72**
Mobilization of social capital	5	19	47	**66**	7	3	**10**	**26**	**50**	**76**
Others	32	552	184	**736**	230	128	**358**	**782**	**312**	**1094**
Total of capacity building	**68**	**1025**	**436**	**1461**	**365**	**183**	**548**	**1390**	**619**	**2009**
XI Agro-forestry										
Integrated Farming Systems	4	12	18	**30**	55	50	**105**	**67**	**68**	**135**
Production technologies	5	110	80	**190**	42	48	**90**	**152**	**128**	**280**
Others	22	259	69	**328**	79	136	**215**	**338**	**205**	**543**
Total of agroforestry	**31**	**381**	**167**	**548**	**176**	**234**	**410**	**557**	**401**	**958**
Grand total	**1403**	**21610**	**13890**	**35500**	**8719**	**6023**	**14742**	**30329**	**19913**	**50242**

Training on organic farming – KVK, West Godavari (Undi)

Telangana

In Telangana, 1021 training courses were organized for 45788 farmers (Table 3.3.6). Training on crop production aspects was conducted for 10037 farmers in which the maximum number of trainings were on integrated crop management (62). On horticultural crops, 170 trainings were conducted for 7740 farmers and farm women. A total of 4975 farmers were trained on various aspects of home science and women empowerment through 112 training programmes. Under plant protection, the maximum number of trainings were on integrated pest management (99) followed by integrated disease management (32) to 3740 and 1138 farmers, respectively.

Table 3.3.6. Details of Training Programmes for Farmers in Telangana

Thematic area	No. of courses	Participants								
		Others			SC/ST			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I. Crop production										
Crop diversification	26	639	148	**787**	253	188	**441**	**892**	**336**	**1228**
Cropping systems	12	511	89	**600**	192	48	**240**	**703**	**137**	**840**
Integrated crop management	62	963	182	**1145**	966	467	**1433**	**1929**	**649**	**2578**
Integrated farming	8	66	26	**92**	31	16	**47**	**97**	**42**	**139**
Integrated nutrient management	20	405	96	**501**	234	47	**281**	**639**	**143**	**782**
Micro irrigation/irrigation	8	72	32	**104**	19	11	**30**	**91**	**43**	**134**
Nursery management	1	32	0	**32**	0	0	**0**	**32**	**0**	**32**
Production of organic inputs	15	113	31	**144**	137	433	**570**	**250**	**464**	**714**
Resource conservation technologies	7	356	83	**439**	157	23	**180**	**513**	**106**	**619**
Seed production	1	10	12	**22**	24	32	**56**	**34**	**44**	**78**
Soil & water conservation	31	496	154	**650**	381	157	**538**	**877**	**311**	**1188**
Weed management	6	126	47	**173**	65	14	**79**	**191**	**61**	**252**
Others	37	436	184	**620**	602	231	**833**	**1038**	**415**	**1453**
Total of crop production	**234**	**4225**	**1084**	**5309**	**3061**	**1667**	**4728**	**7286**	**2751**	**10037**
II. Horticulture										
a) Vegetable crops										
Exotic vegetables	1	42	3	**45**	0	0	**0**	**42**	**3**	**45**
Export potential vegetables	1	39	0	**39**	0	0	**0**	**39**	**0**	**39**
Nursery raising	24	464	133	**597**	194	68	**262**	**658**	**201**	**859**
Off-season vegetables	8	180	67	**247**	95	28	**123**	**275**	**95**	**370**
Production of low value and high value crops	5	74	28	**102**	78	20	**98**	**152**	**48**	**200**
Protective cultivation	9	92	49	**141**	98	34	**132**	**190**	**83**	**273**
Others in vegetable crop	4	33	17	**50**	25	12	**37**	**58**	**29**	**87**
Others	30	651	161	**812**	377	123	**500**	**1028**	**284**	**1312**
Total of vegetable crops	**82**	**1575**	**458**	**2033**	**867**	**285**	**1152**	**2442**	**743**	**3185**
b) Fruits										
Cultivation of fruit	9	178	55	**233**	73	31	**104**	**251**	**86**	**337**
Layout and management of orchards	1	34	14	**48**	14	10	**24**	**48**	**24**	**72**
Management of young plants/orchards	7	362	59	**421**	110	32	**142**	**472**	**91**	**563**

Thematic area	No. of courses	Participants								
		Others			SC/ST			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Micro irrigation systems of orchards	16	251	90	**341**	80	48	**128**	**331**	**138**	**469**
Plant propagation techniques	5	149	16	**165**	83	21	**104**	**232**	**37**	**269**
Rejuvenation of old orchards	2	17	12	**29**	34	2	**36**	**51**	**14**	**65**
Training and pruning	3	44	16	**60**	45	18	**63**	**89**	**34**	**123**
Others	8	175	44	**219**	166	30	**196**	**341**	**74**	**415**
Total of fruits	**51**	**1210**	**306**	**1516**	**605**	**192**	**797**	**1815**	**498**	**2313**
c) Ornamental plants										
Export potential of ornamental plants	1	15	6	**21**	7	2	**9**	**22**	**8**	**30**
Nursery management	1	26	7	**33**	0	0	**0**	**26**	**7**	**33**
Propagation techniques of ornamental plants	1	32	15	**47**	18	6	**24**	**50**	**21**	**71**
Others	1	0	0	**0**	28	5	**33**	**28**	**5**	**33**
Total in ornamental plants	**4**	**73**	**28**	**101**	**53**	**13**	**66**	**126**	**41**	**167**
d) Plantation crops										
Production and management technology	20	888	165	**1053**	330	91	**421**	**1218**	**256**	**1474**
Total of plantation crops	**20**	**888**	**165**	**1053**	**330**	**91**	**421**	**1218**	**256**	**1474**
e) Tuber crops										
Production and management technology	4	62	83	**145**	30	24	**54**	**92**	**107**	**199**
Total of tuber crops	**4**	**62**	**83**	**145**	**30**	**24**	**54**	**92**	**107**	**199**
f) Spices										
Processing and value addition	1	32	0	**32**	11	0	**11**	**43**	**0**	**43**
Production and management technology	5	106	38	**144**	69	21	**90**	**175**	**59**	**234**
Others	1	45	12	**57**	8	0	**8**	**53**	**12**	**65**
Total of spices	**7**	**183**	**50**	**233**	**88**	**21**	**109**	**271**	**71**	**342**
g) Medicinal and Aromatic Plants										
Nursery management	1	8	2	**10**	10	10	**20**	**18**	**12**	**30**
Production and management technology	1	8	2	**10**	10	10	**20**	**18**	**12**	**30**
Total of medicinal plants	**2**	**16**	**4**	**20**	**20**	**20**	**40**	**36**	**24**	**60**
Grand total of horticulture	**170**	**4007**	**1094**	**5101**	**1993**	**646**	**2639**	**6000**	**1740**	**7740**
III. Soil health and fertility management										
Balance use of fertilizers	13	126	49	**175**	90	83	**173**	**216**	**132**	**348**
Integrated nutrient management	17	392	93	**485**	141	58	**199**	**533**	**151**	**684**
Management of problematic soils	1	15	1	**16**	12	8	**20**	**27**	**9**	**36**
Micronutrient deficiency in crops	4	45	5	**50**	50	33	**83**	**95**	**38**	**133**
Nutrient use efficiency	3	81	11	**92**	32	19	**51**	**113**	**30**	**143**
Production and use of organic inputs	8	103	74	**177**	92	117	**209**	**195**	**191**	**386**
Soil and water testing	23	308	125	**433**	168	412	**580**	**476**	**537**	**1013**
Soil fertility management	11	249	59	**308**	144	96	**240**	**393**	**155**	**548**
Total of soil health	**80**	**1319**	**417**	**1736**	**729**	**826**	**1555**	**2048**	**1243**	**3291**
IV. Livestock production and management										
Animal nutrition management	15	157	78	**235**	77	60	**137**	**234**	**138**	**372**
Dairy management	11	259	122	**381**	82	102	**184**	**341**	**224**	**565**

Thematic area	No. of courses	Participants								
		Others			SC/ST			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Disease management	11	110	51	**161**	89	73	**162**	**199**	**124**	**323**
Feed & fodder technology	15	204	78	**282**	80	39	**119**	**284**	**117**	**401**
Poultry management	26	154	119	**273**	163	517	**680**	**317**	**636**	**953**
Production of quality animal products	5	111	62	**173**	29	24	**53**	**140**	**86**	**226**
Goat farming	1	27	3	**30**	10	10	**20**	**37**	**13**	**50**
Others	3	33	10	**43**	27	20	**47**	**60**	**30**	**90**
Total of livestock	**87**	**1055**	**523**	**1578**	**557**	**845**	**1402**	**1612**	**1368**	**2980**
V. Home Science/Women empowerment										
Design and development of low/minimum cost diet	7	47	194	**241**	12	98	**110**	**59**	**292**	**351**
Designing and development for high nutrient efficiency diet	4	35	42	**77**	21	70	**91**	**56**	**112**	**168**
Gender mainstreaming through SHGs	2	0	36	**36**	0	21	**21**	**0**	**57**	**57**
Household food security by kitchen gardening and nutrition gardening	27	128	557	**685**	80	574	**654**	**208**	**1131**	**1339**
Location specific drudgery reduction technologies	4	59	33	**92**	58	29	**87**	**117**	**62**	**179**
Minimization of nutrient loss in processing	2	6	14	**20**	2	26	**28**	**8**	**40**	**48**
Processing and cooking	4	26	83	**109**	31	45	**76**	**57**	**128**	**185**
Storage loss minimization techniques	2	50	14	**64**	11	0	**11**	**61**	**14**	**75**
Value addition	29	24	415	**439**	57	545	**602**	**81**	**960**	**1041**
Women and childcare	11	25	316	**341**	13	286	**299**	**38**	**602**	**640**
Women empowerment	11	34	310	**344**	8	188	**196**	**42**	**498**	**540**
Others	9	106	179	**285**	10	57	**67**	**116**	**236**	**352**
Total of Home Science	**112**	**540**	**2193**	**2733**	**303**	**1939**	**2242**	**843**	**4132**	**4975**
VI. Agricultural engineering										
Farm machinery and its maintenance	30	404	69	**473**	230	94	**324**	**634**	**163**	**797**
Installation and maintenance of micro irrigation systems	4	64	6	**70**	207	32	**239**	**271**	**38**	**309**
Repair and maintenance of farm machinery and implements	2	62	19	**81**	46	9	**55**	**108**	**28**	**136**
Small scale processing and value addition	1	50	8	**58**	20	8	**28**	**70**	**16**	**86**
Use of plastics in farming practices	3	48	23	**71**	62	24	**86**	**110**	**47**	**157**
Total of agricultural engineering	**40**	**628**	**125**	**753**	**565**	**167**	**732**	**1193**	**292**	**1485**
VII. Plant protection										
Biocontrol of pests and diseases	20	292	73	**365**	125	143	**268**	**417**	**216**	**633**
Integrated disease management	32	592	140	**732**	287	119	**406**	**879**	**259**	**1138**
Integrated Pest Management	99	1878	404	**2282**	1070	388	**1458**	**2948**	**792**	**3740**
Production of biocontrol agents and bio pesticides	9	120	60	**180**	86	109	**195**	**206**	**169**	**375**
Seed treatment techniques	11	316	42	**358**	208	41	**249**	**524**	**83**	**607**
Total of plant protection	**171**	**3198**	**719**	**3917**	**1776**	**800**	**2576**	**4974**	**1519**	**6493**
VIII. Fisheries										
Carp fry and fingerling rearing	6	149	27	**176**	31	10	**41**	**180**	**37**	**217**
Composite fish culture	4	78	10	**88**	33	20	**53**	**111**	**30**	**141**

Thematic area	No. of courses	Participants								
		Others			SC/ST			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Edible oyster farming	0	0	0	**0**	0	0	**0**	**0**	**0**	**0**
Fish processing and value addition	4	90	51	**141**	17	23	**40**	**107**	**74**	**181**
Pen culture of fish and prawn	1	57	0	**57**	5	0	**5**	**62**	**0**	**62**
Others	4	68	29	**97**	21	10	**31**	**89**	**39**	**128**
Total of fisheries	**19**	**442**	**117**	**559**	**107**	**63**	**170**	**549**	**180**	**729**
IX. Production of inputs at site										
Apiculture	2	16	5	**21**	16	13	**29**	**32**	**18**	**50**
Bio-pesticides production	2	28	12	**40**	18	6	**24**	**46**	**18**	**64**
Organic manures production	3	50	14	**64**	34	11	**45**	**84**	**25**	**109**
Production of fish feed	1	15	4	**19**	11	6	**17**	**26**	**10**	**36**
Vermicompost production	7	104	26	**130**	81	36	**117**	**185**	**62**	**247**
Total of inputs	**15**	**213**	**61**	**274**	**160**	**72**	**232**	**373**	**133**	**506**
X. Capacity building and group dynamics										
Entrepreneurial development of farmers/ youths	8	215	72	**287**	74	36	**110**	**289**	**108**	**397**
Formation and management of SHGs	3	70	45	**115**	12	25	**37**	**82**	**70**	**152**
Group dynamics	3	78	23	**101**	32	10	**42**	**110**	**33**	**143**
Leadership development	1	36	7	**43**	8	2	**10**	**44**	**9**	**53**
Mobilization of social capital	2	0	0	**0**	36	15	**51**	**36**	**15**	**51**
Others	75	2554	1222	**3776**	1676	1226	**2902**	**4230**	**2448**	**6678**
Total of capacity building	**92**	**2953**	**1369**	**4322**	**1838**	**1314**	**3152**	**4791**	**2683**	**7474**
XI Agro-forestry										
Others in agroforestry	1	40	20	**60**	12	6	**18**	**52**	**26**	**78**
Total of agroforestry	**1**	**40**	**20**	**60**	**12**	**6**	**18**	**52**	**26**	**78**
Grand total	**1021**	**18620**	**7722**	**26342**	**11101**	**8345**	**19446**	**29721**	**16067**	**45788**

Off campus training on pest and disease management of Soybean - KVK, Adilabad

Puducherry

In Puducherry, a total of 64 trainings were organized for 1582 men and 743 women farmers (Table 3.3.7). The highest number of training courses (15) was conducted on crop production in which 761 farmers participated and benefited.

Table 3.3.7. Details of Training Programmes for Farmers in Puducherry

Thematic area	No. of courses	Participants								
		Others			SC/ST			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I. Crop production										
Integrated crop management	7	225	39	**264**	34	10	**44**	**259**	**49**	**308**
Integrated nutrient management	2	45	3	**48**	6	1	**7**	**51**	**4**	**55**
Micro irrigation/irrigation	3	221	28	**249**	39	28	**67**	**260**	**56**	**316**
Nursery management	1	13	3	**16**	7	0	**7**	**20**	**3**	**23**
Weed management	1	23	7	**30**	0	0	**0**	**23**	**7**	**30**
Others	1	13	8	**21**	6	2	**8**	**19**	**10**	**29**
Total of crop production	**15**	**540**	**88**	**628**	**92**	**41**	**133**	**632**	**129**	**761**
II. Horticulture										
a) Vegetable crops										
Production of low value and high value crops	2	53	1	**54**	1	0	**1**	**54**	**1**	**55**
Others	5	106	20	**126**	6	4	**10**	**112**	**24**	**136**
Total of vegetable crops	**7**	**159**	**21**	**180**	**7**	**4**	**11**	**166**	**25**	**191**
b) Fruits										
Production and management technology	1	47	2	**49**	7	0	**7**	**54**	**2**	**56**
Others	1	14	2	**16**	2	0	**2**	**16**	**2**	**18**
Total of plantation crops	**2**	**61**	**4**	**65**	**9**	**0**	**9**	**70**	**4**	**74**
Grand total of horticulture	**9**	**220**	**25**	**245**	**16**	**4**	**20**	**236**	**29**	**265**
III. Soil health and fertility management										
Balance use of fertilizers	2	129	19	**148**	19	2	**21**	**148**	**21**	**169**
Integrated nutrient management	1	42	1	**43**	1	0	**1**	**43**	**1**	**44**
Soil and water testing	1	11	2	**13**	1	1	**2**	**12**	**3**	**15**
Soil fertility management	1	50	38	**88**	15	8	**23**	**65**	**46**	**111**
Others	1	36	5	**41**	2	0	**2**	**38**	**5**	**43**
Total of soil health	**6**	**268**	**65**	**333**	**38**	**11**	**49**	**306**	**76**	**382**
IV. Livestock production and management										
Dairy management	3	19	45	**64**	5	4	**9**	**24**	**49**	**73**
Disease management	2	36	13	**49**	7	4	**11**	**43**	**17**	**60**
Feed & fodder technology	1	11	24	**35**	0	0	**0**	**11**	**24**	**35**
Poultry management	4	2	35	**37**	7	50	**57**	**9**	**85**	**94**
Goat farming	4	34	57	**91**	10	34	**44**	**44**	**91**	**135**
Total of livestock	**14**	**102**	**174**	**276**	**29**	**92**	**121**	**131**	**266**	**397**
V. Home Science/Women empowerment										
Household food security by kitchen gardening and nutrition gardening	1	1	16	**17**	0	8	**8**	**1**	**24**	**25**
Location specific drudgery reduction technologies	1	0	25	**25**	0	4	**4**	**0**	**29**	**29**
Processing and cooking	1	0	16	**16**	2	3	**5**	**2**	**19**	**21**

Thematic area	No. of courses	Participants								
		Others			SC/ST			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Storage loss minimization techniques	1	0	27	**27**	0	1	**1**	**0**	**28**	**28**
Value addition	1	2	21	**23**	0	2	**2**	**2**	**23**	**25**
Women empowerment	2	0	0	**0**	0	60	**60**	**0**	**60**	**60**
Total of Home Science	**7**	**3**	**105**	**108**	**2**	**78**	**80**	**5**	**183**	**188**
VI. Agricultural engineering										
Farm machinery and its maintenance	1	22	3	**25**	0	0	**0**	**22**	**3**	**25**
Total of agricultural engineering	**1**	**22**	**3**	**25**	**0**	**0**	**0**	**22**	**3**	**25**
VII. Plant protection										
Integrated Pest Management	11	195	43	**238**	31	12	**43**	**226**	**55**	**281**
Total of plant protection	**11**	**195**	**43**	**238**	**31**	**12**	**43**	**226**	**55**	**281**
VIII. Fisheries										
Integrated fish farming	1	20	0	**20**	4	2	**6**	**24**	**2**	**26**
Total of fisheries	**1**	**20**	**0**	**20**	**4**	**2**	**6**	**24**	**2**	**26**
Grand total	**64**	**1370**	**503**	**1873**	**212**	**240**	**452**	**1582**	**743**	**2325**

3.3.2. Rural Youth

Various training programmes on entrepreneurship development, employment creation and income generation in agriculture and allied areas among rural youth were conducted by the KVKs in Zone-X. A total of 972 courses were organized for 32783 rural youth in Tamil Nadu, Andhra Pradesh, Telangana and Puducherry. The training areas included value addition in agriculture, dairy, fisheries, animal husbandry products, mushroom production, production of organic inputs, integrated farming, bee keeping, nursery management, dairying, poultry production, *etc*., (Table 3.3.8). KVKs in Tamil Nadu organized 566 trainings for 16595 rural youth (Table 3.3.9). KVKs in Andhra Pradesh conducted 259 training programmes for 11218 rural youth (Table 3.3.10). KVKs in Telangana conducted 143 trainings for 4882 participants (Table 3.3.11) and KVKs of Puducherry conducted 4 courses for 88 participants (Table 3.3.12).

Table 3.3.8. Details of training programmes for rural youth in Zone-X

Area of training	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Beekeeping	70	1105	656	1761	375	305	680	1480	961	2441
Commercial fruit production	8	81	90	171	36	30	66	117	120	237
Composite fish culture	7	102	28	130	38	18	56	140	46	186
Dairying	21	448	236	684	121	127	248	569	363	932
Fish harvest and processing technology	1	0	0	0	25	0	25	25	0	25
Freshwater prawn culture	2	18	3	21	13	3	16	31	6	37
Fry and fingerling rearing	3	8	0	8	62	23	85	70	23	93
Integrated farming	50	925	492	1417	396	296	692	1321	788	2109
Mushroom Production	64	740	646	1386	222	225	447	962	871	1833
Nursery Management of Horticulture crops	50	633	507	1140	218	153	371	851	660	1511
Ornamental fisheries	1	0	0	0	6	28	34	6	28	34
Piggery	2	39	8	47	19	4	23	58	12	70
Planting material production	24	251	219	470	81	62	143	332	281	613

Area of training	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Post Harvest Technology	22	265	200	465	140	74	214	405	274	679
Poultry production	34	385	254	639	158	372	530	543	626	1169
Production of organic inputs	56	775	492	1267	331	203	534	1106	695	1801
Production of quality animal products	2	0	2	2	25	19	44	25	21	46
Protected cultivation of vegetable crops	22	430	226	656	160	80	240	590	306	896
Quail farming	3	52	33	85	2	0	2	54	33	87
Rabbit farming	2	23	9	32	9	5	14	32	14	46
Repair and maintenance of farm machinery and implements	13	195	75	270	75	45	120	270	120	390
Rural Crafts	3	154	98	252	43	35	78	197	133	330
Seed production	43	557	238	795	118	92	210	675	330	1005
Sericulture	5	88	15	103	33	12	45	121	27	148
Sheep and goat rearing	34	423	1830	2253	127	102	229	550	1932	2482
Shrimp farming	1	12	7	19	9	2	11	21	9	30
Small scale processing	9	84	119	203	41	57	98	125	176	301
Tailoring and Stitching	12	12	306	318	10	206	216	22	512	534
Training and pruning of orchards	9	219	122	341	85	37	122	304	159	463
Value addition	146	541	2551	3092	193	933	1126	734	3484	4218
Vermi-culture / Vermicomposting	63	1241	655	1896	408	245	653	1649	900	2549
SRI poduction technologies	4	60	23	83	24	13	37	84	36	120
Nutrient management in pandal cultivated crops	7	133	49	182	12	10	22	145	59	204
Biofloc fish farming	6	77	27	104	39	26	65	116	53	169
Others	173	1748	1197	2945	1116	934	2050	2864	2131	4995
Total	**972**	**11824**	**11413**	**23237**	**4770**	**4776**	**9546**	**16594**	**16189**	**32783**

Table 3.3.9. Details of training programmes for rural youth in Tamil Nadu

Area of training	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Beekeeping	47	742	494	1236	204	248	452	**946**	**742**	**1688**
Commercial fruit production	4	23	76	99	11	22	33	**34**	**98**	**132**
Composite fish culture	6	77	28	105	38	18	56	**115**	**46**	**161**
Dairying	8	109	100	209	24	66	90	**133**	**166**	**299**
Freshwater prawn culture	2	18	3	21	13	3	16	**31**	**6**	**37**
Integrated farming	32	558	287	845	223	148	371	**781**	**435**	**1216**
Mushroom Production	36	390	369	759	88	65	153	**478**	**434**	**912**
Nursery Management of Horticulture crops	24	237	248	485	123	71	194	**360**	**319**	**679**
Piggery	2	39	8	47	19	4	23	**58**	**12**	**70**
Planting material production	17	188	153	341	60	35	95	**248**	**188**	**436**
Post Harvest Technology	13	139	117	256	38	45	83	**177**	**162**	**339**
Poultry production	20	292	196	488	101	94	195	**393**	**290**	**683**
Production of organic inputs	28	331	238	569	73	63	136	**404**	**301**	**705**
Production of quality animal products	2	0	2	2	25	19	44	**25**	**21**	**46**
Protected cultivation of vegetable crops	13	280	175	455	68	58	126	**348**	**233**	**581**

Area of training	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Quail farming	3	52	33	85	2	0	2	**54**	**33**	**87**
Rabbit farming	2	23	9	32	9	5	14	**32**	**14**	**46**
Repair and maintenance of farm machinery and implements	6	99	42	141	15	21	36	**114**	**63**	**177**
Seed production	32	434	187	621	90	67	157	**524**	**254**	**778**
Sericulture	2	26	0	26	6	0	6	**32**	**0**	**32**
Sheep and goat rearing	14	160	96	256	54	65	119	**214**	**161**	**375**
Shrimp farming	1	12	7	19	9	2	11	**21**	**9**	**30**
Small scale processing	8	76	119	195	34	57	91	**110**	**176**	**286**
Tailoring and Stitching	9	12	139	151	10	103	113	**22**	**242**	**264**
Training and pruning of orchards	1	6	0	6	6	0	6	**12**	**0**	**12**
Value addition	74	446	1017	1463	166	408	574	**612**	**1425**	**2037**
Vermi-culture / Vermicomposting	28	461	248	709	81	59	140	**542**	**307**	**849**
SRI poduction technologies	3	47	20	67	17	13	30	**64**	**33**	**97**
Nutrient management in pandal cultivated crops	5	117	41	158	10	6	16	**127**	**47**	**174**
Biofloc fish farming	6	77	27	104	39	26	65	**116**	**53**	**169**
Others	118	1060	823	1883	612	703	1315	**1672**	**1526**	**3198**
Total	**566**	**6531**	**5302**	**11833**	**2268**	**2494**	**4762**	**8799**	**7796**	**16595**

Training on NADEP method of composting – KVK, Villuppuram

Method Demonstration of Banana Flour Preparation – KVK , Theni, Tamil Nadu

Table 3.3.10. Details of training programmes for rural youth in Andhra Pradesh

Area of training	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Beekeeping	17	306	146	452	94	35	129	**400**	**181**	**581**
Commercial fruit production	1	33	4	37	15	2	17	**48**	**6**	**54**
Composite fish culture	1	25	0	25	0	0	0	**25**	**0**	**25**
Dairying	4	153	83	236	46	19	65	**199**	**102**	**301**
Fish harvest and processing technology	1	0	0	0	25	0	25	**25**	**0**	**25**
Integrated farming	11	180	144	324	119	116	235	**299**	**260**	**559**
Mushroom Production	17	296	217	513	97	123	220	**393**	**340**	**733**
Nursery Management of Horticulture crops	17	297	171	468	54	35	89	**351**	**206**	**557**
Ornamental fisheries	1	0	0	0	6	28	34	**6**	**28**	**34**
Planting material production	7	63	66	129	21	27	48	**84**	**93**	**177**
Post Harvest Technology	6	60	69	129	45	29	74	**105**	**98**	**203**
Poultry production	4	48	24	72	11	18	29	**59**	**42**	**101**
Production of organic inputs	18	302	189	491	129	63	192	**431**	**252**	**683**
Protected cultivation of vegetable crops	5	73	28	101	24	10	34	**97**	**38**	**135**
Repair and maintenance of farm machinery and implements	6	80	28	108	48	18	66	**128**	**46**	**174**
Rural Crafts	3	154	98	252	43	35	78	**197**	**133**	**330**
Seed production	10	100	37	137	15	16	31	**115**	**53**	**168**
Sheep and goat rearing	15	217	1715	1932	47	29	76	**264**	**1744**	**2008**
Small scale processing	1	8	0	8	7	0	7	**15**	**0**	**15**
Tailoring and Stitching	2	0	167	167	0	73	73	**0**	**240**	**240**
Training and pruning of orchards	7	176	122	298	73	37	110	**249**	**159**	**408**
Value addition	57	81	1345	1426	19	334	353	**100**	**1679**	**1779**
Vermi-culture / Vermicomposting	22	609	332	941	155	132	287	**764**	**464**	**1228**
Nutrient management in pandal cultivated crops	2	16	8	24	2	4	6	**18**	**12**	**30**
Others	24	236	125	361	190	119	309	**426**	**244**	**670**
Total	**259**	**3513**	**5118**	**8631**	**1285**	**1302**	**2587**	**4798**	**6420**	**11218**

Table 3.3.11. Details of training programmes for rural youth in Telangana

Area of training	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Beekeeping	6	57	16	73	77	22	99	**134**	**38**	**172**
Commercial fruit production	3	25	10	35	10	6	16	**35**	**16**	**51**
Dairying	9	186	53	239	51	42	93	**237**	**95**	**332**
Fry and fingerling rearing	3	8	0	8	62	23	85	**70**	**23**	**93**
Integrated farming	7	187	61	248	54	32	86	**241**	**93**	**334**
Mushroom Production	11	54	60	114	37	37	74	**91**	**97**	**188**
Nursery Management of Horticulture crops	9	99	88	187	41	47	88	**140**	**135**	**275**
Post Harvest Technology	3	66	14	80	57	0	57	**123**	**14**	**137**
Poultry production	10	45	34	79	46	260	306	**91**	**294**	**385**
Production of organic inputs	10	142	65	207	129	77	206	**271**	**142**	**413**
Protected cultivation of vegetable crops	4	77	23	100	68	12	80	**145**	**35**	**180**
Repair and maintenance of farm machinery and implements	1	16	5	21	12	6	18	**28**	**11**	**39**
Seed production	1	23	14	37	13	9	22	**36**	**23**	**59**

Area of training	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Sericulture	3	62	15	77	27	12	39	**89**	**27**	**116**
Sheep and goat rearing	5	46	19	65	26	8	34	**72**	**27**	**99**
Tailoring and Stitching	1	0	0	0	0	30	30	**0**	**30**	**30**
Training and pruning of orchards	1	37	0	37	6	0	6	**43**	**0**	**43**
Value addition	15	14	189	203	8	191	199	**22**	**380**	**402**
Vermi-culture / Vermicomposting	13	171	75	246	172	54	226	**343**	**129**	**472**
Others	28	417	241	658	302	102	404	**719**	**343**	**1062**
Total	**143**	**1732**	**982**	**2714**	**1198**	**970**	**2168**	**2930**	**1952**	**4882**

Table 3.3.12. Details of training programmes for rural youth in Puducherry

Area of training	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
SRI production technologies	1	13	3	16	7	0	7	**20**	**3**	**23**
Others	3	35	8	43	12	10	22	**47**	**18**	**65**
Total	**4**	**48**	**11**	**59**	**19**	**10**	**29**	**67**	**21**	**88**

3.3.3. Extension Functionaries

Capacity Development Programmes for district level extension functionaries were organized by KVKs in Tamil Nadu, Andhra Pradesh, Telangana, and Puducherry states. A total of 802 trainings were conducted in which 32242 Extension Functionaries participated and benefited (Table 3.3.13). Among various areas of training, the highest number of 124 training courses were conducted on integrated pest management followed by productivity enhancement in crops (95). KVKs of Tamil Nadu conducted 348 trainings for 13261 participants (Table 3.3.14). KVKs of Andhra Pradesh conducted 279 trainings for 12254 participants (Table 3.3.15). KVKs of Telangana organized 168 programmes for 6599 participants (Table 3.3.16) and KVKs of Puducherry conducted 7 programmes for 128 participants (Table 3.3.17).

Table 3.3.13. Details of trainings for Extension Functionaries in Zone-X

Area of training	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Capacity building for ICT application	32	786	323	1109	154	99	253	940	422	1362
Care & maintenance of farm machinery & implements	17	511	120	631	114	54	168	625	174	799
Formation and Management of SHGs	3	21	28	49	5	8	13	26	36	62
Gender mainstreaming through SHGs	4	0	66	66	12	13	25	12	79	91
Group Dynamics and farmers organization	10	485	121	606	56	38	94	541	159	700
Household and Food Security	21	117	303	420	35	201	236	152	504	656
Information networking among farmers	3	64	17	81	20	10	30	84	27	111
Integrated Nutrient management	76	1516	779	2295	312	181	493	1828	960	2788
Integrated Pest Management	124	3004	1130	4134	659	311	970	3663	1441	5104
Livestock feed and fodder production	30	650	186	836	91	46	137	741	232	973
Low cost and nutrient efficient diet designing	14	146	336	482	20	132	152	166	468	634
Management in farm animals	9	163	207	370	21	164	185	184	371	555
Production and use of organic inputs	42	602	293	895	191	107	298	793	400	1193

Area of training	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Productivity enhancement in field crops	95	2128	986	3114	503	194	697	2631	1180	3811
Protected cultivation technology	30	732	292	1024	93	53	146	825	345	1170
Rejuvenation of old orchards	7	92	53	145	13	12	25	105	65	170
Women and Child care	48	376	1756	2132	46	353	399	422	2109	2531
Integrated farming system	33	615	331	946	173	79	252	788	410	1198
Preparation of bankable projects	0	0	0	0	0	0	0	0	0	0
Cage fish culture	4	62	20	82	13	4	17	75	24	99
Others	200	4110	2253	6363	985	887	1872	5095	3140	8235
Total	**802**	**16180**	**9600**	**25780**	**3516**	**2946**	**6462**	**19696**	**12546**	**32242**

Table 3.3.14. Details of trainings for Extension Functionaries in Tamil Nadu

Area of training	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Capacity building for ICT application	13	205	134	339	33	31	64	238	165	403
Care & maintenance of farm machinery & implements	5	81	51	132	4	2	6	85	53	138
Formation and Management of SHGs	3	21	28	49	5	8	13	26	36	62
Gender mainstreaming through SHGs	2	0	34	34	0	5	5	0	39	39
Group Dynamics and farmers organization	4	335	55	390	21	18	39	356	73	429
Household and Food Security	9	59	72	131	22	70	92	81	142	223
Integrated Nutrient management	20	323	268	591	44	37	81	367	305	672
Integrated Pest Management	41	773	292	1065	172	75	247	945	367	1312
Livestock feed and fodder production	11	181	90	271	44	25	69	225	115	340
Low cost and nutrient efficient diet designing	5	0	166	166	0	72	72	0	238	238
Management in farm animals	6	52	185	237	10	164	174	62	349	411
Production and use of organic inputs	20	311	168	479	48	21	69	359	189	548
Productivity enhancement in field crops	47	1117	660	1777	137	69	206	1254	729	1983
Protected cultivation technology	23	406	171	577	57	32	89	463	203	666
Rejuvenation of old orchards	6	63	45	108	9	12	21	72	57	129
Women and Childcare	14	49	543	592	14	103	117	63	646	709
Integrated farming system	19	371	196	567	80	40	120	451	236	687
Cage fish culture	4	62	20	82	13	4	17	75	24	99
Others	96	2074	1416	3490	344	339	683	2418	1755	4173
Total	**348**	**6483**	**4594**	**11077**	**1057**	**1127**	**2184**	**7540**	**5721**	**13261**

I adopted drip and mulching system for vegetable crops. KVK, Palem organized demonstrations and provided consultations. I grow vegetables year-round and I am earning Rs.4.5 lakhs per ha. I have received Eruvaka best Vegetable Farmer Award during National farmers day celebrations from PJTSAU.

Mr. Ramachandraiah
Chennapuraopally (v), Nagarkurnool district, TS

Table 3.3.15. Details of trainings for Extension Functionaries in Andhra Pradesh

Area of training	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Capacity building for ICT application	16	526	179	705	103	60	163	629	239	868
Care & maintenance of farm machinery & implements	4	159	45	204	44	42	86	203	87	290
Gender mainstreaming through SHGs	1	0	22	22	0	8	8	0	30	30
Group Dynamics and farmers organization	3	61	13	74	18	9	27	79	22	101
Household and Food Security	5	45	112	157	11	16	27	56	128	184
Information networking among farmers	2	42	10	52	11	6	17	53	16	69
Integrated Nutrient management	38	834	400	1234	194	104	298	1028	504	1532
Integrated Pest Management	44	1371	451	1822	215	120	335	1586	571	2157
Livestock feed and fodder production	14	435	73	508	37	15	52	472	88	560
Low cost and nutrient efficient diet designing	6	125	123	248	0	30	30	125	153	278
Management in farm animals	3	111	22	133	11	0	11	122	22	144
Production and use of organic inputs	18	204	106	310	111	77	188	315	183	498
Productivity enhancement in field crops	35	921	259	1180	317	84	401	1238	343	1581
Protected cultivation technology	5	84	43	127	22	15	37	106	58	164
Rejuvenation of old orchards	1	29	8	37	4	0	4	33	8	41
Women and Childcare	29	320	1072	1392	3	186	189	323	1258	1581
Integrated farming system	6	138	97	235	34	15	49	172	112	284
Others	49	859	434	1293	317	282	599	1176	716	1892
Total	**279**	**6264**	**3469**	**9733**	**1452**	**1069**	**2521**	**7716**	**4538**	**12254**

Table 3.3.16. Details of trainings for Extension Functionaries in Telangana

Area of training	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Capacity building for ICT application	3	55	10	65	18	8	26	73	18	91
Care & maintenance of farm machinery & implements	8	271	24	295	66	10	76	337	34	371
Gender mainstreaming through SHGs	1	0	10	10	12	0	12	12	10	22
Group Dynamics and farmers organization	3	89	53	142	17	11	28	106	64	170
Household and Food Security	6	13	100	113	2	109	111	15	209	224
Information networking among farmers	1	22	7	29	9	4	13	31	11	42
Integrated Nutrient management	18	359	111	470	74	40	114	433	151	584
Integrated Pest Management	39	860	387	1247	272	116	388	1132	503	1635
Livestock feed and fodder production	5	34	23	57	10	6	16	44	29	73
Low cost and nutrient efficient diet designing	3	21	47	68	20	30	50	41	77	118
Production and use of organic inputs	4	87	19	106	32	9	41	119	28	147
Productivity enhancement in field crops	13	90	67	157	49	41	90	139	108	247
Protected cultivation technology	2	242	78	320	14	6	20	256	84	340
Rejuvenation of old orchards	0	0	0	0	0	0	0	0	0	0
Women and Childcare	5	7	141	148	29	64	93	36	205	241
Integrated farming system	8	106	38	144	59	24	83	165	62	227
Others	49	1108	389	1497	306	264	570	1414	653	2067
Total	**168**	**3364**	**1504**	**4868**	**989**	**742**	**1731**	**4353**	**2246**	**6599**

Table 3.3.17. Details of trainings for Extension Functionaries in Puducherry

Area of training	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Household and Food Security	1	0	19	19	0	6	6	0	25	25
Others	6	69	14	83	18	2	20	87	16	103
Total	**7**	**69**	**33**	**102**	**18**	**8**	**26**	**87**	**41**	**128**

3.3.4 Sponsored Trainings

KVKs conducted sponsored training programmes from ATMA, MANAGE and other agencies in addition to regular training programmes. A total of 763 sponsored training programmes were conducted for 30546 youth in Zone-X (Table 3.3.18). A maximum number of courses were conducted on crop production and management (275) followed by production and value addition (139), Livestock and fisheries (127), Agricultural extension (119), post harvest technology (67), Home science (26), *etc.* (Table 3.3.19). KVKs in Tamil Nadu organized 612 training programmes for 24086 participants (Table 3.3.20). KVKs in Andhra Pradesh conducted 80 trainings for 2699 participants (Table 3.3.21). KVKs of Telangana organized 65 trainings for 3661 participants (Table 3.3.22) and KVKs of Puducherry conducted 6 trainings for 100 participants (Table 3.3.23).

Table 3.3.18. Details of state wise sponsored training programmes in Zone-X

State	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Tamil Nadu	612	10952	7217	18169	2929	2988	5917	13881	10205	24086
Andhra Pradesh	80	909	611	1520	722	457	1179	1631	1068	2699
Telangana	65	1280	583	1863	960	838	1798	2240	1421	3661
Puducherry	6	27	62	89	3	8	11	30	70	100
Total	**763**	**13168**	**8473**	**21641**	**4614**	**4291**	**8905**	**17782**	**12764**	**30546**

Table 3.3.19. Details of sponsored training programmes in Zone-X

Area of training	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop production and management										
Commercial production of vegetables	23	486	316	802	147	189	336	633	505	1138
Increasing production and productivity of crops	85	2041	794	2835	769	280	1049	2810	1074	3884
Others	167	3228	1970	5198	911	697	1608	4139	2667	6806
Total crop production trainings	**275**	**5755**	**3080**	**8835**	**1827**	**1166**	**2993**	**7582**	**4246**	**11828**
Production and value addition										
Fruit plants	9	225	134	359	111	82	193	336	216	552
Methods of protective cultivation	14	202	95	297	30	55	85	232	150	382
Production of Inputs at site	24	119	82	201	48	49	97	167	131	298
Soil health and fertility management	20	625	280	905	143	54	197	768	334	1102
Spices crops	9	45	19	64	95	94	189	140	113	253
Others	63	769	748	1517	297	286	583	1066	1034	2100
Total Production and value Addition Trainings	**139**	**1985**	**1358**	**3343**	**724**	**620**	**1344**	**2709**	**1978**	**4687**

Area of training	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Post-harvest technology and value addition										
Processing and value addition	48	689	438	1127	204	182	386	893	620	1513
Others	19	348	344	692	115	129	244	463	473	936
Total PHT and VA	**67**	**1037**	**782**	**1819**	**319**	**311**	**630**	**1356**	**1093**	**2449**
Farm Machinery										
Farm machinery, tools and implements	9	223	90	313	24	14	38	247	104	351
Others	1	4	0	4	11	5	16	15	5	20
Total FM	**10**	**227**	**90**	**317**	**35**	**19**	**54**	**262**	**109**	**371**
Livestock and fisheries										
Animal Disease Management	5	94	34	128	17	40	57	111	74	185
Animal Nutrition Management	15	430	133	563	94	133	227	524	266	790
Fisheries Management	14	104	30	134	183	64	247	287	94	381
Fisheries Nutrition	6	72	37	109	20	13	33	92	50	142
Livestock production and management	29	374	275	649	148	170	318	522	445	967
Integrated farming	30	435	322	757	184	117	301	619	439	1058
Others	28	563	711	1274	182	543	725	745	1254	1999
Total LS and F	**127**	**2072**	**1542**	**3614**	**828**	**1080**	**1908**	**2900**	**2622**	**5522**
Home Science										
Economic empowerment of women	8	126	107	233	0	70	70	126	177	303
Household nutritional security	4	0	158	158	0	400	400	0	558	558
Others	14	74	193	267	10	39	49	84	232	316
Total HS	**26**	**200**	**458**	**658**	**10**	**509**	**519**	**210**	**967**	**1177**
Agricultural Extension										
Capacity Building and Group Dynamics	45	727	370	1097	320	186	506	1047	556	1603
Others	74	1165	793	1958	551	400	951	1716	1193	2909
Total AE	**119**	**1892**	**1163**	**3055**	**871**	**586**	**1457**	**2763**	**1749**	**4512**
Grand Total	**763**	**13168**	**8473**	**21641**	**4614**	**4291**	**8905**	**17782**	**12764**	**30546**

Friends of coconut tree, a sponsored training by coconut development board – KVK, Kanyakumari, Tamil Nadu

Table 3.3.20. Details of sponsored training programmes in Tamil Nadu

Area of training	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop production and management										
Commercial production of vegetables	20	456	312	768	89	97	186	545	409	954
Increasing production and productivity of crops	68	1687	731	2418	445	242	687	2132	973	3105
Others	149	2961	1852	4813	823	614	1437	3784	2466	6250
Total crop production trainings	**237**	**5104**	**2895**	**7999**	**1357**	**953**	**2310**	**6461**	**3848**	**10309**
Production and value addition										
Fruit plants	7	62	86	148	29	63	92	91	149	240
Methods of protective cultivation	7	193	89	282	29	51	80	222	140	362
Production of Inputs at site	16	107	78	185	5	38	43	112	116	228
Soil health and fertility management	14	337	184	521	28	16	44	365	200	565
Spices crops	8	45	19	64	55	94	149	100	113	213
Others	51	590	649	1239	130	218	348	720	867	1587
Total Production and value Addition Trainings	**103**	**1334**	**1105**	**2439**	**276**	**480**	**756**	**1610**	**1585**	**3195**
Post-harvest technology and value addition										
Processing and value addition	42	596	288	884	133	89	222	729	377	1106
Others	14	305	304	609	54	104	158	359	408	767
Total PHT and VA	**56**	**901**	**592**	**1493**	**187**	**193**	**380**	**1088**	**785**	**1873**
Farm Machinery										
Farm machinery, tools and implements	7	178	78	256	17	12	29	195	90	285
Others	1	4	0	4	11	5	16	15	5	20
Total FM	**8**	**182**	**78**	**260**	**28**	**17**	**45**	**210**	**95**	**305**
Livestock and fisheries										
Animal Disease Management	4	82	22	104	16	40	56	98	62	160
Animal Nutrition Management	8	261	100	361	63	66	129	324	166	490
Fisheries Management	10	104	30	134	50	37	87	154	67	221
Fisheries Nutrition	6	72	37	109	20	13	33	92	50	142
Livestock production and management	19	327	261	588	69	108	177	396	369	765
Integrated farming	28	423	314	737	98	117	215	521	431	952
Others	25	561	679	1240	177	502	679	738	1181	1919
Total LS and F	**100**	**1830**	**1443**	**3273**	**493**	**883**	**1376**	**2323**	**2326**	**4649**
Home Science										
Economic empowerment of women	3	126	41	167	0	1	1	126	42	168
Household nutritional security	2	0	36	36	0	25	25	0	61	61
Others	10	59	173	232	8	29	37	67	202	269
Total HS	**15**	**185**	**250**	**435**	**8**	**55**	**63**	**193**	**305**	**498**
Agricultural Extension										
Capacity Building and Group Dynamics	35	578	191	769	173	67	240	751	258	1009
Others	58	838	663	1501	407	340	747	1245	1003	2248
Total AE	**93**	**1416**	**854**	**2270**	**580**	**407**	**987**	**1996**	**1261**	**3257**
Grand Total	**612**	**10952**	**7217**	**18169**	**2929**	**2988**	**5917**	**13881**	**10205**	**24086**

Table 3.3.21. Details of sponsored training programmes in Andhra Pradesh

Area of training	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop production and management										
Commercial production of vegetables	1	0	0	0	22	20	42	22	20	42
Increasing production and productivity of crops	13	199	43	242	256	28	284	455	71	526
Others	9	129	37	166	22	20	42	151	57	208
Total crop production trainings	**23**	**328**	**80**	**408**	**300**	**68**	**368**	**628**	**148**	**776**
Production and value addition										
Fruit plants	1	0	0	0	40	12	52	40	12	52
Methods of protective cultivation	7	9	6	15	1	4	5	10	10	20
Production of Inputs at site	7	12	4	16	3	1	4	15	5	20
Soil health and fertility management	4	63	35	98	107	37	144	170	72	242
Others	7	146	79	225	103	50	153	249	129	378
Total Production and value Addition Trainings	**26**	**230**	**124**	**354**	**254**	**104**	**358**	**484**	**228**	**712**
Post-harvest technology and value addition										
Processing and value addition	2	20	60	80	0	8	8	20	68	88
Others	1	15	10	25	10	5	15	25	15	40
Total PHT and VA	**3**	**35**	**70**	**105**	**10**	**13**	**23**	**45**	**83**	**128**
Farm Machinery										
Farm machinery, tools and implements	1	13	0	13	2	0	2	15	0	15
Total FM	**1**	**13**	**0**	**13**	**2**	**0**	**2**	**15**	**0**	**15**
Livestock and fisheries										
Animal Nutrition Management	3	23	21	44	13	63	76	36	84	120
Livestock production and management	1	7	2	9	6	2	8	13	4	17
Integrated farming	1	12	8	20	0	0	0	12	8	20
Others	3	2	32	34	5	41	46	7	73	80
Total LS and F	**8**	**44**	**63**	**107**	**24**	**106**	**130**	**68**	**169**	**237**
Home Science										
Economic empowerment of women	3	0	25	25	0	67	67	0	92	92
Total HS	**3**	**0**	**25**	**25**	**0**	**67**	**67**	**0**	**92**	**92**
Agricultural Extension										
Capacity Building and Group Dynamics	7	105	175	280	75	80	155	180	255	435
Others	9	154	74	228	57	19	76	211	93	304
Total AE	**16**	**259**	**249**	**508**	**132**	**99**	**231**	**391**	**348**	**739**
Grand Total	**80**	**909**	**611**	**1520**	**722**	**457**	**1179**	**1631**	**1068**	**2699**

Table 3.3.22. Details of sponsored training programmes in Telangana

Area of training	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop production and management										
Commercial production of vegetables	2	30	4	34	36	72	108	66	76	142
Increasing production and productivity of crops	4	155	20	175	68	10	78	223	30	253
Others	9	138	81	219	66	63	129	204	144	348
Total crop production trainings	**15**	**323**	**105**	**428**	**170**	**145**	**315**	**493**	**250**	**743**
Production and value addition										

Area of training	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Fruit plants	1	163	48	211	42	7	49	205	55	260
Production of Inputs at site	1	0	0	0	40	10	50	40	10	50
Soil health and fertility management	2	225	61	286	8	1	9	233	62	295
Spices crops	1	0	0	0	40	0	40	40	0	40
Others	5	33	20	53	64	18	82	97	38	135
Total Production and value Addition Trainings	**10**	**421**	**129**	**550**	**194**	**36**	**230**	**615**	**165**	**780**
Post-harvest technology and value addition										
Processing and value addition	4	73	90	163	71	85	156	144	175	319
Others	4	28	30	58	51	20	71	79	50	129
Total PHT and VA	**8**	**101**	**120**	**221**	**122**	**105**	**227**	**223**	**225**	**448**
Farm Machinery										
Farm machinery, tools and implements	1	32	12	44	5	2	7	37	14	51
Total FM	**1**	**32**	**12**	**44**	**5**	**2**	**7**	**37**	**14**	**51**
Livestock and fisheries										
Animal Nutrition Management	4	146	12	158	18	4	22	164	16	180
Fisheries Management	4	0	0	0	133	27	160	133	27	160
Livestock production and management	9	40	12	52	73	60	133	113	72	185
Integrated farming	1	0	0	0	86	0	86	86	0	86
Total LS and F	**18**	**186**	**24**	**210**	**310**	**91**	**401**	**496**	**115**	**611**
Home Science										
Household nutritional security	2	0	122	122	0	375	375	0	497	497
Others	1	0	11	11	0	4	4	0	15	15
Total HS	**3**	**0**	**133**	**133**	**0**	**379**	**379**	**0**	**512**	**512**
Agricultural Extension										
Capacity Building and Group Dynamics	3	44	4	48	72	39	111	116	43	159
Others	7	173	56	229	87	41	128	260	97	357
Total AE	**10**	**217**	**60**	**277**	**159**	**80**	**239**	**376**	**140**	**516**
Grand Total	**65**	**1280**	**583**	**1863**	**960**	**838**	**1798**	**2240**	**1421**	**3661**

Comprehensive training by KVK Erode enhanced my skill and knowledge set to turn to an entrepreneur from farmer. I established AARA Traders Co., marketed value-added products and exported. Grateful to the KVK's constant support in my entrepreneurial journey

Ms. E.Kavitha
Anupperpalayam, Erode District, TN

Table 3.3.23. Details of sponsored training programmes in Puducherry

Area of training	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Livestock and fisheries										
Animal Disease Management	1	12	12	24	1	0	1	13	12	25
Total LS and F	**1**	**12**	**12**	**24**	**1**	**0**	**1**	**13**	**12**	**25**
Home Science										
Economic empowerment of women	2	0	41	41	0	2	2	0	43	43
Others	3	15	9	24	2	6	8	17	15	32
Total HS	**5**	**15**	**50**	**65**	**2**	**8**	**10**	**17**	**58**	**75**
Grand Total	**6**	**27**	**62**	**89**	**3**	**8**	**11**	**30**	**70**	**100**

3.3.5 Vocational Training

Krishi Vigyan Kendras in Tamil Nadu, Andhra Pradesh, Telangana, and Puducherry conducted vocational training courses for farmers, rural youth, school dropouts and women to create self-employment and income generation in the rural areas. A total of 252 vocational training courses were conducted in which 6655 farmers, women, rural youth, and extension functionaries participated (Table 3.3.24) in Zone X. Maximum number of courses were conducted on income generation activities (119) followed by crop production and management (49), Livestock and fisheries (41), post-harvest technologies value addition (39), *etc.* (Table 3.3.25). KVKs in Tamil Nadu conducted 133 courses for 3845 farmers and farm women (Table 3.3.26). KVKs in Andhra Pradesh organized 79 courses for 1570 participants (Table 3.3.27). In Telangana 34 courses were organized with the participation of 978 people (Table 3.3.28). In Puducherry 6 courses were organized for 262 participants (Table 3.3.29).

EDP training-Cut flower production and flower arrangement - KVK , Kanyakumari, Tamil Nadu

Exhibition of Banana fiber products- KVK, Thoothukudi, Tamil Nadu

Table 3.3.24. Details of state wise vocational training programmes in Zone-X

State	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Tamil Nadu	133	1398	1415	2813	418	614	1032	1816	2029	3845
Andhra Pradesh	79	374	438	812	420	338	758	794	776	1570
Telangana	34	325	103	428	326	224	550	651	327	978
Puducherry	6	68	146	214	11	37	48	79	183	262
Total	**252**	**2165**	**2102**	**4267**	**1175**	**1213**	**2388**	**3340**	**3315**	**6655**

Table 3.3.25. Details of vocational training programmes in Zone-X

Area of training	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop production and management										
Commercial floriculture	1	0	12	12	0	7	7	0	19	19
Commercial fruit production	1	25	20	45	5	10	15	30	30	60
Commercial vegetable production	3	48	31	79	20	6	26	68	37	105
Integrated crop management	8	100	35	135	8	4	12	108	39	147
Organic farming	8	178	50	228	48	13	61	226	63	289
Others	28	219	193	412	164	124	288	383	317	700
Total CPM	**49**	**570**	**341**	**911**	**245**	**164**	**409**	**815**	**505**	**1320**
Post-harvest technology and value addition										
Value addition	34	105	442	547	13	213	226	118	655	773
Others	5	0	95	95	12	60	72	12	155	167
Total PHT and VA	**39**	**105**	**537**	**642**	**25**	**273**	**298**	**130**	**810**	**940**
Livestock and fisheries										
Composite fish culture	4	27	28	55	48	15	63	75	43	118
Dairy farming	11	140	229	369	25	62	87	165	291	456
Poultry farming	6	71	74	145	47	18	65	118	92	210
Sheep and goat rearing	5	75	31	106	2	17	19	77	48	125
Others	15	110	165	275	59	164	223	169	329	498
Total LS and F	**41**	**423**	**527**	**950**	**181**	**276**	**457**	**604**	**803**	**1407**
Income generation activities										
Implements	1	0	0	0	15	0	15	15	0	15
Bio-fertilizers	9	49	25	74	15	15	30	64	40	104
Mushroom cultivation	22	169	116	285	91	68	159	260	184	444
Nursery, grafting	9	116	78	194	31	14	45	147	92	239
Production of bio-agents, bio-pesticides	8	138	23	161	62	29	91	200	52	252
Rural Crafts	1	3	13	16	0	0	0	3	13	16
Seed production	4	22	17	39	3	13	16	25	30	55
Tailoring, stitching, embroidery, dying	6	0	0	0	0	144	144	0	144	144
Vermicomposting	16	128	74	202	142	46	188	270	120	390
Others	43	349	332	681	261	147	408	610	479	1089
Total IGA	**119**	**974**	**678**	**1652**	**620**	**476**	**1096**	**1594**	**1154**	**2748**

Area of training	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Agricultural Extension										
Capacity building and group dynamics	2	0	0	0	45	15	60	45	15	60
Others	2	93	19	112	59	9	68	152	28	180
Total AE	**4**	**93**	**19**	**112**	**104**	**24**	**128**	**197**	**43**	**240**
Grand Total	**252**	**2165**	**2102**	**4267**	**1175**	**1213**	**2388**	**3340**	**3315**	**6655**

Table 3.3.26. Details of vocational training programmes in Tamil Nadu

Area of training	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop production and management										
Commercial floriculture	1	0	12	12	0	7	7	0	19	19
Commercial fruit production	1	25	20	45	5	10	15	30	30	60
Commercial vegetable production	2	28	31	59	0	6	6	28	37	65
Integrated crop management	2	25	10	35	8	4	12	33	14	47
Organic farming	4	121	25	146	9	5	14	130	30	160
Others	22	153	183	336	88	113	201	241	296	537
Total CPM	**32**	**352**	**281**	**633**	**110**	**145**	**255**	**462**	**426**	**888**
Post-harvest technology and value addition										
Value addition	15	72	204	276	9	57	66	81	261	342
Others	3	0	38	38	4	43	47	4	81	85
Total PHT and VA	**18**	**72**	**242**	**314**	**13**	**100**	**113**	**85**	**342**	**427**
Livestock and fisheries										
Composite fish culture	2	27	28	55	0	3	3	27	31	58
Dairy farming	7	84	153	237	15	44	59	99	197	296
Poultry farming	4	64	68	132	10	8	18	74	76	150
Sheep and goat rearing	3	48	18	66	1	3	4	49	21	70
Others	13	110	165	275	35	120	155	145	285	430
Total LS and F	**29**	**333**	**432**	**765**	**61**	**178**	**239**	**394**	**610**	**1004**
Income generation activities										
Bio-fertilizers	2	41	22	63	12	14	26	53	36	89
Mushroom cultivation	4	83	31	114	2	2	4	85	33	118
Nursery, grafting	4	36	41	77	11	7	18	47	48	95
Production of bio-agents, bio-pesticides	3	23	9	32	1	24	25	24	33	57
Rural Crafts	1	3	13	16	0	0	0	3	13	16
Seed production	1	6	12	18	0	12	12	6	24	30
Vermicomposting	11	115	70	185	21	23	44	136	93	229
Others	25	271	249	520	103	94	197	374	343	717
Total IGA	**51**	**578**	**447**	**1025**	**150**	**176**	**326**	**728**	**623**	**1351**
Agricultural Extension										
Capacity building and group dynamics	2	0	0	0	45	15	60	45	15	60
Others	1	63	13	76	39	0	39	102	13	115
Total AE	**3**	**63**	**13**	**76**	**84**	**15**	**99**	**147**	**28**	**175**
Grand Total	**133**	**1398**	**1415**	**2813**	**418**	**614**	**1032**	**1816**	**2029**	**3845**

Table 3.3.27. Details of vocational training programmes in Andhra Pradesh

Area of training	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop production and management										
Organic farming	2	16	10	26	35	8	43	51	18	69
Others	1	10	3	13	7	10	17	17	13	30
Total CPM	**3**	**26**	**13**	**39**	**42**	**18**	**60**	**68**	**31**	**99**
Post-harvest technology and value addition										
Value addition	16	31	212	243	4	97	101	35	309	344
Others	1	0	0	0	8	12	20	8	12	20
Total PHT and VA	**17**	**31**	**212**	**243**	**12**	**109**	**121**	**43**	**321**	**364**
Livestock and fisheries										
Sheep and goat rearing	1	15	0	15	0	0	0	15	0	15
Others	2	0	0	0	24	44	68	24	44	68
Total LS and F	**3**	**15**	**0**	**15**	**24**	**44**	**68**	**39**	**44**	**83**
Income generation activities										
Implements	1	0	0	0	15	0	15	15	0	15
Bio-fertilizers	7	8	3	11	3	1	4	11	4	15
Mushroom cultivation	17	86	85	171	89	46	135	175	131	306
Nursery, grafting	4	71	37	108	5	6	11	76	43	119
Production of bio-agents, bio-pesticides	4	59	14	73	47	5	52	106	19	125
Seed production	3	16	5	21	3	1	4	19	6	25
Tailoring, stitching, embroidery, dying	2	0	0	0	0	44	44	0	44	44
Vermicomposting	3	2	4	6	72	23	95	74	27	101
Others	15	60	65	125	108	41	149	168	106	274
Total IGA	**56**	**302**	**213**	**515**	**342**	**167**	**509**	**644**	**380**	**1024**
Grand Total	**79**	**374**	**438**	**812**	**420**	**338**	**758**	**794**	**776**	**1570**

Table 3.3.28. Details of vocational training programmes in Telangana

Area of training	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop production and management										
Commercial vegetable production	1	20	0	20	20	0	20	40	0	40
Integrated crop management	6	75	25	100	0	0	0	75	25	100
Organic farming	2	41	15	56	4	0	4	45	15	60
Others	5	56	7	63	69	1	70	125	8	133
Total CPM	14	192	47	239	93	1	94	285	48	333
Post-harvest technology and value addition										
Value addition	3	2	26	28	0	59	59	2	85	87
Total PHT and VA	3	2	26	28	0	59	59	2	85	87
Livestock and fisheries										
Composite fish culture	2	0	0	0	48	12	60	48	12	60
Poultry farming	2	7	6	13	37	10	47	44	16	60
Total LS and F	4	7	6	13	85	22	107	92	28	120

Area of training	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Income generation activities										
Mushroom cultivation	1	0	0	0	0	20	20	0	20	20
Nursery, grafting	1	9	0	9	15	1	16	24	1	25
Production of bio-agents, bio-pesticides	1	56	0	56	14	0	14	70	0	70
Tailoring, stitching, embroidery, dying	4	0	0	0	0	100	100	0	100	100
Vermicomposting	2	11	0	11	49	0	49	60	0	60
Others	3	18	18	36	50	12	62	68	30	98
Total IGA	12	94	18	112	128	133	261	222	151	373
Agricultural Extension										
Others	1	30	6	36	20	9	29	50	15	65
Total AE	**1**	**30**	**6**	**36**	**20**	**9**	**29**	**50**	**15**	**65**
Grand Total	**34**	**325**	**103**	**428**	**326**	**224**	**550**	**651**	**327**	**978**

Training on mango grafting techniques – KVK, Karimnagar (Ramagirikhilla)

Table 3.3.29. Details of vocational training programmes in Puducherry

Area of training	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Post-harvest technology and value addition										
Others	1	0	57	57	0	5	5	0	62	62
Total PHT and VA	**1**	**0**	**57**	**57**	**0**	**5**	**5**	**0**	**62**	**62**
Livestock and fisheries										
Dairy farming	4	56	76	132	10	18	28	66	94	160
Sheep and goat rearing	1	12	13	25	1	14	15	13	27	40
Total LS and F	**5**	**68**	**89**	**157**	**11**	**32**	**43**	**79**	**121**	**200**
Income generation activities										
Grand Total	**6**	**68**	**146**	**214**	**11**	**37**	**48**	**79**	**183**	**262**

3.4. Extension Activities

KVKs organized 46207 extension activities for creating awareness about latest improved agricultural technologies in which 2811719 farmers and 87170 Extension Personnel participated and benefited (Table 3.4.1). The extension activities included advisory services, exposure visits, animal health camps, technology week, group discussions, method demonstrations, soil health camps, Kisan mela, Kisan ghosthi *etc*. (Table 3.4.2). KVKs in Tamil Nadu organized 25727 extension activities for 567474 farmers and Extension Personnel (Table 3.4.3). KVKs in Andhra Pradesh organized 10908 extension activities in which 615049 persons participated (Table 3.4.4). In Telangana, 8890 activities were organized for 1701436 participants (Table 3.4.5). In Puducherry 1682 extension activities were organized for 14924 participants (Table 3.4.6).

Table 3.4.1. Details of state wise extension activities organized by KVKs in Zone-X

State	No. of programmes	No. of farmers	No. of Extension Personnel	Total
Tamil Nadu	25727	530534	36940	567474
Andhra Pradesh	10908	573226	41823	615049
Telangana	8890	1694640	6796	1701436
Puducherry	682	13313	1611	14924
Total	**46207**	**2811713**	**87170**	**2898883**

Table 3.4.2. Details of Extension Activities organized by KVKs in Zone-X

Activities	No. of programmes to Farmers	No. of farmers	No. of programmes to Extension Personnel	No. of Extension Personnel	Total Programmes	Total Participants
Advisory Services	16658	1975707	2152	17893	18810	1993600
Attended as resource person	2605	105647	749	15030	3354	120677
Awareness programmes on PPV & FRA	97	10151	11	324	108	10475
Celebration of important days	720	63562	179	3897	899	67459
Diagnostic visits	4573	29907	680	6865	5253	36772
Exhibition	466	190831	165	8020	631	198851
Exposure visits	493	25146	75	3549	568	28695
Ex-trainees Sammelan	27	865	1	51	28	916
Farm Science Club	78	6231	2	107	80	6338
Farmers' seminar/workshop	106	12518	21	1118	127	13636
Field Day	537	16114	95	824	632	16938
Film Show	516	24719	49	808	565	25527
Group discussions	1178	24606	169	3934	1347	28540
Kisan Ghosthi	151	17825	44	1075	195	18900
Kisan Mela	225	84170	81	4554	306	88724
Mana Telangana – Mana Vyavasayam	7	149	4	43	11	192
Method Demonstrations	1941	41903	214	4851	2155	46754
Plant/animal health camps	133	7299	41	526	174	7825
Scientists' visit to farmers field	7597	46592	391	6709	7988	53301
Self -help groups	152	3902	13	321	165	4223
Special day celebration	596	41158	167	3768	763	44926
Others	1931	82711	117	2903	2048	85614
Total	**40787**	**2811713**	**5420**	**87170**	**46207**	**2898883**

Table 3.4.3. Details of Extension Activities organized by KVKs in Tamil Nadu

Activities	No. of programmes to Farmers	No. of farmers	No. of programmes to Extension Personnel	No. of Extension Personnel	Total Programmes	Total Participants
Advisory Services	10684	81513	943	4735	11627	86248
Attended as resource person	1696	67773	460	6462	2156	74235
Awareness programmes on PPV & FRA	64	8939	2	203	66	9142
Celebration of important days	280	32942	67	1099	347	34041
Diagnostic visits	1965	9481	256	858	2221	10339
Exhibition	304	114111	133	5590	437	119701
Exposure visits	299	12669	39	1372	338	14041
Ex-trainees Sammelan	15	410	1	51	16	461
Farm Science Club	67	1582	1	91	68	1673
Farmers' seminar/workshop	68	9349	7	388	75	9737
Field Day	243	5601	43	272	286	5873
Film Show	322	16651	40	681	362	17332
Group discussions	418	8754	73	1748	491	10502
Kisan Ghosthi	31	5253	16	198	47	5451
Kisan Mela	107	27950	58	2549	165	30499
Mana Telangana – Mana Vyavasayam	1	122	0	19	1	141
Method Demonstrations	1048	25557	75	2780	1123	28337
Plant/animal health camps	69	3828	12	398	81	4226
Scientists' visit to farmers field	3883	19155	142	3106	4025	22261
Self -help groups	66	1470	2	45	68	1515
Special day celebration	275	23541	104	2129	379	25670
Others	1251	53883	97	2166	1348	56049
Total	**23156**	**530534**	**2571**	**36940**	**25727**	**567474**

Table 3.4.4. Details of Extension Activities organized by KVKs in Andhra Pradesh

Activities	No. of programmes to Farmers	No. of farmers	No. of programmes to Extension Personnel	No. of Extension Personnel	Total Programmes	Total Participants
Advisory Services	2194	375610	826	11584	3020	387194
Attended as resource person	439	14482	184	5136	623	19618
Awareness programmes on PPV & FRA	7	286	3	121	10	407
Celebration of important days	272	10426	102	2240	374	12666
Diagnostic visits	1798	14991	371	5793	2169	20784
Exhibition	106	30596	24	2298	130	32894
Exposure visits	125	10938	19	1950	144	12888
Ex-trainees Sammelan	7	255	0	0	7	255
Farm Science Club	9	4606	0	0	9	4606
Farmers' seminar/workshop	26	1022	9	726	35	1748
Field Day	184	5233	38	464	222	5697
Film Show	138	5580	5	46	143	5626
Group discussions	466	8306	75	2025	541	10331
Kisan Ghosthi	72	7255	17	707	89	7962
Kisan Mela	61	37426	12	1637	73	39063
Mana Telangana – Mana Vyavasayam	0	0	0	0	0	0

Activities	No. of programmes to Farmers	No. of farmers	No. of programmes to Extension Personnel	No. of Extension Personnel	Total Programmes	Total Participants
Method Demonstrations	581	10495	115	1808	696	12303
Plant/animal health camps	45	2040	12	114	57	2154
Scientists' visit to farmers field	1727	13885	170	3312	1897	17197
Self -help groups	58	1630	9	265	67	1895
Special day celebration	217	11637	61	1597	278	13234
Others	324	6527	0	0	324	6527
Total	**8856**	**573226**	**2052**	**41823**	**10908**	**615049**

Table 3.4.5. Details of Extension Activities organized by KVKs in Telangana

Activities	No. of programmes to Farmers	No. of farmers	No. of programmes to Extension Personnel	No. of Extension Personnel	Total Programmes	Total Participants
Advisory Services	3699	1518362	371	1555	4070	1519917
Attended as resource person	419	21411	84	3012	503	24423
Awareness programmes on PPV & FRA	26	926	6	0	32	926
Celebration of important days	162	19789	6	514	168	20303
Diagnostic visits	787	5308	46	198	833	5506
Exhibition	54	45232	6	75	60	45307
Exposure visits	68	1514	16	227	84	1741
Ex-trainees Sammelan	5	200	0	0	5	200
Farm Science Club	2	43	1	16	3	59
Farmers' seminar/workshop	11	2069	1	4	12	2073
Field Day	102	5105	9	60	111	5165
Film Show	35	2068	0	0	35	2068
Group discussions	289	7382	14	69	303	7451
Kisan Ghosthi	48	5317	11	170	59	5487
Kisan Mela	54	17497	8	269	62	17766
Mana Telangana – Mana Vyavasayam	6	27	4	24	10	51
Method Demonstrations	305	5615	22	212	327	5827
Plant/animal health camps	16	1310	17	14	33	1324
Scientists' visit to farmers field	1851	13421	57	242	1908	13663
Self -help groups	27	777	2	11	29	788
Special day celebration	99	5670	0	13	99	5683
Others	144	15597	0	111	144	15708
Total	**8209**	**1694640**	**681**	**6796**	**8890**	**1701436**

KVK Visakhapatnam provided me with awareness on new technologies. Paddy seed production fetched Rs.25/kg while the grain price was Rs.17/kg. Groundnut varieties Kadiri lepakshi and Nityaharitha increased the yield from 15.6 to 17.5 q/ha. I am cultivating Dragon fruit with subsidy from government on rocky fields in my farm. I have established an IFS unit with farm pond and earning year-round income.

Mr. Sayam Raghunath
Bangarumetta , Anakapalli district, AP

Table 3.4.6. Details of Extension Activities organized by KVKs in Puducherry

Activities	No. of programmes to Farmers	No. of farmers	No. of programmes to Extension Personnel	No. of Extension Personnel	Total Programmes	Total Participants
Advisory Services	81	222	12	19	93	241
Attended as resource person	51	1981	21	420	72	2401
Awareness programmes on PPV & FRA	0	0	0	0	0	0
Celebration of important days	6	405	4	44	10	449
Diagnostic visits	23	127	7	16	30	143
Exhibition	2	892	2	57	4	949
Exposure visits	1	25	1	0	2	25
Ex-trainees Sammelan	0	0	0	0	0	0
Farm Science Club	0	0	0	0	0	0
Farmers' seminar/workshop	1	78	4	0	5	78
Field Day	8	175	5	28	13	203
Film Show	21	420	4	81	25	501
Group discussions	5	164	7	92	12	256
Kisan Ghosthi	0	0	0	0	0	0
Kisan Mela	3	1297	3	99	6	1396
Mana Telangana – Mana Vyavasayam	0	0	0	0	0	0
Method Demonstrations	7	236	2	51	9	287
Plant/animal health camps	3	121	0	0	3	121
Scientists' visit to farmers field	136	131	22	49	158	180
Self -help groups	1	25	0	0	1	25
Special day celebration	5	310	2	29	7	339
Others	212	6704	20	626	232	7330
Total	**566**	**13313**	**116**	**1611**	**682**	**14924**

Table 3.4.7. Details of Other Extension Activities organized by KVKs in Zone-X

Activity	No. of Activities
Animal health camps (No. of animals treated)	30119
Bimonthly Newsletters (English, Tamil and Telugu)	200
Electronic Media (CD/DVD)	104
Exhibitions	631
Extension Literature	628
Farmers visit to KVK	91523
Kisan melas	306
Lectures delivered as resource persons	2931
Newspaper coverage	6699
Popular articles	751
Radio Talks	638
Registration of farmers through AKPS	67117
Research articles	327
Success stories	909
TV Talks	711
Others	1782
Total	**205376**

Table 3.4.8. Details of Other Extension Activities organized by KVKs in Tamil Nadu

Activity	No. of Activities
Animal health camps (No. of animals treated)	27240
Bimonthly Newsletters (English, Tamil and Telugu)	78
Electronic Media (CD/DVD)	52
Exhibitions	437
Extension Literature	378
Farmers visit to KVK	35611
Kisan melas	165
Lectures delivered as resource persons	1985
Newspaper coverage	1333
Popular articles	359
Radio Talks	353
Registration of farmers through AKPS	6179
Research articles	172
Success stories	631
TV Talks	199
Others	58
Total	**75230**

Table 3.4.9. Details of Other Extension Activities organized by KVKs in Andhra Pradesh

Activity	No. of Activities
Animal health camps (No. of animals treated)	2455
Bimonthly Newsletters (English, Tamil and Telugu)	76
Electronic Media (CD/DVD)	34
Exhibitions	130
Extension Literature	110
Farmers visit to KVK	41889
Kisan melas	73
Lectures delivered as resource persons	444
Newspaper coverage	3124
Popular articles	192
Radio Talks	128
Registration of farmers through AKPS	35092
Research articles	79
Success stories	95
TV Talks	222
Others	2
Total	**84145**

Table 3.4.10. Details of Other Extension Activities organized by KVKs in Telangana

Activity	No. of Activities
Animal health camps (No. of animals treated)	424
Bimonthly Newsletters (English, Tamil and Telugu)	46
Electronic Media (CD/DVD)	17
Exhibitions	60
Extension Literature	128
Farmers visit to KVK	13803
Kisan melas	62
Lectures delivered as resource persons	433
Newspaper coverage	2146
Popular articles	195
Radio Talks	143
Registration of farmers through AKPS	25846
Research articles	73
Success stories	73
TV Talks	282
Others	1722
Total	**45453**

Table 3.4.11. Details of Other Extension Activities organized by KVKs in Puducherry

Activity	No. of Activities
Animal health camps (No. of animals treated)	0
Bimonthly Newsletters (English, Tamil and Telugu)	0
Electronic Media (CD/DVD)	1
Exhibitions	4
Extension Literature	12
Farmers visit to KVK	220
Kisan melas	6
Lectures delivered as resource persons	69
Newspaper coverage	96
Popular articles	5
Radio Talks	14
Registration of farmers through AKPS	0
Research articles	3
Success stories	110
TV Talks	8
Others	0
Total	**548**

Technology Week

Technology week celebrations were organized by KVKs in which 215422 farmers participated in 342391 events (Table 3.4.7). The activities include *gosthies*, lectures, exhibition, film shows, fairs, distribution of inputs etc.

Table 3.4.7. Details of technology week activities organized by KVKs in Zone X

Types of Activities	Tamil Nadu		Andhra Pradesh		Telangana		Puducherry		Total	
	No.	F	No.	F	No.	F	No.	F	No.	F
Gosthies	12	3290	25	3824	18	1096	0	0	**55**	**8210**
Lectures organized	68	3952	13	388	45	1789	5	197	**131**	**6326**
Exhibition	31	6112	11	12230	25	4055	1	197	**68**	**22594**
Film show	21	2643	7	1570	15	1082	1	197	**44**	**5492**
Fair	10	2268	6	2590	7	1155	0	0	**23**	**6013**
Farm Visit	86	3523	250	7832	148	2141	1	197	**485**	**13693**

Types of Activities	Tamil Nadu		Andhra Pradesh		Telangana		Puducherry		Total	
	No.	F	No.	F	No.	F	No.	F	No.	F
Diagnostic Practical	9	431	32	474	136	1187	0	0	**177**	**2092**
Distribution of Literature (No.)	41	6583	28	7924	32	5204	5	197	**106**	**19908**
Distribution of Seed (q)	5	224	12	359	20	1317	0	0	**37**	**1900**
Distribution of Planting materials (No.)	336	562	5747	101646	330868	1138	394	197	**337345**	**103543**
Bio Product distribution (Kg)	88	206	31	205	2056	437	0	0	**2175**	**848**
Bio Fertilizers (q)	2	70	0	0	210	1033	0	0	**212**	**1103**
Distribution of fingerlings	0	0	0	0	1	3	0	0	**1**	**3**
Distribution of Livestock specimen (No.)	0	0	11	115	504	318	0	0	**515**	**433**
Total number of farmers visited the technology week	33	6172	3	525	44	7147	6	197	**86**	**14041**
Others	26	702	865	5712	40	2809	0	0	**931**	**9223**
Total	**768**	**36738**	**7041**	**145394**	**334169**	**31911**	**413**	**1379**	**342391**	**215422**

F = No of farmers

Kisan Mobile Advisories

To disseminate the latest technologies on crops and animals, knowledge on weather, market prices of various commodities *etc*. to the farmers, mobile advisories through Kisan Mobile portal and other sources were issued by KVKs through text and voice messages. During the year, KVKs have sent 53311 messages to 20218421 farmers (Table 3.4.8). Among them, 1470 messages were sent through Kisan Mobile portal to 8319298 farmers (Table 3.4.9) and 51841 messages were sent through other sources to 11899123 farmers (Table 3.4.10).

Table 3.4.8. Details of mobile advisories issued by KVKs in Zone X

Type of message	Tamil Nadu		Andhra Pradesh		Telangana		Puducherry		Total	
	NM	NF	NM	NF	NM	NF	NM	NF	NM	NF
Kisan Mobile Advisories	803	4079819	408	1039622	259	3199857	0	0	1470	8319298
Other Mobile Advisories	20502	1705129	8427	7153076	22698	3026851	214	14067	51841	11899123
Total	**21305**	**5784948**	**8835**	**8192698**	**22957**	**6226708**	**214**	**14067**	**53311**	**20218421**

NM = No. of Messages; NF = No. of Farmers

Table 3.4.9. Details of Kisan Mobile Advisories issued by KVKs in Zone X

Type of message	Tamil Nadu		Andhra Pradesh		Telangana		PY		Total	
	NM	NF	NM	NF	NM	NF	NM	NF	NM	NF
Crop										
Text	271	2518271	238	780947	199	2604335	0	0	708	5903553
Voice	3	1090	0	0	0	0	0	0	3	1090
Text and Voice	0	0	0	0	29	32050	0	0	29	32050
Total	274	2519361	238	780947	228	2636385	0	0	740	5936693
Livestock										
Text	78	547812	27	63864	3	900	0	0	108	612576
Voice	10	80	0	0	0	0	0	0	10	80
Text and Voice	9	32	0	0	0	0	0	0	9	32
Total	97	547924	27	63864	3	900	0	0	127	612688
Agro Advisories										
Text	148	226564	37	30297	5	0	0	0	190	256861
Voice	0	0	0	0	0	0	0	0	0	0
Text and Voice	0	0	0	0	5	0	0	0	5	0
Total	148	226564	37	30297	10	0	0	0	195	256861

Type of message	Tamil Nadu		Andhra Pradesh		Telangana		PY		Total	
	NM	NF	NM	NF	NM	NF	NM	NF	NM	NF
Critical Technology Inputs										
Text	12	112409	5	12658	3	264691	0	0	20	389758
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
Total	12	112409	5	12658	3	264691	0	0	20	389758
Farm Implements										
Text	6	98194	3	12658	0	0	0	0	9	110852
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
Total	6	98194	3	12658	0	0	0	0	9	110852
Awareness										
Text	86	199882	21	20515	0	0	0	0	107	220397
Voice	0	0	0	0	0	0	0	0	0	0
Text and Voice	0	0	0	0	0	0	0	0	0	0
Total	86	199882	21	20515	0	0	0	0	107	220397
KVK-Programmes										
Text	29	129783	29	37774	2	0	0	0	60	167557
Voice	0	0	0	0	0	0	0	0	0	0
Text and Voice	0	0	0	0	2	0	0	0	2	0
Total	29	129783	29	37774	4	0	0	0	62	167557
Weather										
Text	105	79902	26	63650	9	281856	0	0	140	425408
	0	0	0	0	0	0	0	0	0	0
Text and Voice	0	0	0	0	2	16025	0	0	2	16025
Total	105	79902	26	63650	11	297881	0	0	142	441433
Market										
Text	36	117843	0	0	0	0	0	0	36	117843
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
Total	36	117843	0	0	0	0	0	0	36	117843
Women and Children										
Text	2	36190	20	7477	0	0	0	0	22	43667
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
Total	2	36190	20	7477	0	0	0	0	22	43667
Others										
Text	8	11767	2	9782	0	0	0	0	10	21549
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
Total	8	11767	2	9782	0	0	0	0	10	21549
Grand Total										
Text	781	4078617	408	1039622	221	3151782	0	0	1410	8270021
Voice	13	1170	0	0	0	0	0	0	13	1170
Text and Voice	9	32	0	0	38	48075	0	0	47	48107
Total	803	4079819	408	1039622	259	3199857	0	0	1470	8319298

NM = No. of Messages; NF = No. of Farmers

Table 3.4.10. Details of other mobile advisories

Type of message	Tamil Nadu		Andhra Pradesh		Telangana		PY		Total	
	NM	NF	NM	NF	NM	NF	NM	NF	NM	NF
Crop										
Text	6425	583587	2751	2754701	7609	1384631	45	347	16830	4723266
Voice	664	17935	578	34720	648	71112	0	0	1890	123767
Text and Voice	72	16326	442	740472	4595	308561	0	0	5109	1065359
Total	7161	617848	3771	3529893	12852	1764304	45	347	23829	5912392
Livestock										
Text	1339	239541	583	406122	1726	65594	11	86	3659	711343
Voice	194	19350	96	6892	422	2247	0	0	712	28489
Text and Voice	155	30696	9	184801	226	29085	0	0	390	244582
Total	1688	289587	688	597815	2374	96926	11	86	4761	984414
Agro Advisories										
Text	3642	151635	2179	708696	2371	661596	0	0	8192	1521927
Voice	75	2256	81	16201	155	1617	0	0	311	20074
Text and Voice	149	4319	12	180000	83	1349	0	0	244	185668
Total	3866	158210	2272	904897	2609	664562	0	0	8747	1727669
Critical Technology Inputs										
Text	81	18921	25	18213	66	934	12	85	184	38153
	27	1942	11	1561	30	30	0	0	68	3533
	11	1624	0	0	12	12	0	0	23	1636
Total	119	22487	36	19774	108	976	12	85	275	43322
Farm Implements										
Text	57	25371	33	38055	84	33056	0	0	174	96482
	17	1078	54	1957	16	212	0	0	87	3247
	3	1054	0	0	23	32228	0	0	26	33282
Total	77	27503	87	40012	123	65496	0	0	287	133011
Awareness										
Text	1310	44720	115	239442	463	135642	0	0	1888	419804
Voice	13	2190	121	2852	130	6303	0	0	264	11345
Text and Voice	8	1339	8	182471	51	38443	0	0	67	222253
Total	1331	48249	244	424765	644	180388	0	0	2219	653402
KVK-Programmes										
Text	1168	121504	189	247093	303	33188	38	2349	1698	404134
Voice	12	2190	119	2267	80	6239	0	0	211	10696
Text and Voice	11	1624	69	180300	49	15468	0	0	129	197392
Total	1191	125318	377	429660	432	54895	38	2349	2038	612222
Weather										
Text	3539	337390	495	498673	1824	110697	0	0	5858	946760
	15	3615	97	43133	34	6185	0	0	146	52933
Text and Voice	7	1624	41	213885	1294	38653	0	0	1342	254162
Total	3561	342629	633	755691	3152	155535	0	0	7346	1253855
Market										
Text	580	36445	61	20446	61	2717	108	11200	810	70808
	8	1620	46	4992	5	5	0	0	59	6617

Type of message	Tamil Nadu		Andhra Pradesh		Telangana		PY		Total	
	NM	NF	NM	NF	NM	NF	NM	NF	NM	NF
	8	1909	17	5690	0	0	0	0	25	7599
Total	596	39974	124	31128	66	2722	108	11200	894	85024
Women and Children										
Text	40	15546	79	17157	218	22435	0	0	337	55138
	100	1259	70	5194	65	65	0	0	235	6518
	8	1909	0	0	23	23	0	0	31	1932
Total	148	18714	149	22351	306	22523	0	0	603	63588
Others										
Text	754	12305	25	217060	20	9262	0	0	799	238627
	5	880	18	30	0	0	0	0	23	910
	5	1425	3	180000	12	9262	0	0	20	190687
Total	764	14610	46	397090	32	18524	0	0	842	430224
Grand Total										
Text	18935	1586965	6535	5165658	14745	2459752	214	14067	40429	9226442
Voice	1130	54315	1291	119799	1585	94015	0	0	4006	268129
Text and Voice	437	63849	601	1867619	6368	473084	0	0	7406	2404552
Total	20502	1705129	8427	7153076	22698	3026851	214	14067	51841	11899123

NM = No. of Messages; NF = No. of Farmers

Kisan mela – KVK, Mahaboobnagar (Palem), Telangana

Demonstration on seed treatment with bio Fertilizer on Blackgram – KVK, Dindigul, Tamil Nadu

Solar Drier- KVK, Villupuram , Tamil Nadu

3.5. Publications

The KVKs of Zone-X brought out 6955 publications, which include 314 research papers, 782 popular articles, 634 success stories, 819 technical bulletins, 137 Books, *etc*. and provided to the farmers and other clientele. The details are given in Table 3.5.1.

Table 3.5.1. Details of Publications by KVKs

Category	Tamil Nadu	Andhra Pradesh	Telangana	Puducherry	Total
Research Papers	195	59	60	0	**314**
Popular Articles	409	191	175	7	**782**
Books Chapters	131	6	6	0	**143**
Books	115	16	2	4	**137**
Conference Papers	65	40	27	4	**136**
Seminar Papers	61	35	12	0	**108**
Posters	86	88	46	0	**220**
Workshop presentations	64	71	21	3	**159**
Folders	109	36	20	0	**165**
Leaflets	314	17	24	1	**356**
Pamphlets	263	23	21	0	**307**
Brochures	36	10	14	0	**60**
Pocket Cards & Dairy	2	0	0	0	**2**
Success Stories	526	54	54	0	**634**
Technical Bulletins	87	208	524	0	**819**
Technical Reports	169	147	130	0	**446**
Training Manuals	200	9	17	0	**226**
Proceedings	124	19	33	0	**176**
Others	1672	18	75	0	**1765**
Total	**4628**	**1047**	**1261**	**19**	**6955**

Fifty-one KVKs in the Zone published monthly, quarterly, half yearly and annual newsletters in English and local languages and distributed to farmers and other stake holders (Table 3.5.2).

Table 3.5.2 Newsletters published.

State and KVK	Name of newsletter	Periodicity	No of copies
Tamil Nadu			
Ariyalur	Seithi Malar	Quarterly	500
Coimbatore	Kovai Velanmai	Quarterly	500
Cuddalore	Erkalam	Quarterly	600
Dharmapuri	KVK Newsletter	Quarterly	800
Dindigul	KVK Newsletter	Quarterly	400
Erode	KVK Reporter	Quarterly	4000
Erode	Uzhavar Malar	Quarterly	4000
Kancheepuram	KVK Newsletter	Quarterly	200
Kanyakumari	Seithi Madal	Half yearly	50
Karur	KVK Newsletter	Half yearly	200
Krishnagiri	Uzhavar Thunaivan	Quarterly	100

State and KVK	Name of newsletter	Periodicity	No of copies
Madurai	Newsletter	Quarterly	100
Namakkal	Newsletter	Quarterly	400
Perambalur	KVK Newsletter	Half yearly	100
Pudukkottai	KVK Newsletter	Quarterly	100
Ramanathapuram	Manvalam - Manithavalam	Quarterly	300
Salem	KVK Newsletter	Quarterly	400
Sivagangai	KVK Newsletter	Half yearly	200
Theni	Velan Ariviyal Mlar	Quarterly	200
Thiruvallur	KVK Newsletter	Quarterly	300
Thiruvannamalai	Pasumai Kathir	Half yearly	100
Thiruvarur	Nerkalanjiyam	Quarterly	400
Thoothukudi	KVK Newsletter	Quarterly	1000
Tirunelveli	KVK Newletter	Annual	100
Villupuram	TNAU Newsletter	Monthly	300
Villupuram	KVK News bulletin	Quarterly	100
Villupuram II	KVK Activity	Quarterly	300
Virudhunagar	TNAU Newsletter	Monthly	100
Andhra Pradesh			
Chittoor (RASS)	Krishi e newsletter	Quarterly	400
East Godavari (Kalavacharla)	ICAR-CTRI Newsletter	Half-Yearly	500
Guntur (Lam)	SVVU Reports	Monthly	1200
Kadapa (Vonipenta)	e-News letter	Fortnightly	240
Kurnool (Yagantipalle)	KVK e-Newsletter	Bi-Annual	100
Visakhapatnam (BCT)	BCT Newsletter	Bimonthly	600
Telangana			
Khammam (Wyra)	PJTSAU Newsletter	Quarterly	400
Karimnagar (Ramagirikhilla)	e- newsletter	quarterly	400
Mahabubnagar (Palem)	KVK E-News letter	quarterly	250
Mahabubnagar (YFA)	KVK Technical activities	Quarterly	400
Medak (Tuniki)	Bimonthly News letter	Bimonthly	500
Medak (Tuniki)	Annual Newsletter	Yearly	100
Ranga Reddy	CRIDA NEWS	Bi-Annual	100
Puducherry			
Karaikal	KVK Uzhvar Seithy Madal	Half Yearly	500

With the technical support of KVK, West Godavari (Undi), I established 200 honeybee colonies and earning Rs. 8 to 10 lakhs per annum through the sale of honey, beehive boxes, colonies, and other equipment. I have my own brand to market my apiary. I am selling 1500 to 2000 honeybee colonies to potential entrepreneurs.

Mr. M.S.Lakshmipathi Raju
Bhimavaram, West Godavari, AP

3.6 Critical Technology Products

KVKs produce seeds of improved varieties/hybrids of crops, planting materials of selected material of plant species, bio products, improved livestock breeds and species to provide them to the farmers thereby facilitating rapid technology transfer.

3.6.1 Seed

KVKs produced and supplied 7978 quintals of seed of cereals and millets, 736 quintals of oilseeds, 4014 quintals of pulses and supplied to 12734, 3585 and 14416 farmers, respectively. Also 67 quintals of vegetables, 479 quintals of fodder seeds, 44 quintals of commercial crops 19 quintals of green manures and 15 quintals of flowers seeds were produced and supplied to 20899 farmers. (Table 3.6.1).

3.6.2 Planting material

Planting materials including 5732588 vegetable seedlings, 1510511 fodder slips, 5915575 flowers and ornamental plants, 156558 fruit saplings, 143010 special planting materials, 97879 forestry and plantation crops, 9391 medicinal plants, *etc*., totaling 8263954 were supplied to 76401 farmers in the Zone. (Table 3.6.2)

3.6.3 Bio-products and bio-agents

A total of 31733 kg of bio fertilizers, 62791 kg of bio pesticides and 792730 kgs of bio-inputs including vermicompost were produced supplied to 195921 farmers (Table 3.6.3).

3.6.4 Livestock Species

A total of 916283 livestock species, comprising of 799853 fish spawn/seed, 100334 poultry chicks, 14960 dairy animals and 1132 sheep and goat were produced and provided to 116429 farmers (Table 3.6.4).

3.6.5 Other inputs

A total of 55510 quintals of other inputs comprising 28075 quintals of crop inputs, 5411 quintals of animal feed and 3500 quintals of poultry feed. 500 quintals of fish feed and 18024 quintals of other inputs have been produced and provided to 152332 farmers (Table 3.6.5).

Table 3.6.1. Production and supply of seed

Category	Tamil Nadu			Andhra Pradesh			Telangana			Puducherry			Total		
	Q	V	F	Q	V	F	Q	V	F	Q	V	F	Q	V	F
Cereals and Millets	1319	2983372	859	3398	11359380	4393	3230	11467400	7411	31	99460	71	**7978**	**25909612**	**12734**
Oil Seeds	280	3372816	2078	386	4412870	1126	70	670441	381	0	0	0	**736**	**8456127**	**3585**
Pulses	1080	9790141	2434	2406	27597225	7341	527	4343566	4635	1	11220	6	**4014**	**41742152**	**14416**
Vegetables	49	440021	4506	1	80500	317	14	44086	236	3	283535	0	**67**	**848142**	**5059**
Fruits	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**	**0**
Flowers	0	0	0	15	72500	33	0	0	0	0	0	0	**15**	**72500**	**33**
Spices	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**	**0**
Fodder	457	8964233	15067	19	240200	242	3	167250	133	0	0	0	**479**	**9371683**	**15442**
Special Planting Materials	0	18445	47	0	0	0	0	0	0	0	0	0	**0**	**18445**	**47**
Green manure	17	110355	312	1	5760	6	2	15000	0	0	0	0	**19**	**131115**	**318**
Commercial crops	0	0	0	21	154760	0	22	213251	0	0	0	0	**44**	**368011**	**0**
Total	**3201**	**25679383**	**25303**	**6247**	**43923195**	**13458**	**3869**	**16920994**	**12796**	**34.63**	**394215**	**77**	**13351**	**86917787**	**51634**

Q=Quantity (quintals), V = Value (Rs.), F = No. of Farmers

I am a rural farm women turned Entrepreneur having 2 acres of rainfed land. Under the guidance of KVK Dharmapuri, I established a millet value addition unit, produced millet health mix, laddu, cookies, cake, bread, mixer, and other snacks and I am earning Rs. 25000/month. Apart from meeting my family expenditures I could purchase a van for expanding my business.

- Ms. G. Sangeetha
Makkanur , Dharmapuri, TN

Table 3.6.2. Production and supply of planting material

Category	Tamil Nadu			Andhra Pradesh			Telangana			Puducherry			Total		
	No.	V	F	No.	V	F	No.	V	F	No.	V	F	No.	V	F
Vegetables	129343	170189	2247	3022699	1765639	8197	2527942	2562196	1077	52604	66567	142	**5732588**	**4564591**	**11663**
Fruits	88563	4345836	10453	46769	1034506	2092	14353	1101885	514	6873	237034	536	**156558**	**6719261**	**13595**
Flowers and ornamental plants	6959	139861	1615	482481	551277	961	98885	160491	153	3250	72435	545	**591575**	**924064**	**3274**
Medicinal and aromatic plants	3770	72590	1643	2863	40500	105	1308	16500	129	1450	14500	185	**9391**	**144090**	**2062**
Forestry and plantation crops	89591	4282614	31155	4883	822200	450	0	0	0	3405	222876	215	**97879**	**5327690**	**31820**
Fodder slips	1458311	1322181	830	4000	0	10	35500	17750	38	12700	15030	12700	**1510511**	**1354961**	**13578**
Spices	2643	3085	12	0	0	0	0	0	0	0	0	0	**2643**	**3085**	**12**
Special Planting materials	11550	223300	200	128900	168900	70	0	0	0	2560	64000	0	**143010**	**456200**	**270**
Others	2349	107335	118	17000	30000	9	0	0	0	450	8800	0	**19799**	**146135**	**127**
Total	**1793079**	**10666991**	**48273**	**3709595**	**4413022**	**11894**	**2677988**	**3858822**	**1911**	**83292**	**701242**	**14323**	**8263954**	**19640077**	**76401**

No. = Quantity (Numbers) V = Value (Rs.), F = No. of Farmers

Table 3.6.3. Production and supply of bio-products and bio-agents

Category	Tamil Nadu			Andhra Pradesh			Telangana			Puducherry			Total		
	Q	V	F	Q	V	F	Q	V	F	Q	V	F	Q	V	F
Bio Fertilizers	19367	2478789	126800	3186	438050	1288	9180	596460	1392	0	0	0	**31733**	**3513299**	**129480**
Bio-inputs	201586	2358168	4418	346644	2888810	50107	242135	2424158	1391	2365	35475	66	**792730**	**7706611**	**55982**
Bio-pesticides	11204	1608691	4982	27921	2251770	2226	19650	2511610	1656	4017	979027.5	1595	**62791**	**7351099**	**10459**
Total	**232157**	**6445648**	**136200**	**377751**	**5578630**	**53621**	**270965**	**5532228**	**4439**	**6382**	**1014502.5**	**1661**	**887254**	**18571008**	**195921**

Q=Quantity (kg), V=Value (Rs.), F = No. of Farmers

Table 3.6.4. Details of production of livestock, sheep and goat, poultry breed and fisheries

Category	Tamil Nadu			Andhra Pradesh			Telangana			Puducherry			Total		
	No.	V	F	No.	V	F	No.	V	F	No.	V	F	No.	V	F
Dairy cattle	3297	239895	407	995	292300	566	2	60000	2	10666	352733	68	**14960**	**944928**	**1043**
Goat and Sheep	635	1732440	172	415	914100	110195	58	555000	17	24	139800	14	**1132**	**3341340**	**110398**
Poultry	73047	1831272	2206	9511	827010	589	17658	1443079	1546	118	15935	41	**100334**	**4117296**	**4382**
Piggery	3	24260	1	0	0	0	0	0	0	0	0	0	**3**	**24260**	**1**
Fishery	198673	427971	507	235000	225000	39	357000	357000	18	9180	32100	41	**799853**	**1042071**	**605**
Total	**275655**	**4255838**	**3293**	**245921**	**2258410**	**111389**	**374718**	**2415079**	**1583**	**19988**	**540568**	**164**	**916283**	**9469895**	**116429**

No.=Quantity (Nos.), V=Value (Rs.), F = No. of Farmers

Table 3.6.5. Details of other inputs produced and distributed.

Category	Tamil Nadu			Andhra Pradesh			Telangana			Puducherry			Total		
	Q	V	F	Q	V	F	Q	V	F	Q	V	F	Q	V	F
Crop inputs	26335	6120543	132991	1480	300540	673	260	251520	6425	0	0	0	**28075**	**6672603**	**140089**
Animal feed	4287	97895	299	500	18000	0	624	58500	4055	0	0	0	**5411**	**174395**	**4354**
Poultry feed	1500	34000	54	1000	36000	0	1000	20000	50	0	0	0	**3500**	**90000**	**104**
Fish Feed	500	0	50	0	0	0	0	0	0	0	0	0	**500**	**0**	**50**
Others	16315	1020230	4561	150	222360	57	210	644234	717	1349	269689	2400	**18024**	**2156513**	**7735**
Total	**48937**	**7272668**	**137955**	**3130**	**576900**	**730**	**2094**	**974254**	**11247**	**1349**	**269689**	**2400**	**55510**	**9093511**	**152332**

Q = Quantity (quintals), V = Value (Rs.), F = No. of Farmers

3.6.6 Soil and water testing

KVKs undertake soil and water testing primarily to ascertain the nutrient status of fields earmarked for technology assessment and refinement to make soil test based nutrient recommendations in various micro-farming situations in the district. A total number of 57613 samples including soil (52674), water (4696), plant (137), manure (26) and 80 other samples were analyzed by the KVKs benefiting 33488 farmers of 6175 villages (Table3.6.6.).

Table 3.6.6. Total Soil and water testing by KVKs of Zone-X

Details	Tamil Nadu			Andhra Pradesh			Telangana			Puducherry			Total		
	N	F	V	N	F	V	N	F	V	N	F	V	N	F	V
Soil Samples analyzed using Mini Soil Testing Kit	3742	3286	893	1719	1694	184	3542	3351	273	0	0	0	**9003**	**8331**	**1350**
Soil Samples analyzed by traditional lab method	10331	8368	2531	14286	14171	959	4158	3612	200	146	116	116	**28921**	**26267**	**3806**
Total Soil Samples analyzed	14073	11654	3424	16005	15865	1143	7700	6963	473	146	116	116	**37924**	**34598**	**5156**
Water samples analyzed	3276	2736	1315	1385	1338	525	422	405	77	41	27	27	**5124**	**4506**	**1944**
Plant Samples analyzed	107	101	81	0	0	0	48	12	2	45	0	0	**200**	**113**	**83**
Manure samples analyzed	109	5	4	0	0	0	0	0	0	0	0	0	**109**	**5**	**4**
Others	119	111	64	0	0	0	0	0	0	0	0	0	**119**	**111**	**64**
Total	**17684**	**14607**	**4888**	**17390**	**17203**	**1668**	**8170**	**7380**	**552**	**232**	**143**	**143**	**43476**	**39333**	**7251**

N = Number of samples, F = No. of Farmers, V = No. of villages

3.7 Rainwater Harvesting

A total of 101 training courses and 188 demonstrations were conducted on rainwater harvesting technologies benefiting 9954 farmers. A total of 608 officials attended the demonstrations (Table 3.7.1).

Table 3.7.1 Activities on rainwater harvesting by KVKs of Zone-X

State and KVK	Details of the Activity	No. of Trainings	No. of Demos	No. of Farmers benefited	No. of Officials Visited
Tamil Nadu					
Ariyalur	Farm ponds.	7	7	720	24
Cuddalore	Water use efficiency	16	16	560	48
Cuddalore	Storage of rainwater	8	8	270	32
Dindigul	High density planting and management of Mango to farmers	0	1	278	12
Dindigul	*In-situ* moisture conservation and storage of run-off through farm pond	5	1	278	12
Namakkal	Compartmental bunding and summer ploughing	2	2	98	12
Namakkal	Laser spray and micro sprinkler irrigation	2	2	112	38
Namakkal	Drip irrigation in Papaya, Orchard crops	3	3	32	8
Perambalur	Rainwater harvest and moister conservation	1	1	27	5
Ramanathapuram	Rainwater harvesting and recycling	2	2	63	49
Sivagangai	Rainwater harvesting	2	1	2	1
Sivagangai	Percolation ponds and rainwater harvesting structures	3	0	6	2
Theni	Rainwater harvesting	11	7	227	41
Theni	Rejuvenation of borewells	0	2	96	4
Theni	Water conservation	0	108	3240	157
Thoothukudi	Rainwater harvesting	1	1	30	2
Thoothukudi	Mulching, farm ponds, micro irrigation	2	2	62	5
Andhra Pradesh					
Ananthapuram (Kalyandurg)	Farm pond	4	4	80	10
Ananthapuram (Reddipalli)	Rainwater harvesting, soil and water conservation measures	2	0	64	0
Chittoor (Kalikiri)	Training and Method demonstration	2	1	360	8
Guntur (Lam)	Rainwater harvesting	2	4	230	15
Kurnool (Banavasi)	Rainwater harvesting	1	0	310	8
Kurnool (Banavasi)	Rainwater harvesting	2	0	80	6
Prakasam (Kandukur)	Water harvesting through farm ponds, recharge pits , top roof structures	1	0	31	0
Prakasam (Kandukur)	Micro irrigation system in orchard from farm pond	0	1	200	1
Telangana					
Adilabad	Raised bed technology in Cotton + Red gram	0	1	430	22
Adilabad	Raised bed technology in cotton	0	5	82	4
Karimnagar (Jammikunta)	Farm pond	3	1	25	8
Mahabubnagar (YFA)	Watershed management practices	1	1	55	15
Medak (Tuniki)	Rainwater harvesting, farm pond and borewell recharge	2	1	120	0
Warangal (Malyal)	Rainwater harvesting	5	0	658	18
Puducherry					
Karaikal	Rainwater harvesting	2	2	144	4
Karaikal	Rainwater harvesting	1	1	151	4
	Total	**101**	**188**	**9954**	**608**

3.8 Technological Backstopping

The responsibility of technology back stopping, capacity building, monitoring and review of activities of KVKs is vested with Directorates of Extension of Universities (Agricultural, Horticultural, Veterinary and Fishery) of the Zone and also with ATARI. A total of 64 meetings were conducted by Directorates of Extension of Agricultural, Horticultural, Veterinary and Fisheries Universities in the Zone in which 5232 KVK Staff participated.

Table 3.8.1. Details of training programmes and meetings conducted by SAUs and ATARI

SAU/ATARI	No. of meetings	No of participants
ANGRAU, Lam, Guntur	15	1884
PJTSAU, Hyderabad	18	1025
SKLTSHU, Mulugu	1	65
Dr.YSRHU, V.R.Gudem	12	660
PVNRTU, Hyderabad	1	34
TNAU, Coimbatore	12	907
ATARI, Hyderabad	5	657
Total	**64**	**5232**

The Officials of Directorates of Extension of Universities made 104 visits to 57 KVKs to monitor and review the technological interventions and to take stock of the infrastructural facilities available and the constraints faced by the KVKs operating in the jurisdiction of their respective universities.

Table 3.8.2. Details of visit by officials of directorate of extension of SAUs to KVKs

SAU/ATARI	No. of Visits	No of KVKs
ANGRAU, Lam, Guntur	33	25
PJTSAU, Hyderabad	6	4
SKLTSHU, Mulugu	3	1
Dr.YSRHU, V.R.Gudem	9	3
PVNRTU, Hyderabad	5	1
TNAU, Coimbatore	48	23
Total	**104**	**57**

3.9 Agricultural Technology Information Centre (ATIC)

Agricultural Technology Information Centres (ATICs) are functioning in PJTSAU, TNAU and TANUVAS. The ATICs have the responsibility of providing farmers with enhanced access to sources of information related to agriculture and allied sectors and critical technology products like seed, planting material, livestock material and bioproducts. Three ATICs provided technology information, technology products and agro-advisory to 3593, 5136 and 2854 farmers respectively. Two books were sold to 6321 farmers and 3 DVDs on crop production and livestock production technology were sold to 51914 farmers.

Table 3.9.1 Details of visit of farmers to ATICs

Nature of Visit	PJTSAU	TNAU	TANUVAS	Total
Technology Information	502	2617	474	**3593**
Technology Products	34	4586	516	**5136**
Agro-advisory	208	2293	353	**2854**

Critical technology products like seed, planting material, livestock material, poultry and bioproducts were provided to 1106 beneficiaries. Technology services were provided to 2980 farmers during 2022-23.

Table 3.9.2 Details of publications by ATICs

Details	PJTSAU	TANUVAS	TNAU	Total
Books				
Number	1	1	-	2
Number of Copies	8000	12,807	240	21047
Revenue	9,11,400	5,15,000	-	1426400
No. of farmers	6076	245	-	6321
Technical bulletins				
Number	3	-	-	3
Revenue	97,650	-	-	97,650
No. of farmers	1953	-	-	1953
CD/DVD and Video films				
Number	1	1	1	3
Number of Copies	103	26	104	233
Revenue	4120	1000	-	5120
No. of farmers	103	11	51800	51914

Table 3.9.3 Technology products provided by ATICs

Technology products provided	Quantity/Number	No. of farmers benefitted
Seed (q)	713	940
Planting material (No.)	2609	43
Poultry birds (No.)	700	50
Mineral Mixture	374	65
Bio-products (No.)	1.8	8

Table 3.9.4 Technology Services Provided by ATICs

Service rendered	No. of farmers
Agro/Veterinary Advisory Services	363
Farmers visited ATIC	2617

3.10 Success Stories

Thirumalapadi" –a zero burning village in Ariyalur district of Tamil Nadu

Thirumanur block in Ariyalur district of Tamil Nadu comes under Cauvery delta area and is favourable for the cultivation of paddy and Sugarcane. Sugarcane is cultivated over 3100 ha. at Thirumalapadi village. Farmers take 5-6 ratoons of sugarcane and they burn the sugarcane crop stubbles after every harvest to make the field clean and to add fertility to the soil. Nevertheless burning eliminates flora and fauna in soil ecosystem and leads to green house gas emissions. KVK, Ariyalur undertook series of interventions like OFT, FLD, method demonstrations, awareness programmes on the ill effects burning and to make use of microbial decomposers (waste decomposer of NCOF and TNAU bio-mineralizer) for in-situ decomposition of sugarcane trash.

The efforts of the KVK resulted in total avoidance of burning in 1650 ha of area and an average increase of 15.5 % in productivity was recorded due to enhanced fertility of the soil where sugarcane trash was decomposed in-situ. Now the technology is spreadin to neighbouring 5 villages Kulamanikum, Sembiyakudi, Pudukottai, Aranmanikuruchi and Thirumanur in an area of 875 ha.

Burning of sugarcane trash – Arialur, Tamilnadu

Spraying of waste decomposer on sugar cane trash

The fragrance of success – Rosemary cultivation in Erode district of Tamilnadu

KVK, Erode in Tamil Nadu introduced an aromatic crop Rosemary (variety Ooty-1) for the livelihood support of small and marginal farmer in the hamlets located at an elevation of 800 to 1000 MSL. The climate of the area is suitable for Rosemary cultivation and the crop is less to prone to damage by wild animals which is very common in other crops.

Ooty-1 variety released from Horticultural college and Research institute, TNAU, Coimbatore found was more suitable to this region . The variety matures in 6 months initially and later after every 3 months. An average yield of 10-12t/ha was realized and the variety has high high rosemary oil content (0.9 %). The selected progressive farmers were trained on scientific cultivation methods (Land preparation, mulching techniques, drip irrigation methods, post-harvest management) of Rosemary crop and were supported with rooted cuttings by the KVK. Farmers are linked with marketing agencies (Hope inn Nilgiris, Ooty) for technical helpl and marketing tie up. Currently 426 ha areas are brought under cultivation by this variety in Erode district. An additional area of 25 acres of rosemary crop has been expanded with support of NABARD. Farmers are getting an additional income of Rs.80000 to 90000 / Ha through the cultivaton of Ooty -1 variety of Rosemary.

Ooty-1 variety of Rosemary in Erode, Tamil Nadu

Value added millets sustain an FPO Annai Kaveri – Salem, Tamil Nadu

Salem District is well known for its millet production in an area of 1,09,927 with a total production of about 4,07,692 metric tonnes per year. The farmers growing millets in Salem district are only small and marginal farmers and are getting only marginal income because of the involvement of middleman in the supply chain of millets. Hence, the millet growers are motivated to go for producing value added products by KVK, Salem by conducting frequent trainings , demonstrations, entrepreneurship development programmes on value addition to increase their income. The members, Board of Directors and CEO of Annai Kaveri FPO were given technical know how of the value addition technologies of millets and branding, packing and marketing etc., by the KVK. OFT on Zn fortified Bajra and Front Line Demonstration on Ragi ATL 1 were conducted to the farmers of Mecheri and Kolathur blocks. Demonstration on millet cookie preparation with 100 percent ragi, pearl millet and tenai flour without addition of any preservatives were conducted. Multi grain cookies and millet cookies blended with flour of tapioca and banana preparation were also demonstrated to the stakeholders.

Mrs. Rani Murugesan, one of the BODs of Annai Kaveri FPO got organic certification for her 3.5 acre land as per the suggestions of KVK.She won first prize in the "COOKATHAN" event conducted by Indian Institute of Technology – Madras,

Exhibition of products of the FPO, Annai Kaveri

Receiving first prize in Cookathan Competition at IITM, Chennai

RESEARCH PARK, Tharamani. Few women farmers of Anna Kaveri FPO were converted into traditional entrepreneurs for making confectionery and sweets using minor millets and traditional rice under the brand name of **"UZHAVAR MAGAL."** The value added products are fetching an income of Rs.700-800 per kg compared to Rs.60-110 for the grain of the millets.After getting FSSAI licencing, Annai Kaveri FPO is preparing the value added products and supplying to different group meetings including farmer grievances day meeting at District Collectorate, schools, colleges, banks, FIGs and other FPOs etc., The future plan of the FPO is to mechanize the preparation of value added products from millets.

Farmer turs an entrepreneur through oil expulsion- Thiruvarur, Tamil Nadu

Mr. Balamurugun is a graduate and owns 4 acre land in which he cultivates rice, cotton, blackgram and coconut. He observed farmers selling copra for just Rs 50-55 per kg to middlemen who in turn supply copra to oil expeller units. He decided to produce all

Oil expulsion unit of Sri. Balamurugan

types of oils, coconut, gingelly, groundnut, castor etc., by starting an oil expulsion unit. Initially he was getting oils of poor quality due to his lack of knowledge of varieties suitable for oil expulsion and also techniques of handling the expelling unit. KVK, Thiruvarur gave him guidance on different varieties of gingelly, groundnut, coconut suitable for oil expelling and also details of farmers growing those varieties. He underwent training on extraction methods, temperature and moisture content of the produce, additives to be used for more recovery of oil , packaging and marketing guidance was also given. The KVK facilitated him to apply for financial assistance under PMYEGP and he got Rs. 25 lakhs from Tamilnadu Grama Bank. He purchased nine machines for oil expulsion in the new unit. His production increased to 500-800 liters /month. The byproducts like oil cake were made into animal feed and sold for Rs 60/ kg. The quality parameters were tested and there was improvement in labelling and packaging too. Twenty two of his products are listed for sale on the website www.vnba.in . He was honored in the Regional Agricultural Mela 2023 conducted by the KVK.

Grafted brinjal doubles the yield and income- Villuppuram, Tamil Nadu

In Villupuram district, Tamil Nadu brinjal is grown on a large area. It is susceptible to many pests and diseases. Yield loss of brinjal is high due to shoot and fruit borer (*Leucinodes orbonalis* Guenee), sucking pests and wilt. The repeated use of synthetic chemicals and fungicides results in high pesticide residues in the harvested produce and destruction of beneficial insects, increased cost of cultivation. Grafting of high yielding cultivar viz., PLR 2 on drought, pest and disease tolerant rootstock viz., Turkey berry (*Solanum torvum*) was done to provide resistance to wilt. The brinjal grafts of PLR 2 were introduced into farmers' field in Nagar village of Villupuram district and farmers were trained on the cultivation aspects . Through this intervention, farmers gained 91.58 percent increased yield by cultivation of grafted brinjal as suggested by KVK, Villuppuram. There is an ample scope for expansion of this technology to all the brinjal growing tracts of the distict

Cultivation of grafted brinjal – Villuppuram, Tamil Nadu

Particulars	Production (q/ha)	Gross income (Rs./ha)	Net income (Rs./ha)	B:C ratio	Percent increase of productivity over check
Grafted brinjal (PLR 2) using *Solanum torvum* as rootstock	615	933500	476750	2.04	91.58
Brinjal seedlings PLR 2	321	481500	190000	1.65	-

Fish farming made lucrative – KVK, Nagapattinam, Tamil Nadu

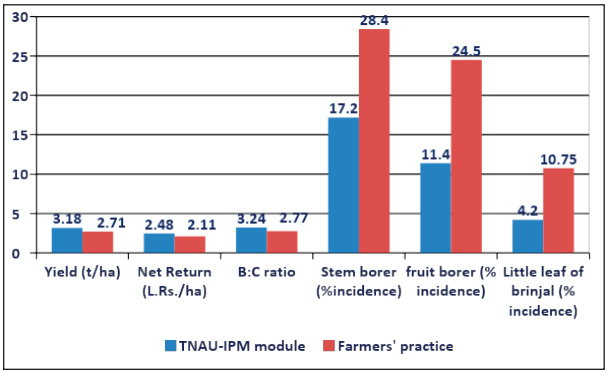
Shri. G. Manikandan, a farmer from Andakudi Village of Nagapattinam District of Tamil Nad, has a passion towards farming since his childhood. He started fish culture in a small farm pond in the 2.5-acre land area available. With the little knowledge he has in fish culture, he stocked the pond with fishes from the wild collected from nearby ponds. Driven by a desire to succeed in fish culture, he visited in Krishi Vigyan Kendra, Nagapattinam and got acquainted with the fisheries experts in the centre and learned new insights about the scope for fish culture. He participated in several training

The fish pond of Manikandan- Nagapattinam

programmes conducted by KVK, Nagapattinam for enhancing his competency in fish culture. In the year 2022, he expanded his fish farm with the funding support through PMMSY from Dept of fisheries, Nagapattinam. He started rearing fishes likes Indian Major carps, Murrels and some improved carp varieties. He purchased hatchlings from nearby fish hatcheries, reared them and sold back to the local farmers who grow fishes in community tanks, public tanks or farm ponds. His income increased two fold over the year and now he is confident in running his farm. He earns an annual income of Rs. 4,00,000 through the fish farm he established and is also able to meet the requirement of fish seed of fellow fish frmers.

Brinjal pests managed through integration of methods- Thiruvallur , Tamilandu

Brinjal is being cultivated in about 452 ha in Tiruvalangadu, Ellapuram, Sholavaram, Kadambathur and R.K.Pet blocks of Tiruvallur district. Ujala hybrid of brinjal is being cultivated in more than 90% of Brinjal cultivated area. Severe incidence of shoot and fruit borer, White fly and Hadda beetle incidence in is observed and 25-30% yield reduction due to shoot and fruit borer incidence has been recorded in Brinjal. Hence the IPM of brinjal was demonstrated by KVK, Thiruvallur to bring down the load of pesticides on the crop and also the cost of plant protection.



Demonstration on integrated pest management module in Brinjal in Selai, Kilambakkam, Pondavakkam villages of Tiruvallur district was conducted with TNAU-IPM Module for pest management in Brinjal involving seed treatment with*B. subtilis* 10 g/ kg; *Soil application of Phosphobacteria* 2 Kg /ha + Neem Cake 100 kg/ac; Maize as border crop; Monitoring with yellow sticky traps (5/ac) and pheromone traps (5/ac); Release of *T. chilonis*(1cc / ac); Shoot clipping; spraying of Azadirachtin 1% (3ml/l) and NSKE 5%; spraying of EPN bacterial (*Xenorhabdus*) toxin formulation @ 1 ml /lit on 30, 60 and 90 DAT.

Sri. Rajendran from Kilambakkam village practicing IPM practices in brinjal obtained yield of 318.50 quintal per hectare (17.31 % increase) due to reduction in shoot and fruit borer incidence over farmer's practice. Net income of Rs.2.28 lakh (38.25 % increase over control) with BCR 3.10 was recorded in demonstration plots and 2.21 in control plots. Reduction in stem borer and fruit borer incidence was 32.2% and 54% over control respectively. The results revealed that there are possibilities of increasing productivity and profitability of brinjal with adoption of improved IPM module in Tiruvallur.

Traditional rice brings fame to a natural farmer

Mr. A.Devarajan, aged 73, a marginal farmer owning 3.5 acres of land in Chinnakavanam village, Tiruvallur district of Tamil Nadu is engaged in farming for the last 10 years experimenting innovative ways of cultivation of traditional rice varieties collected from various parts of Tamil Nadu and also from various states in India. He is a certified organic farmer, a social cosmopolite, busily engaged himself in meeting farmers and promoting traditional rice varieties among farmer

Sri. Devarajan with his traditional rice variety

in the state. Besides, he has networked with a group of traditional rice growers in the state and provides seeds to interested farmers willing to cultivate traditional rice. KrishiVigyan Kendra, Tiruvallur facilitated him to cultivate traditional paddy in System of Rice Cultivation (SRI) method and helped him in following organic cultivation methods.He has attained an average productivity of 1200-1500 kg / acre.He processes and sells traditional rice @ Rs.80/ kg through direct selling to customers. He also sells traditional paddy seeds @ Rs.100/ kg. He earns a net income of Rs.37,600/ acre with a BCR of 1:2.88. He was awarded with "Velan Chemmal award" by TNAU he received it from Hon'ble Minister of Agriculture & Farmers Welfare, Govt. of Tamil Nadu during 2022 for his contribution in agriculture and he was also a recipient of District best farmer award from District Collector, Tiruvallur and is recognized by KVK Tiruvallur as master trainer for Natural Farming.

Foxtail millet as preceding crop to bengalgram – Anantapur, Andhra Pradesh

Sri. G. Sreenivas of Gannevaripalli village of Tadipatri mandal was growing only bengalgram during *Rabi* season keeping *kharif* as fallow under the rainfed conditions. By keeping *kharif* season as fallow he was facing weed problem, soil loss by wind and water erosion. He was introduced with the cropping system of fox tail millet in kharif followed by Bengalgram in rabi which was successfully tested by RARS, Nandyal. This was possible with the introduction of short duration fox tail millet variety SiA-3222 and Bengalgram variety NBeG-452 which have higher yield potential. KVK Anantapur (reddipalli) provided critical inputs like seeds and acquainted Sri. G. Sreenivas about the production technology. This gave Srinivas an additional yield of 10 to 12 q of fox tile millet along with normal yield of Bengal gram. Thus he got an additional income of about Rs.18000/ha. After seeing the results in the field of Sri. G. Sreenivas about 100 farmers in Gannevaripalli village started cultivation of fox tile millet preceding Bengal gram in kharif.

KVK staff visit to fox tail millet (SiA-3222) field

KVK staff visit to bengalgram NBeG-452 field

Mushroom production – A source of livelihood to rag pickers

Mrs. Ruthu, 20 year old resident of Ippatam village of Mangal giriMandal in Gunturu district collects waste materials and sells it for her livelihood. She was trained in mushroom production at

Krishi Vigyan Kendra, Lam, Guntur. Krishi Vigyan Kendra, lam, Guntur, helped her to establish mushroom production unit with the support of ATMA and DBRC. Initially, she started producing Milky mushroom cultivation in small scale by getting spawn from KVK. After getting experience she expanded the unit and now she is producing about 8 kg mushrooms per day and selling in local markets. She is earning about 35000 per month with this enterprise. Now she is able to train women of her neighbourhood in mushroom production and encouraged another 3 members to establish mushroom units.

Ms.Ruthu with her mushroom unit

Prevention of sub-clinical mastitis in Buffalos

Mastitis is one of the economically important diseases of cattle. Every year atleast 37% of the cattle (black cattle) are affected by mastitis in Sannapalle village of Khajipeta mandal under YSR District. In Sub clinical mastitis slight inflammation of Mammary gland is noticed if this progresses without any further care and management lands up in mastitis.

KVK, Utukur has taken up this issue and educated farmers and awareness was created about the subclinical mastitis and their affects on animal health, production and economic loss. Method demonstrations were conducted regularly on diagnosis of sub-clinical mastitis in buffaloes with SFMT reagent, using 3% Surf solution standardised by State Animal diseases diagnostic Laboratory, SVVU, Tirupati. After testing milk samples of the buffellows of the village it was diagnosed that 19% of the animals (15 no.) were found to be positive with Sub clinical mastitis. Irrespective of the diagnosis all the 80 animals were made to use post dip solution containing 20% Povidone Iodine and aloevera gel, with the usage of post dip solution twice a day after milking 63% of animals (9 no.) of the animals didn't progress to further clinical stage, remaining 37% (6 n0.) of the animals showed very mild symptoms like less udder inflammation without production losses or any any other udder related issues. Trial was conducted for a period of 90 days, This simple practice had shown a very positive result in reducing sub clinical mastitis. With this intervention it was found that 83% of the animals are not landing into clinical stage of mastitis, and now farmers are procuring Post dip solution on cost basis on their own from pharmacies and also spreading this technology to adjacent villages.

Awareness camp on managing mastitis

Diversified enterprises bring prosperity in life – Kurnool, Andhra Pradesh

Sri. D. Chandra Sekhar Reddy, aged 48 years is a resident of Yerragudi village (Banaganapalle mandal, Nandyal district.) having 4.0 ha irrigated land. He used to produce paddy and maize crops in his total land of 4.0 ha along with a buffalo unit

Pomegranate cultivation

Mulbery crop and sericulture unit

of 5 animals. He was motivated by KVK Kurnool (Yagantipalli) to diversify his farm for doubling the income. He was trained to take up red gram, pomegranate and sericulture activities. With the continuous support of the KVK he diversified 3 acres to pomegranate, 2 acres to sericulture and 2 acres to red gram. With these new crops and recommended production technologies he was able to increase his income from Rs. 230000 to Rs. 1126000 per annum.

Raised bed method of Cotton Cultivation: KVK Adilabad

Mesram Maruthi is an active farmer from the Sakinapur village of Talamadugu mandal district of Adilabad. He has been into farming for more than 20 years now. Cotton is the major crop he is cultivating under rainfed conditions. Due to erratic and heavy rainfall, his cotton crop is facing inundation, terminal stress and increased pest and disease incidences leading to yield loss. Raised bed method of cotton cultivation is a climate resilient technology which was demonstrated in the farm of KVK Adilabad during 2021-22. Mr. Maruthi is one among the farmers, who visited the demonstration and got impressed with the technology and was interested to adopt it in his field. KVK scientists visited his farm and provided all the details about how to carry out raised bed method of cotton cultivation. He took up this technology in his one acre cotton field. By adopting this technology his cotton crop was able to withstand inundation and

Intervention	Yield kg/ha	Cost of Cultivation (Rs/ha)	Gross Returns (Rs/ha)	B:C Ratio
Raised Bed	2750	70510	175450	2.49:1
Flat bed	2000	64247	127600	1.99:1

Cotton on raised beds

Visit of KVK Scientists to the farmer

have better drainage during heavy rains and there was low pest and disease incidence. He was able to harvest 27 percent more cotton compared to traditional technique of flatbed method.

Women entrepreneur in Honey bee Keeping-Kothagudem, Telangana

Bhadradri Kothagudem is a tribal district and has a good forest cover. It has good scope for honey bee rearing in the tribal belts and with the awareness and training of KVK, Bhadradri Kothagudem many people have taken up the Apiculture. Smt. Srilatha Reddy, along with her husband has been involved in honey bee rearing. She was trained at KVK, Bhadradri Kothagudem in Scientific bee keeping.

With the encouragement and guidance provided by KVK Bhadradri Kothagudem she scaled up the already existing bee keeping unit to 80 boxes. She is producing about 3 quintals of honey annually. She branded their "Honey" with an upgraded packing which is attracting a huge demand in the market. She is the recipient of district Best Women farmer award from the district magistrate during 2022

The Apiculture unit of *Srilatha Reddy*

Organic Leafy Vegetable Cultivation under Poly house

M/s PP Raju farm of Shri G Ramu is situated in Ponnala village of Shameerpet Mandal of Medchal district. He used to cultivate flower crops in 3 acres under polyhouse. Due to low market demand and perishable nature of flowers he used to get losses. KVK, Tuniki guided and encouraged him to grow vegetables in organic farming. KVK, demonstrated him the process of producing organic leafy vegetables in polyhouse. Over the period of 3 cycles

of leafy vegetables production he got experience in organic cultivation and extende the production to 1500 sq.m area. He is producing 4 to 5 tons of leafy vegetables per month and supplying to organic stores in Hyderabad. From this he is getting a net income of about 15, 12, 000 per year. He is also providing livelihood for 6 labourers for 1728 man days.

Millets women group

Inspired by the skill training programmes on value addition of millets conducted by KVK, Kampasagar eleven rural women of Srinivasnagar (V), Miryalaguda (M), Nalgonda (Dist.), Telangana State formed into a group to harnas the demand for millet products in the market. These women were

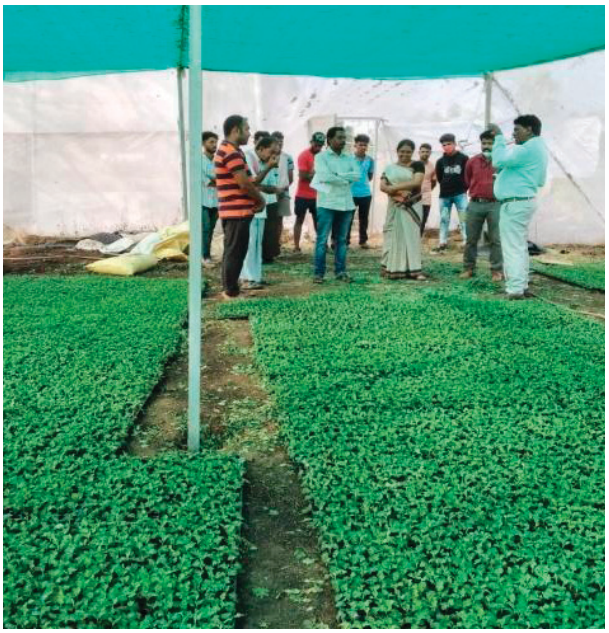
motivated and trained on preparation of value added products of Millets under ARYA Project at KVK, Kampasagar. The women group started an enterprise in 2020 by the name "Srinivasnagar chiridhanyala utpatthulu" and started producing and supplying millets products viz., biscuits, Laddus, Cakes, Murukulu etc. Initailly, they sold their products to the near by schools and displayed their products at various meetings and Kisan Melas organised at KVK, Kampasagar. Now they are selling at their own outlet and supplying on order basis and successfully running the unit. The group earning on an average a Net Income of Rs. 62,000 per Month.

Shade net nursery by Rural Youth group

G.K thanda (Amapalem) village of Thourur Mandal is about 55 km far from Krishi Vigyan Kendra (KVK), Malyal, Mahabubabad district. The farmers of this village are growing chilli and vegetables crops and depends on the nearest market for seedlings. Gugulothu Ramesh is a post graduate (M.Tech) unemployed youth from village of G.K thanda (amapalem) village. As there is no nursery in the village and the demand for seedlings is high, he formed a group with another four unemployed youth of the village to produce nursery on commercial basis.

KVK malyal provided technical guidance and financial support for establishing shade net nursery under ARYA project. Skill training on shade net nursery was provided in the year 2019. After the skill training was completed, site selection was done and necessary inputs were provided for construction of shade net in the village.

Initially they started growing chilly nursery and sold 1.5 lakh chilli nursery plants with in span of three months and earned 3 lakhs. With this response they added producing chrysanthemum cuttings and earned another Rs.4 lakhs. Later they extended the seedling production to tomato and Brinjal crops also. Now, this group (5 members) has emerged as one of the successful entrepreneurs among the youth in shade net nursery enterprise under ARYA project and earning betweenRs.6, 00,00 to Rs.6, 50, 000 annually.



4. Special Projects

4.1 Farmer FIRST Programme (FFP)

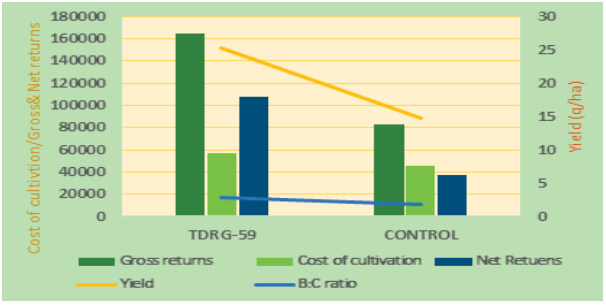
The Farmer FIRST Programme (FFP) was conceived and implemented by Indian Council of Agricultural Research (ICAR) to involve the practicing farmers for research problem identification, prioritization and to conduct experiments in farmers field utilizing the resources available with the farmers to privilege the smallholder agriculture operating in complex, diverse and risk prone situations through enhancing farmers-scientists interface. It is a farmer centric approach for research problem identification, prioritization and conduct of experiments and their management in farmer's conditions. The focus is on farmer Farm, Innovations, Resources, Science and Technology (FIRST). Two terms 'enriching knowledge' and 'integrating technology' qualify the meaning of Farmer FIRST in Indian context. The project is undertaken covering four major components *viz.,* a. Enhancing Farmer-Scientist Interface, b. Technology Assemblage, Application and Feedback c. Partnership and Institution Building and d. Content Mobilization. Farmer First Programme (FFP) has been implemented by Four ICAR institutes (IIMR, IIOPR, IIOR and CRIDA) and one University (TANUVAS, Chennai) under ATARI, Hyderabad.

Table 4.1.1 Details of technologies demonstrated

Module	No of technologies/interventions	Area covered (ha) / No of animals	No of households involved
Crop-based Module	29	2094	1769
Horticultural module	7	154	475
Livestock module	33	7775	1935
NRM Module	12	2490	2190
Enterprise module	2	-	220

The Farmer FIRST centres undertook 83 interventions covering 4738 ha area and 6589 households in the operational villages. Among the various kharif jower varieties demonstrated by ICAR-ICAR-IIMR, the performance of CSH 41 was better with 35% yield improvement over the local cultivar. Similarly SiA 3084 variety of foxtile millet, GPU 67 of finger millet, HHB 272 of pearl millet, VL 207 of barnyard millet , DHLM 36-3 of little millet and WRGE 97 variety of redgram also out performed their counter parts cultivated by the farmers. Similarly new improved red gram variety WRG-97 introduced by ICAR-CRIDA also proved to yield better than the farmers' practice. Non-shattering rice variety KNM-118 introduced by ICAR-IIOR during *kharif* season led to productivity enhancement of 12 per cent over the prevailing variety MTU 1010) resulting in an additional net returns of Rs.10870 / ha.

Field view of CSH 41: introduced by ICAR-IIMR



Performance of Redgram variety TDRG 59: ICAR-CRIDA

IIOPR demonstrated weather based irrigation scheduling, fertigation, Integrated pest management, Integrated disease management and mechanization of harvesting in oil palm. An extent of 40040-45760 liters of water /ha/day could be saved by adopting Weather based irrigation scheduling which was successfully adopted by 6 adjoining villages surrounding to FFP villages. ICAR-IIOPR also demonstrated vermicomposting and mulching of Oil palm dry matter with the help of chaff cutter.

ICAR-ICAR-IIOPR:Demonstration and distribution of turbo sprayers for pest management in oil palm

ICAR-CRIDA demonstrated micro sprinklers, micro irrigation drip systems with scheduled fertigation for vegetable crops and portable rain gun system for field crops for effective utilization of harvested water. Soil samples were also collected, analysed for soil fertility status in 100 farmers' fields and Soil Health Cards were prepared and distributed. ICAR-IIOR ssuccessfully demonstrated contour cultivation in groundnut and redgram for increased yields through conservation of soil and water.

Under farm mechanization ICAR-CRIDA demonstrated 9 – Row planter for sowing maize, redgram + maize and bengal gram. Similarly, Power Weeder and Brush Cutter were also demonstrated to reduce drudgery by TANUVAS and ICAR-CRIDA

Improved strains of backyard poultry was popularized by TANUVAS, ICAR-IIMR and ICAR-CRIDA to ensure nutritional security and additional income. Similarly Nellore goat breed was popularized by ICAR-IIMR while Tellicherry breed was introduced by TANUVAS. Quail rearing and Turkey rearing were successfully demonstrated as Alternative Poultry farming by TANUVAS.

Two row power weeder : TANUVAS

4.2 National Initiative on Climate Resilient Agriculture (NICRA)

The technology demonstration component (TDC) of the project National Initiative on Climate Resilience Agriculture has been implemented since 2011 to demonstrate the potential of technologies to impart resilience to Indian agriculture and to enhance the adaptive capacity of the farmers to climatic variabilities. During the year 2022, 8 KVKs of zone X (Srikakulam, Kurnool (Yagantipalli) and Anantapur (Reddipalli) of Andhra Pradesh, 1 KVK of Telangana (Adilabad), 3 KVKs of Tamil Nadu (Ramnad, Villuppuram I and Perambalur) and 1 KVK of Puducherry (Karaikal) implemented TDC-NICRA. As per the new directive of the high level project committee, the KVKs divided the NICRA villages into farming system typologies and demonstrated technology packages selecting technologies from NRM, crop and livestock production modules to address the soil, water , crop and weather related constraints faced by each of the farming system typology. The technology packages were grounded at household level and impact of the same was recorded against a baseline collected earlier. The KVKs conducted 326, 1469,720 and 379 demonstrations benefitting 1396, 2063, 683 and 476 farmers under NRM, crop, livestock and institutional interventions modules respectively. A total of 128 q of seed and 4805 numbers of fodder slips were supplied to the needy farmers through seed and fodder bank respectively. The KVKs also conducted 66 capacity building programs and 123 extension activities benefitting 2534 and 3776 farmers respectively for bringing awareness on the potential of climate resilient technologies and for enhancing the climate literacy of the clientele.

Table 4.2.1 Natural Resource Management : Interventions taken up in farming system typologies during the year 2022-23 .

Name of the KVK	No. of Demonstrations/ Interventions	Farmers covered	Area covered (ha)
Kurnool(Yagantipalli)	25	10	25
Anantapur(Reddipalli)	3	60	32
Srikakulam	2	40	55
Adilabad	38	38	15.2
Ramanathapuram	82	82	82
Karaikal	30	30	12
Villupuram -1	137	1046	58.4
Peramblur	9	90	54.08
Total	**326**	**1396**	**333.68**

Table 4.2.2 Crop Production Interventions taken up in farming system typologies during 2022-23

Name of the KVK	No. of Demonstrations/ Interventions	Farmers covered	Area covered (ha)
Kurnool(Yagantipalle)	225	225	103.2
Anantapur(Reddipalli)	9	235	80
Srikakulam	36	404	170
Adilabad	270	270	108
Ramanathapuram	624	624	623
Karaikal	93	93	19.7
Villupuram -1	212	212	73
Peramblur	0	0	0
Total	**1469**	**2063**	**1176.9**

Table 4.2.3 Livestock and Fisheries Interventions taken up in farming system typologies 2022-23

Name of the KVK	No. of Demonstrations/ Interventions	Farmers covered	No. of animals covered	Area covered (ha)
Kurnool(Yagantipalle)	160	160	160	0
Anantapur(Reddipalli)	380	109	2360	0
Srikakulam	22	78	100	0
Adilabad	3	181	549	0
Ramanathapuram	85	85	5540	25
Karaikal	60	60	248	0
Villupuram -1	10	10	25	0.2
Peramblur	0	0	0	0
Total	**720**	**683**	**8982**	**25.2**

Table 4.2.4 Institutional Interventions taken up during the year 2022-23

Name of the KVK	Performance of custom hiring center		Performance of seed bank		Performance of fodder bank	
	Farmers covered	Area covered (ha)	Farmers covered	Quantity of seed (t)	Farmers covered	Quantity of fodder seed/ slips supplied
Kurnool(Yagantipalli)	60	57	11	7.5	16	165
Anantapur(Reddipalli)	6	8.2	0	0	0	0
Srikakulam	100	60	5	120	10	1000
Adilabad	185	204	30	0.5	0	0
Ramanathapuram	0	0	0	0	25	3640
Karaikal	0	0	0	0	0	0
Villupuram -1	0	0	0	0	0	0
Peramblur	9	6	0	0	0	0
Total	**360**	**335.2**	**46**	**128**	**51**	**4805**

Table 4.2.5 Capacity Building

Name of the KVK	No. of training programmes	Number of beneficiaries
Kurnool(Yagantipalli)	13	258
Anantapur(Reddipalli)	5	131
Srikakulam	9	377
Adilabad	5	170
Ramanathapuram	11	330
Karaikal	9	311
Villupuram -1	10	854
Peramblur	4	103
Total	**66**	**2534**

Table 4.2.6 Extension activities

Name of the KVK	No. of training programmes	Number of beneficiaries
Kurnool(Yagantipalli)	12	912
Anantapur(Reddipalli)	49	138
Srikakulam	4	1590
Adilabad	2	78
Ramanathapuram	2	100
Karaikal	18	599
Villupuram -1	7	67
Peramblur	29	292
Total	**123**	**3776**

The TKM 15 Rice variety with drought tolerance and suitable for semi-dry cultivation was demonstrated as FLD by KVK Tiruvallur in my field during 2022 .It yielded 62 q / ha with 32% yield advantage and tolerane to pests and diseases.

Mr. Janakiraman
Beemareddiyur, Tiruvallur Dist. TN

Evidences of successful application of resilient technologies

Crop Diversification with castor

Continuation monocropping with groundnut led to low and variable productivity of groundnut in the Anantapur district of Andhra Pradesh. KVK, Anantapur (Reddipalli) introduced castor as an alternative crop to groundnut in rabi in rainfed alfisols. The castor variety ICH-66 was introduced to compare its performance with the groundnut variety K-6. The performance is depicted in the following table.

Table 4.4.7 Performance of the castor variety ICH-66

Particulars	ICH–66	Groundnut K-6
Pod yield (kg/ha)	1150	712
Haulm yield (kg/ha)	-	879
Cost of cultivation (Rs/ha)	23540	28480
Gross returns (Rs/ha)	69000	16487
Net returns (Rs/ha)	45460	11993
B:C ratio	2.93	1.72

During *kharif*, 2022-23, the diversified crop, Castor (Variety , ICH-66) recorded highest B:C ratio and net returns when compared with the traditional of groundnut.

Castor (ICH-66) at East Narasapuram village in Anantapur district

Growing cotton on raised bed, an in-situ moisture conservation and excess moisture management strategy – KVK, Adilabad, Telangana

Cotton is a major crop in Adilabad district with an area of four lakh acres. Farmers cultivate cotton under rainfed farming. Annual rainfall of the district shows an increasing trend. Climate variability is causing crop damage in the form of inundation, terminal stress and increased pest and disease incidences, which lead to yield loss. KVK, Adilabad demonstrated the climate resilient technology, growing cotton on raised beds with a height of 15cm and followed spacing of 150 X 45 cm.

Table 4.2.8 Performance of raised bed method of cotton cultivation

Interven-tion	Yield kg/ha	Cost of Cultivation (Rs/ha)	Gross Returns (Rs/ha)	B:C Ratio
Raised Bed	2750	70510	175450	2.49:1
Flat bed	2000	64247	127600	1.99:1

Adoption of Raised bed system provides better drainage during heavy rains, minimizes crop loss, enables better crop growth, provides good aeration and ensures low pest and disease incidence and improves yield and economics of the farmers. Awareness was created among AEOs on this technology for wider adoption in the future.

Raised bed cultivation of cotton – KVK, Adilabad, Telangana

Performance of seed bank for making seed of climate resilient varieties available – an institutional intervention by KVK, Kurnool (Yagantipalli)

Quality seed of climate resilient crop varieties is an important basic input for sustaining productivity of crops during climatic stress. The existing mechanisms are not adequate to meet the seed requirements of small-scale farmers and have serious limitations. The concept of village seed banks was promoted and successfully validated in the adopted NICRA village by KVK, Kurnool (Yagantipalli). This intervention not only ensured timely availability of quality seed of farmer-preferred varieties at affordable prices at local level but also enhanced crop productivity. During kharif 2022-23, seed production of redgram (PRG-176) , foxtail millet (SIA-3088) and bengalgram (NBeG-49) was taken up to establish seed bank in the village.

Table 4.2.9 Performance of the seed bank

Crop	Number of farmers involved	Area (ha)	Quantity of seed produced (t)	Fund realized from sale of seed from the bank (Rs.)
Setaria SIA-3088	04	1.8	2	30000
Redgram (PRG-176)	02	1	1.5	12000
Bengal gram	05	2	4	35000

Success story of a climate resilient intervention

Soybean - Bengal gram sequence cropping in rainfed black soils of Kurnool district of Andhra Pradesh

Domain of the study : In black soils of Kurnool and Nandyal districts of Scarce rainfall zone generally fallow-Bengalgram or fallow-Jowar and fallow- blackgram is being taken during rabi (September - October) in an area of 3.02 lakh ha. The productivity levels of these crops is low due to mono-cropping, intermittent dry spells and terminal moisture stress resulting low net returns/ha .

Activities implemented by KVK: Organized Demonstrations on Soybean – Bengalgram sequence under rainfed situation in black soils in order to increase cropping intensity, productivity and net returns/ha in drylands. After assessment of technology for two years, results of the technology are considered for large scale adoption in the district. In order to create awareness on double cropping, three trainings were conducted to farmers, RBK staff and extension personnel.

Table 4.2.10 Results of Soybean - Bengal gram sequence crop

Particulars	Yield Kg/ha	Cost of cultivation	Gross returns Rs/ha	Net returns Rs/ha	BC ratio
Soybean-Bengalgram	1682-1845	89687	181885	92198	1:2.0
Bengalgram	2050	66850	108650	41800	1:1.62

Soybean crop being of short duration fits well in double cropping sequence under rainfed situation in black soils. In order to increase net returns and cropping intensity, Soybean- Bengal gram can be successfully grown in rainfed black soils, subject to the onset of monsoon in time.

4.3. Attracting and Retaining Youth in Agriculture (ARYA)

Attracting and Retaining Youth in Agriculture (ARYA), a project launched by agricultural extension division of ICAR during March 2015 aims to create interest and confidence among rural youth in agriculture by demonstrating the potential of enterprises based on agriculture and allied sectors to be profitable and reliable sources of livelihood in rural areas. This endeavor is expected to result in rural youth being retained in villages and prevention of migration of youth to urban areas in search of livelihood realizing the importance of youth in agricultural development. The main objectives of the project are to attract rural youth to take up various agriculture, allied and service sector enterprises, to enable youth to establish net work groups to take up capital and resource intensive activities like processing, value addition and marketing and to demonstrate linkages with different stake holders for sustainable development of youth. This is envisioned to be achieved through imparting skill training to youth with the right aptitude to be self-reliant and facilitating establishment of enterprise units either singly or in groups by providing necessary critical inputs both general and capital. Skill development of rural youths will help in improving their confidence levels and encourage them to pursue farming as profession, generate additional employment opportunities to absorb under employed and unemployed rural youth in secondary agriculture service-related activities in rural areas. The concurrent monitoring, evaluation and mid-term correction will be an integral part of project implementation. ARYA has been implemented by three KVKs in Zone 10 *viz*., Nellore in Andhra Pradesh, Nalgonda (Kampasagar) in Telangana and Kanyakumari in Tamil Nadu since 2015-16 and additional seven KVKs *viz*., West Godavari (V R Gudem), Kadapa, Warangal (Malyal), Dharmapuri, Sivagangai, Erode and Puducherry were sanctioned during 2018-19.

A total of 92 trainings were conducted on various enterprises viz., Apiary, Bio Inputs Production, Dairy, Fishery, Goat and sheep farming, IFS, Mushroom production, Nursery management, Poultry, Value Addition and Vermicompost production by ARYA KVKs in which 1873 youth were trained (Table 4.3.1). Out of them, 612 youth have established 283 enterprise units. State, KVK and enterprise wise trainings conducted, youth trained, and enterprises established are furnished in Table 4.3.2. Maximum number of 406 youth were trained on value addition, which includes fruit and vegetable preservation and value-added products, millet-based value added products, bakery, value added products from banana and coconut. A total of 173 youth have established 22 enterprises in value addition.

Table 4.3.1. Enterprise wise youth trained and enterprise established in ARYA project

Enterprise	No. of Trainings	No. of Youth trained	No of Youth established units	No. of enterprises established
Apiary	8	182	53	19
Bio Inputs Production	2	112	7	1
Dairy	2	35	8	4
Fishery	5	50	5	5
Goat and sheep farming	2	57	21	3
IFS	4	80	63	63
Mushroom production	6	232	30	11
Nursery management	8	221	33	15
Poultry	18	175	152	113
Value Addition	21	406	173	22
Vermicompost production	16	323	67	27
Total	**92**	**1873**	**612**	**283**

Table 4.3.2. KVK wise youth trained, and enterprise established in ARYA project

State/KVK/Enterprise	No. of Trainings	No. of Youth trained	No of Youth established units	No. of enterprises established
Andhra Pradesh				
Nellore				
Mushroom production	2	98	10	6
Nursery management	2	50	5	5
Value addition	2	26	7	2
Vermicompost production	2	60	30	6
Total	**8**	**234**	**52**	**19**
West Godavari (VR Gudem)				
Apiary	1	20	13	10
IFS	3	50	50	50
Poultry	4	60	60	60
Value addition	7	131	45	3
Total	**15**	**261**	**168**	**123**
Kadapa (Utukur)				
Dairy	2	35	8	4
Mushroom production	1	25	4	2
Nursery management			6	3
Value addition	1	30	3	
Vermicompost production	2			
Total	**6**	**90**	**21**	**9**
Total (AP)	**29**	**585**	**241**	**151**
Telangana				
Nalgonda (Kampasagar)				
IFS	1	30	13	13
Nursery management	1	30		
Value addition	1	30		
Vermicompost production	1	30	8	8
Total	**4**	**120**	**21**	**21**
Warangal (Malyal)				
Apiary	1	25	20	
Nursery management	1	25	15	1
Poultry	1	25	25	4
Value addition	1	25	25	4
Total	**4**	**100**	**85**	**9**
Total (TS)	**8**	**220**	**106**	**30**
Tamil Nadu				
Dharmapuri				
Goat and sheep farming	1	32	21	3
Mushroom production	1	30	6	2
Nursery management	1	30	1	1
Value addition	1	30	2	2
Total	**4**	**122**	**30**	**8**
Sivagangai				
Fishery	5	50	5	5
Nursery management	3	86	6	5
Poultry	10	50	25	25
Vermicompost production	6	50	12	2
Total	**24**	**236**	**48**	**37**
Kanyakumari				
Apiary	3	64	12	1

State/KVK/Enterprise	No. of Trainings	No. of Youth trained	No of Youth established units	No. of enterprises established
Mushroom production	2	79	10	1
Poultry	1	18	20	2
Value Addition in Banana	2	29	20	5
Value Addition in Coconut	3	40	11	3
Vermicompost production	2	68	5	5
Total	**13**	**298**	**78**	**17**
Erode				
Apiary	3	73	8	8
Bio Inputs Production	2	112	7	1
Poultry	2	22	22	22
Value Addition	3	65	60	3
Vermicompost production	3	115	12	6
Total	**13**	**387**	**109**	**40**
Total (TN)	**54**	**1043**	**265**	**102**
Puducherry				
Puducherry				
Goat and sheep farming	1	25		
Total	**1**	**25**		
Grand Total	**92**	**1873**	**612**	**283**

Mini cage for backyard poultry enterprise
KV Sivagangai (TN)

Mushroom enterprise
KVK Kadapa (Utukur) (AP)

Honey enterprise
KVK Kanyakumari (TN)

Mushroom enterprise
KVK Kanyakumari (TN)

Vermicompost Enterprise
KVK Erode (TN)

Fruit processing enterprise
KVK West Godavari (VR Gudem) (AP)

4.4 Cluster Frontline Demonstrations on Pulses under NFSM

CFLDs on pulses programme was implemented by 66 KVKs in the Zone during 2022-23 *kharif*, *rabi* and summer seasons in Tamil Nadu, Andhra Pradesh, Telangana and Puducherry. A total of 7076 demonstrations were conducted in 3060 ha on blackgram, greengram, redgram and Bengal gram (Table 4.4.1). The demonstrations were conducted in cluster approach with small and marginal farmers and weaker sections. Latest improved varieties released and notified by Central Varietal Release Committee within the past 10 years, crop production and protection technologies, bio-fertilizers, bio-pesticides, micro-irrigation were demonstrated. KVKs in Tamil Nadu conducted 2522 demonstrations on blackgram (375), greengram (250), redgram (125) in *kharif*, blackgram (1047), greengram (450) and Bengal gram (100) in *rabi*; blackgram (175) in summer seasons in 1010 ha area. KVKs in Andhra Pradesh conducted 951, 1769 and 113 demonstrations in 430, 790 and 50 ha, during *kharif* and *rabi* and summer seasons, respectively. KVKs of Telangana conducted 649, 772 and 200 demonstrations in 286, 354 and 100 ha area during *kharif*, *rabi* and summer seasons, respectively while KVKs in Puducherry conducted 100 demonstrations in 40 ha. Season-wise and Crop-wise number of demonstrations and area are furnished in Table 4.4.1.

Table 4.4.1. Crop wise achievement of CFLDs on Pulses in 2022-23

Crop	Tamil Nadu			Andhra Pradesh			Telangana			Puducherry			Zone		
	Area (ha)		Demo (No)	Area (ha)		Demo (No)	Area (ha)		Demo (No)	Area (ha)		Demo (No)	Area (ha)		Demo (No)
	T	A		T	A		T	A		T	A		T	A	
Kharif															
Blackgram	150	150	375	90	90	200	0	0	0	-	-	-	240	240	575
Greengram	100	100	250	120	120	273	36	36	60	-	-	-	256	256	583
Redgram	50	50	125	220	220	478	260	250	589	-	-	-	530	520	1192
Total *Kharif*	**300**	**300**	**750**	**430**	**430**	**951**	**296**	**286**	**649**	**-**	**-**	**-**	**1026**	**1016**	**2350**
Rabi															
Blackgram	470	420	1047	390	390	844	100	100	227	20	20	50	980	930	2168
Greengram	180	180	450	200	200	493	94	94	208	20	20	50	494	494	1201
Bengalgram	40	40	100	220	200	432	170	160	337				430	400	869
Total *Rabi*	**690**	**640**	**1597**	**810**	**790**	**1769**	**364**	**354**	**772**	**40**	**40**	**100**	**1904**	**1824**	**4238**
Summer															
Blackgram	50	70	175	0	0	0	40	40	75				90	110	250
Greengram	10	0	0	50	50	113	60	60	125				120	110	238
Total Summer	**60**	**70**	**175**	**50**	**50**	**113**	**100**	**100**	**200**				**210**	**220**	**488**
Grand Total	**1050**	**1010**	**2522**	**1290**	**1270**	**2833**	**760**	**740**	**1621**	**40**	**40**	**100**	**3140**	**3060**	**7076**

T=Target, A=Achievement)

Performance of pulses varieties and technologies under CFLD Pulses (Tables 4.4.2 and 4.4.3)

Tamil Nadu

Blackgram

Blackgram varieties VBN 8, VBN 10 and VBN 11 were demonstrated during kharif, rabi and summer seasons (Table 3.16.2). The average yields recorded by VBN 8 in demo plots were 8.34 q/ha in kharif 7.72 q/ha in Rabi and 4.79 q/ha in summer wherein the increase in yield over check varieties were 20.69, 24.72 and 20.96 per cent, respectively. In Kharif, rabi and summer seasons variety VBN 11 showed average yields of 37.29, 27.42 and 12.78 percent over check varieties, respectively. Variety

VBN 10 recorded average yield of 9.17 q/ha over 7.18 q/ha in check variety in summer. Among the varieties, VBN 11 gave the highest yield of 9.52 q/ha in Villupuram district (Table 3.16.3).

Greengram

Greengram varieties CO 8, VBN 4 and MH 421 were demonstrated during the *kharif* and *rabi* seasons. During the *kharif* season CO 8 variety recorded an average yield of 8.84 q/ha as against 7.52 q/ha in check plots. In *rabi* season, the average yield recorded by CO 8 was 7.50 q/ha as compared to check yield of 5.38 q/ha. The highest yield of 8.84 q/ha was recorded in Erode district during kharif and 8.60 q/ha in Kancheepuram district during Rabi season. VBN 4 recorded an average yield of 8.68 q/ha over 6.36 q/ha in check variety in during kharif and 5.31 q/ha as against 4.16 q/ha in check during rabi season. The highest yield of 9.67 q/ha was recorded in Madurai district. Variety MH 421 demonstrated in Namakkal district recorded an average yield of 9.26 q/ha over 5.95 q/ha with 27.64 percent.

Redgram

Redgram variety CO 8 and LRG 52 were demonstrated in Karur and Krishnagiri districts during kharif season where the average yield was 5.12 and 14.71 q/ha as against 4.05 and 12.20 q/ha in check.

Bengal gram

Varieties NBeG 49 and NBeG 452 were demonstrated in Coimbatore and Dharmapuri districts where the average yields were 11.72 and 18.06 q/ha, respectively (13.46 and 13.94 per cent higher than check varieties, respectively).

Andhra Pradesh

Blackgram

Variety TBG 104 was demonstrated during kharif and rabi seasons with an average yield 15.61 and 14.08 q/ha as against 12.53 and 11.83 q/ha in check varieties, respectively. In Rabi Season, varieties GBG1, LBG 752, LBG 787 and TBG 104 were demonstrated where in the yields were 21.24, 35.06, 35.06 and 19.02 per cent higher than the check varieties. Among the varieties, TBG 104 gave the highest yield of 23.75 q/ha in Guntur district.

Greengram

Greengram varieties IPM 2-14 and WGG 42 were demonstrated during kharif season where in the yields were 14.97 and 30.43 per cent higher than check varieties. The highest yield of 19.2 q/ha was recorded by IPM 2 14 in Guntur district. During rabi season, LGG 607 variety recorded an average yield 11.81 q/ha over check variety with 10.16 q/ha in Chittoor district. Varieties IPM 2-14 and WGG 42 were with average yields 11.84 and 8.23 q/ha as against 9.0 and 10.16 q/ha in check varieties.

Redgram

Redgram varieties LRG 105, TRG 59, LRG 52 and PRG 176 were demonstrated during kharif season where in the yields were 14.55, 8.44, 10.17 and 8.24 q/ha as against 12.03, 6.72, 7.66 and 6.65 q/ha in check varieties, respectively. The highest yield in LRG 105 was 21.6 q/ha in Guntur district, LRG 52 was 15.0 q/ha in Krishna district where PRG 176 and TRG 59 with 10.72 and 10.2 q/ha in Kurnool district.

Bengal gram

Bengal gram varieties NBeG 452 and NBeG 49 were demonstrated during rabi season where in the average yields were 20.48 and 26.18 q/ha as against 17.12 and 23.40 q/ha in check varieties. The highest yield of 25.11 q/ha was recorded by NBeG 452 in East Godavari district.

Telangana

Blackgram

During rabi season, Varieties TBG 104, VBN 8 and MBG 207 were demonstrated where in the yields were 27.25, 48.14 and 29.90 per cent higher than check varieties. The highest yields recorded by the three varieties were 16.42, 14.91 and 12.33 q/ha in Nalgonda, Karimnagar, and Warangal districts, respectively. During summer season, varieties PU 31 and MBG 1070 were demonstrated with an average yield of 15.48 and 11.66 q/ha as against 12.07 and 9.10 q/ha.

Greengram

During Kharif season the variety WGG 42 gave an average yield of 9.41 q/ha as against 7.61 q/ha in check and highest yield recorded was 11.91 q/ha in Khammam district. During the *rabi* season WGG 42 and MGG 295 and were demonstrated where in the yields were 31.61 and 29.90 per cent higher than check varieties. The highest yields of the two varieties were 12.33 q/ha recorded in Nalgonda district. During summer season, varieties WGG 42 and MGG 385 demonstrated where the average yield is 11.98 and 7.59 q/ha against 9.10 and 6.01 q/ha with 31.65 and 26.29 per cent higher than the check varieties. The highest yield was recorded 13.42 q/ha in Khammam districts by variety MGG 385.

Redgram

Redgram varieties BSMR 736, PRG 176 and WRGe 97 were demonstrated by KVKs in Telangana where the average yields in demonstrations were 13.99, 11.76 and 8.81 q/ha as against 13.48, 9.14 and 6.09 q/ha. Among the varieties WRGe 97 highest yield 15.31 q/ha was recorded by the Mahabubnagar district.

Bengal gram

During the *rabi* season, the average yields recorded in Bengal gram varieties NBeG 3, NBeG 452 and NBeG 49 were 19.61, 26.17 and 14.62 q/ha. The highest yield of 26.17 q/ha was recorded by NBeG 452 in Mahabubnagar (YFA) district.

Puducherry

In Puducherry, blackgram variety VBN 8 and greengram variety WGG 42 were demonstrated during rabi season by KVK Karaikal where the average yields were 6.19 and 6.48 q/ha as against 3.04 and 3.41 q/ha in respective checks.

Table 4.4.2. Performance of pulses varieties and technologies under CFLD Pulses

State/ Season/ Crop	Variety	KVKs	Average Yield (q/ha)		% Increase
			Demo	Check	
Tamil Nadu					
Kharif					
Blackgram	VBN 8	Erode, Madurai, Salem, Theni, Tiruvannamalai	8.34	6.91	20.69
Blackgram	VBN 11	Dindigul, Namakkal	8.21	5.98	37.29
Greengram	CO 8	Erode	8.84	7.52	17.55
Greengram	VBN 4	Dindigul, Madurai, Namakkal, Salem	8.68	6.36	36.48
Greengram	MH 421	Namakkal	9.26	5.95	55.63
Redgram	CO 8	Karur	5.12	4.05	26.42
Redgram	LRG 52	Krishnagiri	14.71	12.20	20.57
Rabi					
Blackgram	VBN 11	Karur, Nagapattinam, Pudukkottai, Salem, Thiruvarur, Villupuram, Villupuram-II, Virudhunagar	7.76	6.09	27.42
Blackgram	VBN 8	Ariyalur, Cuddalore, Dharmapuri, Dindigul, Kancheepuram, Sivagangai, Theni, Thoothukudi, Tirunelveli, Tiruvallur, Tiruvannamalai, Vellore	7.72	6.19	24.72
Greengram	CO 8	Cuddalore, Kancheepuram, Perambalur, Theni, Thoothukudi, Tiruvallur, Thiruvarur	7.50	5.38	39.41
Greengram	VBN 4	Nagapattinam, Tirunelveli, Virudhunagar	5.31	4.16	27.64
Bengal gram	NBeG 49	Coimbatore	11.72	10.33	13.46
Bengal gram	NBeG 452	Dharmapuri	18.06	15.85	13.94
Summer					
Blackgram	VBN 8	Karur	4.79	3.96	20.96
Blackgram	VBN 10	Tiruppur	9.17	7.18	27.72
Blackgram	VBN 11	Perambalur, Tiruchirappalli	9.18	8.14	12.78

State/ Season/ Crop	Variety	KVKs	Average Yield (q/ha)		% Increase
			Demo	Check	
Andhra Pradesh					
Kharif					
Blackgram	TBG 104	Guntur (Lam), Kurnool (Yagantipalle), Vizianagaram, West Godavari (Undi), West Godavari (VR Gudem)	15.61	12.53	24.58
Greengram	IPM 2 14	Guntur (Lam)	19.20	16.70	14.97
Greengram	WGG 42	Anantapur (Kalyandurg), Anantapur (Reddipalli), Chittoor (RASS), Visakhapatnam (BCT), Vizianagaram, West Godavari (Undi)	6.60	5.06	30.43
Redgram	LRG 105	Chittoor (RASS), Guntur (Lam), Kadapa (Utukur)	14.55	12.03	20.95
Redgram	TRG 59	Kurnool (Banavasi), Vizianagaram	8.44	6.72	25.60
Redgram	LRG 52	Anantapur (Kalyandurg), Krishna (Garikapadu), Prakasam (Darsi), Visakhapatnam (BCT)	10.17	7.66	32.77
Redgram	PRG 176	Anantapur (Reddipalli), Kurnool (Yagantipalle)	8.24	6.65	23.91
Rabi					
Blackgram	GBG 1	East Godavari (Pandirimamidi), Kadapa (Utukur), Krishna (Garikapadu), Kurnool (Yagantipalle), Visakhapatnam (Kondempudi)	16.04	13.23	21.24
Blackgram	LBG 752	Krishna (Ghantasala)	14.37	10.64	35.06
Blackgram	LBG 787	Srikakulam, Vizianagaram	9.79	6.07	61.29
Blackgram	TBG 104	Chittoor (RASS), Guntur (Lam), Kadapa (Vonipenta), Kurnool (Banavasi), Nellore, Nellore (Periyavaram), Prakasam (Darsi), Visakhapatnam (BCT), West Godavari (Undi), West Godavari (VR Gudem)	14.08	11.83	19.02
Greengram	IPM 2 14	Prakasam (Darsi), Srikakulam, Visakhapatnam (Kondempudi), Vizianagaram West Godavari (Undi)	11.84	9.00	31.56
Greengram	LGG 607	Chittoor (Kalikiri)	11.81	10.16	16.24
Greengram	WGG 42	Anantapur (Reddipalli), Chittoor (RASS), Visakhapatnam (BCT)	8.23	6.90	19.28
Bengal gram	NBeG 452	Anantapur (Reddipalli), Anantapur (Kalyandurg), East Godavari (Pandirimamidi), Guntur (Lam), Kadapa (Utukur), Kurnool (Banavasi), Kurnool (Yagantipalle), Prakasam (Darsi)	20.48	17.12	19.63
Bengal gram	NBeG 49	Krishna (Garikapadu), Kurnool (Yagantipalle)	26.18	23.40	11.88
Summer					
Greengram	WGG 42	Krishna (Garikapadu), Nellore (Periyavaram)	11.05	9.77	13.10
Greengram	IPM 2 14	Srikakulam	4.70	3.51	33.90
Telangana					
Kharif					
Greengram	WGG 42	Khammam (Wyra), Mahabubnagar (YFA), Warangal (Mamnoor)	9.41	7.61	23.65
Redgram	WRG 97	Adilabad, Karimnagar (Jammikunta), Khammam (Wyra), Khammam (Kothagudam), Mahabubnagar (YFA), Mahabubnagar (Palem), Mancherial (Bellampalli), Medak (Tuniki), Nalgonda (Gaddipally), Warangal (Malyal)	11.76	9.14	28.67
Redgram	BSMR 736	Medak (DDS)	13.99	13.48	3.78
Redgram	PRG 176	Nalgonda (Kampasagar), Ranga Reddy (CRIDA)	11.51	8.12	41.75
Rabi					
Blackgram	TBG 104	Mahabubnagar (YFA), Nalgonda (Kampasagar)	15.27	12.00	27.25
Blackgram	VBN 8	Karimnagar (Ramagirikhilla), Mahabubnagar (Palem)	13.57	9.16	48.14
Blackgram	MBG 207	Warangal (Malyal)	12.33	9.64	27.90
Greengram	WGG 42	Karimnagar (Ramagirikhilla), Mahabubnagar (Palem), Nalgonda (Kampasagar), Warangal (Mamnoor)	10.06	7.73	30.14
Greengram	MGG 295	Warangal (Malyal)	12.25	9.43	29.90
Bengal gram	NBeG 3	Adilabad, Karimnagar (Ramagirikhilla), Nizamabad	19.61	15.54	26.19
Bengal gram	NBeG 452	Mahabubnagar (YFA)	26.17	21.04	24.38

State/ Season/ Crop	Variety	KVKs	Average Yield (q/ha)		% Increase
			Demo	Check	
Bengal gram	NBeG 49	Medak (DDS), Medak (Tuniki), Warangal (Mamnoor)	14.62	13.16	11.09
Summer					
Blackgram	PU 31	Khammam (Kothagudam)	15.48	12.07	28.25
Blackgram	MBG 207	Nalgonda (Gaddipally)	11.66	9.35	24.71
Greengram	MGG 385	Khammam (Kothagudam), Nalgonda (Gaddipally)	11.98	9.10	31.65
Greengram	WGG 42	Karimnagar (Jammikunta)	7.59	6.01	26.29
Puducherry					
Rabi					
Blackgram	VBN 8	Karaikal	6.19	3.04	103.62
Greengram	WGG 42	Karaikal	6.48	3.41	90.03

Table 4.4.3. Highest yield recorded under CFLD Pulses

State/ Season/ Crop	Variety	Highest yield recorded (q/ha)	KVK/District
Tamil Nadu			
Kharif			
Blackgram	VBN 11	9.31	Namakkal
Blackgram	VBN 8	8.52	Thiruvannamalai
Greengram	CO 8	8.84	Erode
Greengram	VBN 4	9.67	Madurai
Greengram	MH 421	10.25	Namakkal
Redgram	CO 8	5.12	Karur
Redgram	LRG 52	14.71	Krishnagiri
Rabi			
Blackgram	VBN 8	8.63	Vellore
Blackgram	VBN 11	9.52	Villupuram
Greengram	CO 8	8.60	Kancheepuram
Greengram	VBN 4	7.30	Virudhunagar
Bengal gram	NBeG 452	18.06	Dharmapuri
Bengal gram	NBeG 49	11.72	Coimbatore
Summer			
Blackgram	VBN 8	4.79	Karur
Blackgram	VBN 10	9.17	Tiruppur
Blackgram	VBN 11	9.52	Tiruchirappalli
Andhra Pradesh			
Kharif			
Blackgram	TBG 104	23.75	Guntur (Lam)
Greengram	IPM 2 14	19.20	Guntur (Lam)
Greengram	WGG 42	9.16	Anantapur (Kalyandurg)
Redgram	LRG 105	21.60	Guntur (Lam)
Redgram	LRG 52	15.01	Krishna (Garikapadu)
Redgram	PRG 176	10.72	Kurnool (Yagantipalle)
Redgram	TRG 59	10.20	Kurnool (Banavasi)
Rabi			
Blackgram	GBG 1	21.54	Kadapa (Utukur)

State/ Season/ Crop	Variety	Highest yield recorded (q/ha)	KVK/District
Blackgram	LBG 752	14.37	Krishna (Ghantasala)
Blackgram	LBG 787	13.39	Vizianagaram
Blackgram	TBG 104	23.11	Kurnool (Banavasi)
Greengram	IPM 2 14	17.50	Prakasam (Darsi)
Greengram	LGG 607	11.81	Chittoor (Kalikiri)
Greengram	WGG 42	13.55	Chittoor (RASS)
Bengal gram	NBeG 452	25.11	East Godavari (Pandirimamidi)
Bengal gram	NBeG 49	26.18	Krishna (Garikapadu)
Summer			
Greengram	IPM 2 14	4.70	Srikakulam
Greengram	WGG 42	15.0	Krishna (Garikapadu)
Telangana			
Kharif			
Greengram	WGG 42	11.91	Khammam (Wyra)
Redgram	BSMR 736	13.99	Medak (DDS)
Redgram	PRG 176	14.20	Ranga Reddy
Redgram	WRGe 97	15.31	Mahabubnagar (Palem)
Rabi			
Blackgram	TBG 104	15.27	Nalgonda (Kampasagar)
Blackgram	VBN 8	13.57	Karimnagar (Ramagirikhilla)
Blackgram	MBG 207	12.33	Warangal (Malyal)
Greengram	MGG 295	12.25	Warangal (Malyal)
Greengram	WGG 42	12.33	Nalgonda (Kampasagar)
Bengal gram	NBeG 3	22.00	Adilabad
Bengal gram	NBeG 452	26.17	Mahabubnagar (YFA)
Bengal gram	NBeG 49	21.11	Medak (Tuniki)
Summer			
Blackgram	PU 31	15.48	Khammam (Kothagudam)
Blackgram	MBG 1070	11.66	Nalgonda (Gaddipally)
Greengram	WGG 42	7.59	Karimnagar (Jammikunta)
Greengram	MGG 385	13.42	Khammam (Kothagudam)
Rabi			
Puducherry			
Blackgram	VBN 8	6.19	Karaikal
Greengram	WGG 42	6.48	Karaikal

KVK Salem transformed me from a farmer to a proud entrepreneur. I am earning Rs.1,28,000 per month. Won first prize in Cookathan Competition by IIT Madras . I was adjudged as the best organic farmer by the State Department of Agriculture and was honoured by the Hon'ble Governor of Tamil Nadu during farmers day celebration.

Ms. M. Rani
Karugalur Village, Salem, TN

Demonstration of blackgram TBG 104 KVK West Godavari (Undi) (AP)

Demonstration of red gram PRG 176 KVK Kurnool (Yagantipalle) (AP)

Demonstration of red gram TRG 59 KVK Kurnool (Banavasi) (AP)

Demonstration of black gram TBG 104 KVK Kurnool (Banavasi) (AP)

Demonstration of Bengal gram NBeG 452 KVK Ananthapur (Kalyandurg) (AP)

Demonstration of greengram WGG 42 KVK Visakhapatnam (BCT) (AP)

Demonstration of greengram WGG 42 KVK Chittoor (RASS) (AP)

Demonstration of blackgram VBN 8 KVK Thiruvannamalai (TN)

Demonstration of Bengal gram NBeG 49 KVK Coimbatore (TN)

Demonstration of greengram VBN 4 KVK Dindigul (TN)

Demonstration of red gram LRG 52 KVK Krishnagiri (TN)

Demonstration of greengram CO 8 KVK Perambalur (TN)

Demonstration of blackgram VBN 8 KVK Thiruvallur (TN)

Demonstration of blackgram VBN 11 KVK Villupuram II (TN)

Demonstration of blackgram thresher VBN 11 KVK Villupuram (TN)

Demonstration of seed treatment for blackgram VBN 11 KVK Salem (TN)

Demonstration of blackgram VBN 8 KVK Theni (TN)

Demonstration of greengram WGG 42 KVK Karimnagar (Ramagirikhilla) (TS)

Demonstration of greengram WGG 42 KVK Nalgonda (Kampasagar) (TS)

Demonstration of greengram WGG 42 KVK Khammam (Wyra) (TS)

Demonstration of Bengal gram NBeG 3 KVK Adilabad (TS)

Demonstration of red gram WRG 97 KVK Adilabad (TS)

Demonstration of Bengal gram NBeG 3 KVK Nizamabad (TS)

Demonstration of Bengal gram NBeG 49 KVK Medak (Tuniki) (TS)

4.5 Cluster Frontline Demonstrations (CFLDs) on Oilseeds under NFSM

KVKs of the zone conducted cluster front line demonstrations on oilseeds under National Food Security Mission (NFSM) in 2022-2023during *kharif, rabi* and *summer* seasons to demonstrate the production potential of newly released technologies on the farmer's fields at different locations. The crops covered are groundnut, sesame, sunflower, castor, safflower and niger. A total of 2680 hectares area was allotted to 45 KVKs in Andhra Pradesh, Tamil Nadu, Telangana states and union territory Puducherry. The programme was implemented in 2450 ha by organizing 6125 demonstrations.

Table 4.5.1. Cluster Frontline Demonstrations (CFLDs) on Oilseeds

Crop	State	Area (ha)		No. of Demonstrations	
		Target	Achievement	Target	Achievement
Kharif					
Groundnut	Andhra Pradesh	200	190	500	475
	Tamil Nadu	130	90	325	225
	Sub total	**330**	**280**	**825**	**700**
Castor	Andhra Pradesh	80	80	200	200
	Telangana	20	20	50	50
	Tamil Nadu	70	70	175	175
	Sub total	**170**	**170**	**425**	**425**
Sunflower	Tamil Nadu	40	20	100	50
Niger	Andhra Pradesh	40	50	100	125
Sesame	Tamil Nadu	20	0	50	0
Total Kharif season		**600**	**520**	**1500**	**1300**
Rabi and Summer					
Groundnut	Andhra Pradesh	280	280	700	700
	Telangana	190	200	475	500
	Tamil Nadu	410	390	1025	975
	Sub total	**880**	**870**	**2200**	**2175**
Sesame	Andhra Pradesh	280	280	700	700
	Telangana	150	160	375	400
	Tamil Nadu	170	130	425	325
	Puducherry	20	20	50	50
	Sub total	**620**	**590**	**1550**	**1475**
Sunflower	Andhra Pradesh	160	140	400	350
	Telangana	200	90	500	225
	Tamil Nadu	80	70	200	175
	Sub total	**440**	**300**	**1100**	**750**
Castor	Andhra Pradesh	20	20	50	50
	Telangana	20	30	50	75
	Tamil Nadu	0	10	0	25
	Sub total	**40**	**60**	**100**	**150**
Safflower	Andhra Pradesh	80	90	200	225
	Telangana	20	20	50	50
	Sub total	**100**	**110**	**250**	**275**
Total Rabi & Summer Season		**2080**	**1930**	**5200**	**4825**
Grand Total		**2680**	**2450**	**6700**	**6125**

Andhra Pradesh

A total of 2825 Cluster frontline demonstrations on oilseeds were implemented by 19 KVKs in Andhra Pradesh during 2022-2023 in groundnut, sesame, sunflower, castor, safflower and niger crops in an area of 1130ha.

Table 4.5.2 Performance of CFLDs on Oilseeds in Andhra Pradesh

Crop	Variety	Name of KVK/ District	Average yield(q/ha)		% increase over check
			Demo	Check	
Kharif					
Groundnut	TCGS-1694	Chittoor	18.6	13.7	35.76
Groundnut	Kadiri Lepakshi	Anantapur, Kurnool, Vizianagaram	16.82	10.83	55.3
Groundnut	Dheeraj	Chittoor	15.34	13.28	15.51
Groundnut	Nitya Haritha	Kurnool	6.63	5.3	25.09
Groundnut	TCGS-1157	Krishna	27.35	25.35	7.69
Castor	ICH-66	Anantapur, Kurnool	16.44	11.83	38.96
Niger	KGN-2	Vizianagaram	6.38	5.21	22.45
Niger	Utkal niger 150	Visakhapatnam	3.85	2.65	45.28
Niger	JNS-28	Visakhapatnam	5.31	2.74	93.79
Rabi and Summer					
Groundnut	TCGS-1694	Kurnool	33.23	26.95	23.31
Groundnut	Kadiri Lepakshi	Anantapur, Chittoor, Nellore, Vizianagaram, Krishna, Kadapa	32.86	24.71	32.98
Groundnut	Nityaharitha	Chittoor	32.7	28.2	15.95
Sesame	YLM-66	Anantapur, Nellore, Srikakulam, Visakhapatnam, Vizianagaram, Krishna, Kadapa, Chittoor, West Godavari, East Godavari, Srikakulam	9.5	7.39	28.55
Sesame	JCS-1020	Kurnool, Kadapa	12.48	10.82	15.34
Sunflower	NDSH-1012	Chittoor, Prakasam, Viziayanagaram	15.95	13.02	22.5
Sunflower	KBSH-44	Visakhapatnam	9.67	7.34	31.74
Safflower	ISF-764	Anantapur, Kurnool	12.18	9.02	35.02

Groundnut: KVKs of Andhra Pradesh conducted 1175 Cluster FLDs on groundnut covering an area of 470 ha in *kharif, rabi* and *summer* seasons in Andhra Pradesh. Technology demonstrated included improved variety with integrated crop management practices. During *kharif*, improved variety Kadiri Lepakshi increased the yields by 55.3% compared to check yield in Anantapur, Kurnool and Vizianagaram districts. The groundnut variety TCGS-1694 recorded percentage increase of 35.76% over the farmers yield in Chittoor district. During *rabi*, demonstrations were conducted with improved variety Kadiri Lepakshi recorded highest average yield of 32.86 q/ha under irrigated conditions.

Sesame: A total of 700 Cluster frontline demonstrations on sesame were taken up in 280 ha in rabi and summer seasons together. In *rabi*, improved variety JCS-1012 along with other technological interventions resulted in average demonstration yield of 12.48q/ha which is 15.34% higher than the average check yield of 10.82q/ha in Kurnool and Kadapa districts. During *rabi* and *summer* season varietal demonstration of YLM-66 with recommended package of practices resulted in 28.55% increase in yields compared to check yield in Krishi Vigyan Kendras of Nellore, Visakhapatnam, Vizianagaram, Krishna, Kadapa, Chittoor, West Godavari, East Godavari and Srikakulam districts.

Castor: A total of 250cluster frontline demonstrations were conducted in 100 ha by KVKs of Kurnool, Prakasam, and Anantapur districts on castor during *kharif* and *rabi* seasons. Technology demonstrated included improved hybrid with integrated crop management practices. ICH-66 hybrid resulted in average demonstration yield of 16.44q/ha with 38.96% increase against check yield of 11.83q/ha in *kharif* season. Highest yield of 24.1q/ha was recorded in case of ICH-66 in *Kharif* season against the check yield of 6q/ha in Anantapur district.

Sunflower: A total of 350Cluster frontline demonstrations in 140 ha were conducted on sunflower by KVKs in Chittoor, Prakasam, Visakhapatnam and Vizianagaram districts during *rabi* season. The technology demonstrated was improved hybrid with integrated crop management practices. Improved hybrid NDSH-1012 resulted in average yield of 14.7q/ha of demo yield with 15.34% increase against check plot yields of 12.8q/ha in Chittoor district. KBSH-44 resulted in 31.74% increase in yield over the check plot in Visakhapatnam district.

Safflower: A total of 225 CFLDs in 90 ha were organized in Safflower in Kurnool and Anantapur districts during *rabi* season under irrigated situation. Safflower hybrid ISF-764 recorded highest average yield of 12.18q/ha against check yield of 9.02q/ha with 35.02% increase in yield over check plot.

Niger: 125 Cluster frontline demonstrations were organized on niger crop in 50 ha on niger crop by KVKs of Vizianagaram and Visakhapatnam districts during *kharif* season. The technology demonstrated was varietal demonstration with varieties KGN-2, Utkal Niger, JNS-28 along with integrated crop management practices. The variety KGN-2 resulted in average yield of 6.38q/ha against check yield of 5.21q/ha with 22.45% increase in yield over check plot. Demonstration of variety JNS-28 resulted in 93.79% increase in yield over the check plot in Visakhapatnam district.

Field visit in Sunflower crop

Field visit in Groundnut crop

Field visit in Niger crop

Field visit in Sesame crop

Field visit in Safflower crop

Tamil Nadu

A total of 1950 Cluster frontline demonstrations on oilseeds were implemented by 21 KVKs in Tamil Nadu and one KVK in Puducherry during 2022-23 in groundnut, sesame, sunflower and castor crops in an area of 800 ha.

Table 4.5.3 Performance of CFLDs on Oilseeds in Tamil Nadu

Crop	Variety	Name of KVK/ District	Average Yield(q/ha)		% increase over check
			Demo	Check	
Kharif					
Groundnut	Dharani	Erode	25.08	21.2	18.3
Groundnut	VRI 10	Salem	21.59	18.54	16.45
Groundnut	Kadiri Lepakshi	Dindigul, Namakkal, Tiruvannamalai	22.53	16.11	39.85
Castor	YRCH-2	Salem, Theni	28.32	23.5	20.51
Castor	YRCH-1	Namakkal	16.2	10.3	57.28
Rabi and Summer					
Groundnut	Dharani	Krishnagiri	26.99	21.95	22.96
Groundnut	Kadiri Lepakshi	Nagapattinam, Perambalur, Namakkal, Dindigul, Kancheepuram, Tiruvannamalai, Villupuram, Vellore, Ariyalur, Coimbatore	28.32	22.52	25.75
Groundnut	VRI-8	Thiruvallur	30.5	28	8.92
Groundnut	VRI-10	Cuddalore	41.1	20.96	96.08
Groundnut	CO-7	Karur	24	19	26.31
Sunflower	KBSH-44	Virudhunagar, Tiruvannamalai	9.59	8.17	17.38
Sunflower	KBSH-78	Tuticorin	12.82	9.53	34.52
Sesame	TMV-7	Villupuram, Virudhunagar	8.05	7.05	14.18
Sesame	VRI-4	Cuddalore, Tuticorin	5.57	3.79	46.96
Castor	YRCH-1	Perambalur	19.4	14.9	30.2

Groundnut: A total of 1200 Cluster FLDs on groundnut were conducted by the KVKs of Tamil Nadu covering an area of 480 ha in *Kharif, rabi* and *summer* seasons. In *kharif*, the technology demonstrated included improved variety with integrated crop management practices under rainfed situation. The varieties demonstrated were Dharani, VRI-10 and Kadiri Lepakshi. Highest average demonstration yield of 25.08 q/ha was recorded with Dharani variety with 18.3% increase in yield compared to check yield in Erode district. During *rabi*, groundnut demonstrations were conducted with improved variety Dharani, Kadiri Lepakshi, CO-7, VRI-8 and VRI-10 following integrated crop management practices. VRI-10 variety recorded highest average demonstration yield of 41.1q/ha, resulting in 96.08% increased yield compared to check yield of 20.96q/ha in Cuddalore district.

Sesame: A total of 325 cluster frontline demonstrations in 130 ha were conducted on sesame in *rabi* season. Improved variety TMV-7 along with other technological interventions resulted in 14.18% increase in yields with average demonstration yield of 8.05q/ha and check yield of 7.05q/ha in Villupuram and Virudhnagar districts. Varietal demonstration of VRI-4 with recommended package of practices under irrigated conditions resulted in 46.96% increase in yields compared to local check during *rabi* season in Cuddalore and Tuticorin districts.

Castor: A total of 200 cluster frontline demonstrations on castor in 80 ha area during *kharif* and *rabi* seasons. The technology demonstrated was improved hybrid with integrated crop management practices. In *kharif,* hybrid YRCH-2 resulted in average yield of 28.32q/ha against 23.5q/ha of check yield with 20.51% increase in yield. In *rabi* the hybrid YRCH-1 resulted in average yield of 19.4q/ha against 14.9q/ha of check yield with 30.2% increase in yield.

Sunflower: 225 Cluster frontline demonstrations in 90 ha on sunflower were conducted during kharif and *rabi* seasons. Technology demonstrated included improved hybrid with integrated crop management practices. The hybrid KBSH-78 recorded 34.52% increase in yields compared to check yield.

Diagnostic field visit in Castor crop

Field day in Sesame crop

Groundnut harvesting

Demonstration on Foliar spray of groundnut rich in Groundnut field

Telangana

A total of 1300 Cluster frontline demonstrations on oilseeds were implemented by 13 KVKs in Telangana during *kharif, rabi* and *summer* seasons in groundnut, sesame, safflower, sunflower and castor crops in an area of 520ha.

Table 4.5.4. Performance of CFLDs on oilseeds in Telangana

Crop	Variety	Name of KVK/ District	Average Yield(q/ha)		% increase over check
			Demo	Check	
Kharif					
Castor	ICH-66	Mahabubnagar	9.86	5.62	75.44
Rabi and Summer					
Groundnut	Kadiri Lepakshi	Karimnagar, Peddapalli, Bhadradri, Nalgonda	27.27	21.61	26.19
Groundnut	Dharani	Suryapet	26.17	20.8	25.81
Groundnut	Kadiri Amaravathi	Warangal	20.4	17.02	19.85
Sunflower	KBSH-41	Pedapalli	12.67	8.86	43
Safflower	ISF-764	Medak	14.6	13.82	5.64
Sesame	JCS-1020	Karimnagar, Adilabad, Nalgonda, Peddapalli, Bhadradri, Mancherial, Nizamabad	8.21	6.53	25.72
Castor	ICH-66	Mahabubnagar	18.45	12.93	42.69

Groundnut: 500 Cluster FLDs on groundnut were conducted covering an area of 200 ha in *rabi* and *summer* seasons in Telangana. The varieties demonstrated were Kadiri Lepakshi, Dharani and Kadiri Amaravathi. Kadiri Lepakshi along with integrated crop management practices resulted in 26.91% increase in yields over check yield in Karimnagar, Pedapalli, Bhadaradri and Nalgonda districts with average demonstration yield of 27.27 q/ha. Kadiri Lepakshi resulted in average yield of 34.5 q/ha in demo plots against the check plots with average yield of 30.5 q/ha in Nalgonda district. Demonstration of Dharani variety resulted in 25.81% increase in yield over the check plot in Suryapet district.

Sesame: A total of 400 cluster frontline demonstrations on sesame in 160 ha were taken up in *rabi* and *summer* season with other technological interventions. The improved variety JCS-1020 resulted in 25.72% increase in yield over check plot. JCS-1020 resulted in 39.02% increase in yields with a demonstration yield of 11.4q/ha over the check yield of 8.2q/ha in Karimnagar district.

Castor: 125 Cluster frontline demonstrations on castor were conducted in 50 ha by KVK, Mahabubnagar during *Kharif* and *rabi* seasons. The technology demonstrated was improved hybrid with integrated crop management practices. During *kharif* the hybrid ICH-66 resulted in an average yield of 9.86q/ha against 5.62q/ha of check with 75.44% increase in yields. During *rabi,* the hybrid ICH-66 resulted in yield of 18.45q/ha against 12.93q/ha of check with 42.69% increase in yields.

Safflower: 50 Cluster frontline demonstrations on safflower were conducted in 20 ha by KVK, Medak during *rabi* season. The technology demonstrated was improved hybrid with integrated crop management practices. The hybrid ISF-764 resulted in average yield of 14.6q/ha with 5.64% increase in yield over the check plot yield of 13.82q/ha.

Field day in Sesame crop

Field day in Niger crop

Field diagnostic visit in Groundnut crop

Field day in Sunflower crop

4.6. Seed Hubs

Twelve KVKs of the zone, 6 KVKs from Tamil Nadu, 2 KVKs from Telangana and 4 KVKs from Andhra Pradesh are involved in the production of quality seeds of pulses to augment the demand of quality seeds from farmers. Crop wise quantity produced and quantity sold in 2022-23 are given in the table 1. Seed hubs of zone 10 produced 2521.08 quintals of seed during 202-23. Out of these 1172 q were black gram followed by by red gram (786.28 q), green gram (289.06 q), Bengal gram (238 q) and cowpea (35.54 q).

Seed class wise quantity produced and sold in 2022-23 is mentioned in the Table 2, that totally 1967.31 quintals are produced from both KVK farm and farmers field. Production of certified seeds is highest of about 1057.07 quintal followed by foundation of seeds I (812.92 q) and foundation seeds II (97.32 q). Most of the seed produced was certified seed (1054 q) followed by foundation seeds I (801.42 q) and foundation seeds II (97.32 q).

Table 4.6.1. Crop wise Quantity produced and sold in 2022-23

Crop Name	Quantity produced			Production/ Procurement cost (Rs./q)	Processing cost (Rs./q)	Quantity Sold			Sale price (Rs./q)	Quantity remained unsold
	KVK farm	Farmers fields	Total			Farmers	Govt agencies	Others		
Bengal Gram		238.03	238.03	7000.00	186.67				10000.00	238.03
Black Gram	18.5	1153.68	1172.18	9073.16	665.63	27.59	1035.81	272.59	9549.31	703.11
Cowpea	0.84	34.70	35.54	2950.00	71.08	29.29	11.88		10300.00	0.70
Green Gram	10	279.06	289.06	7704.36	324.52	46.97	345.60	81.73	8973.64	39.57
Red Gram	533	253.28	786.28	7640.13	182.14	1376.12	1244.63		8682.50	106.81
Total	562.34	1958.74	2521.08	34367.65	1430.03	1479.96	2637.91	354.32	47505.45	1088.22

Table 4.6.2. Seed Class wise Quantity produced and sold in 2022-23

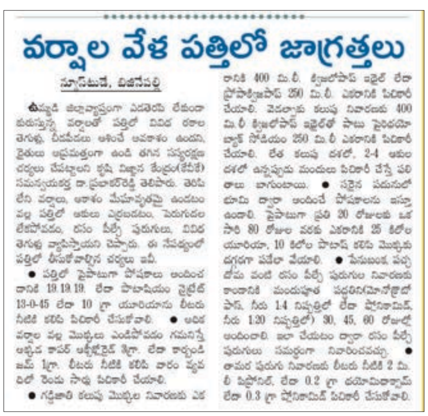
Seed Class	Quantity produced		
	KVK farm (Q)	Farmers fields (Q)	Total (Q)
Certified seeds	27.50	1054.57	1057.07
Foundation Seeds I	215.47	801.42	812.92
Foundation Seeds II		97.32	97.32
Total	242.97	1953.31	1967.31

I reaped bountiful harvest of fresh vegetables, Guava, drumstick, papaya, dhal and maize that gave health to our family and earned incremental income.

Mr. B.Jayaramireddy
Chkravathulapalle Allagadda mandal, Kurnool. AP

4.7. District Agro Meteorological Units (DAMU)

District AgroMet Units (DAMUs) have been setup in 28 Krishi Vigya Kendras of the zone with the assistance of Indian Meteorological Department (IMD) under Gramin Krishi Mausam Sewa (GKMS). These DAMUs are mandated to prepare and disseminate sub-district (block) level weather based agro-advisories to the farmers. Out of these 28 DAMUs, 9 are in AP, 8 are in Telangana, 10 are in Tamil Nadu and 1 is in Puducherry. Two man power positions (SMS Agrometeorology) and Agromet Observer) have been appointed at each DAMU with the responsibility of issuing block level agro-met advisories with the help of an expert panel, disseminate the same through different means like electronic, print and ICT platforms and to quantity the impact of the advisories in terms of benefits accrued to the recipients of the advisories. They will also collect feedback of farmers at regular intervals on the extent to which the advisories issued were of use to them in terms of productivity gain and crop loss avoided during extreme weather events.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Agro advisory in local news paper

Agromet Advisory Bulletins

Block level agro advisory bulletins were prepared based on the IMD block level forecast and disseminated by using all available channels of communication to the farmers. These block level bulletins were prepared twice in a week and communicated to the farmers. Two district level bulletins were also prepared based on the IMD district level forecast and disseminated. These bulletins contain weather forecast for next 5 days, general advisory about weather, SMS Advisory, crop specific advisory, livestock specific advisory, poultry specific advisory etc regarding the activities to be undertaken in next 5 days.

A total of 40156 block level bulletins and 2900 district level bulletins were prepared and disseminated by the 28 KVKs in this zone through various channels. Various means of dissemination include messages through WhatsApp groups, print media & electronic media, voice messages, Kisan Sarathi, mKisan, KVK Websites, display boards at KVKs, radio and other apps.

Farmers covering the produce with poly sheets to prevent loss based on forecast - KVK, Khammam (Wyra), Telangana

Agromet Advisory Messages:

A total of 13169 weather based agro advisories were sent to the farmers related to crops and livestock during the year 2022-23. Out of these, 11097 messages were related to crops and 2072 were related to livestock. Messages related to crop protection accounted for 47.57% of the messages related to crops followed by crop production (18.38%) and harvesting (12.44%). In case of messages related to livestock, about 40% each was related to diseases and nutrition. Similarly 36 % of messages sent are related to goat and sheep followed by cattle (34%) and poultry (26%). These bulletins and messages were sent to the beneficiaries through various means. WhatsApp

groups, print media & electronic media are the major means of reaching the farmers followed by voice/text SMS. Other means include mKisan, display boards, websites, radio etc.

Farmers awareness programmes and Feedback studies

Various programmes such as trainings, kisan gosthis etc were conducted to create awareness about weather forecast and weather based agro advisories, benefits and avoiding probable loss due to unexpected events. About 370 such programmes were organized with the participation of about 18000 farmers and farm women during the year 2022-23 in ICAR-ATARI, zone X. KVKs conducted feedback and impact studies to assess the accuracy and usefulness of the agro advisories sent to the farmers. About 50 feedback studies and 45 impact studies were conducted by the KVKs of zone X.

Creating awareness through Doordarshan programme - KVK, Puducherry

Collecting feedback from farmer - KVK Kadapa (Utukuru), Andhra Pradesh

Milk replacer supplement given by KVK Karaikal improved the goat kid's health in my goat unit The goats gained a body weight of 14-15 kgs by 6-8 months which fetched Rs. 5000/- per goat compared Rs.3000/- without the supplement.

Mr. K. Kaliayamoorthi
Elaiyangudy, Thirunallar, Karaikal

4.8 DAPST (Development action plan for Schedule Tribes) and DAPSC (Development Action plan for Schedule Castes)

The Development action plan for Schedule Tribes (DAPST) was implemented through 16 KVKs in the zone (7 in Andhra Pradesh (Vizianagaram, Srikakulam, Visakhapatnam I, Visakhapatnam II, East Godavari II, West Godavari II, Prakasam I) , 7 in Telangana (Adilabad, Mancherial, Kothagudem, Khammam (Wyra), Nalgonda (Kampasagar), Warangal (Malyal), Nizamabad (Rudrur) and 2 in Tamil Nadu (Namakkal and Salem). The project is implemented mainly to achieve enhanced income and livelihood security of tribal farmers through agriculture and allied sector activities that are in harmony with their tribal life style. The project intends to include activities to develop agriculture and allied sectors viz. irrigation, animal husbandry, dairy development, food processing, vocational training, etc. that provide a source of livelihood to the tribal population. The fund of DAPST is mainly utilized for core mandated activities of the KVKs in tribal dominant adopted villages and also for Income generating schemes which promote wage employment or self-employment and for skill development. The achievement of the 16 KVKs that implemented DAPST during 2022-23 is presented in the following table in terms of the inputs and services supplied / rendered to the tribal beneficiaries.

Table 4.8.1. Achievements of interventions of KVKs under DAPST during 2022

Activity	Andhra Pradesh		Telangana		Tamil Nandu		Total	
	Value	Farmers (No.)	Value	Farmers (No.)	Value	Farmers (No.)	Value	Farmers (No.)
On-farm trails (Nos.)	219	219	52	71	33	33	304	323
Frontline demonstrations (Nos.)	794	1142	517	562	202	202	1513	1906
Framer's training (Nos.)	205	5952	66	2232	24	756	295	8940
Training of Rural Youth (Nos.)	52	696	33	844	9	233	94	1773
Training of Extension Personnel (Nos.)	56	1369	16	684	3	90	75	2143
Skill Training (Nos.)	150	596	59	620	4	208	213	1424
Extension Activities (Nos.)	1360	3463	117	5659	19	5044	1496	14166
Production of Seed (q)	6,319.59	3185	437.4	1882	100.2	37	6,857.19	5104
Planting material supplied (Nos.)	201650	1031	44275	995	10260	1856	256185	3882
Live-stock strains and fish fingerlings (Nos.)	12641	526	7194	753	2770	40	22605	1319
Soil samples tested (Nos.)	995	8926	1250	1250	140	140	2385	10316
Mobile agro – advisories (Nos.)	3134	93223	1040	46668	460	5273	4634	145164
Micro-enterprises / assets supplied (Nos.)	4853	3222	9244	3326	469	959	14566	7507

A total of 46 skill training programmes of varying duration from 1-90 days were implemented by KVKs during 2022-23 for the benefit of 1424 tribal people. These trainings helped them in taking up income generating activities with the critical inputs supplied by the KVKs under the project. The details of the skill training programmes are as follows,

Table 4.8.2. Skill training Programmes conducted during 2022-23 under DAPST

Details of the training programmes	Duration (Days)	No. of trainees
Andhra Pradesh		
East Godavari(Pandirimamidi)		
Cashew nut processing	3	20
Rubber tapping and processing	5	60
Value addition practices in tapioca and sweet potato	2	33
Skill training program on beekeeping	5	25
Field level spawn production technology	3	28
Mushroom production technology	3	53
Sustainable integrated farming system	2	30
Organic fertilizers preparation and uses	2	15
Visakhapatnam (BCT)		
Training program on value added products in Jackfruit	3	16
Preparation of botanical pesticides	3	16
Prakasam (Darsi)		
Value addition of millets	3	30
Visakhapatnam (Kondempudi)		
Mass production of bio-fertilizers, bio-control agents and microbial pesticides.	3	25
Preparation of Jackfruit, pineapple based value added products	3	25
Raising of turmeric and ginger single node seedlings through pro tray technology	3	25
Honey bees production	3	25
Vizianagaram (Rastakuntubai)		
Propagation techniques in horticultural crops	2	35
Mass multiplication of Bio agents and its application / usage in different crops	3	25
Value addition to millets	3	25
Srikakulam (Amadalavalasa)		
Value addition of millets	2	10
Mushroom cultivation	2	10
West Godavari (Venkataramanagudem)		
Value addition in cashew	2	45
Vocational skill training program on bamboo value added products for tribal youth	90	20
Total (Andhra Pradesh)	**--**	**596**
Telangana		
Adilabad		
Skill training on selection of raw material and filling in vermibed for vermicomposting	2	25
Nursery management techniques in vegetable crops	2	30
Mancherial		
Crop residue management in different crops	3	30
Honey bee raring	3	30
Wealth from waste	3	30
Nizamabad (Rudrur)		
Skill training program on growing of vegetable nursery in portrays and kitchen gardening	3	30
Skill training on various methods of composting, Vermicomposting and waste decomposer use in crops	3	30
Skill training on tailoring and embroidery to tribal women	15	15
Skill training on silage production	3	30
Khammam (Bhadradi Kothagudem)		
Capacity building program on soil health management.	2	60
ICM Practices in *rabi* groundnut cultivation	1	60

Details of the training programmes	Duration (Days)	No. of trainees
Safe handling of pesticides and pesticide residues and its impact on environment	2	45
Beekeeping as a profitable enterprise	3	45
Vermicompost – its preparation and uses	3	45
Trellis method of tomato cultivation	2	30
Khammam (Wyra)		
Homestead technologies for income generation	3	25
Warangal (Malyal)		
Tailoring & Embroidery	3	30
Value addition to millets	3	30
Total (Telangana)	**--**	**620**
Tamil Nādu		
Namakkal		
Composting technology	1	28
Ethno veterinary medicine in livestock	1	25
Preparation of masala powder	2	30
Murrel fish culture	2	25
Salem		
Demo on organic input production	1	50
Demo on waste management and organic inputs production	1	50
Total (Tamil Nādu)	**--**	**208**
Grand Total	**--**	**1424**

FLD on improved bajra variety - KVK , DARSI, Andhra Pradesh

Method demonstration on nutrient application in pepper- KVK, Namakkal, Tamil Nādu

Training program on Natural farming – KVK, Malayal, Telangana

Skill training program on tailoring and embroidery-KVK, Malayal, Telangana

The KVKs implementing TSP have also provided some physical assets to the tribal beneficiaries and facilitated establishment of some micro-enterprises either singly or in groups for ensuring enhance income and sustainable livelihood option to tribal households in the adopted villages. A total of 14566 physical assets / micro-enterprises were established during 2022 benefitting 7507 tribal people and the details of the same are furnished in the following table.

Table 4.8.3. Physical assets/micro-enterprises established in tribal areas during 2022-23

State, KVK and enterprise	No.of units	No. of beneficiaries
Andhra Pradesh		
East Godavari(Pandirimamidi)		
Agri Canon (AC-09) Scaring gun	50	50
Poultry birds - Ghaus, Kadaknath	2000	200
EverFlow Horizontal Cylinder Cal Auto Clave Double Walled Chamber	1	100
Water Proof Tarpaulins	100	100
Rubber Tapping inputs	100	100
Bee Hives	10	10
Farm implements	14	14
Ablation tools, Harvesting chisels and Aluminium poles	25	25
Agri Solar Fence	3	3
Big Jally Multy purpose Trays	95	95
Shade net	1	500
Mono Filament Nylon Fishing Nets	73	7
Visakhapatnam (BCT)		
Flour mill	1	10
Tarpaulins	80	80
Distribution of turmeric boilers under TSP capital 22-23	4	40
Distribution of Turmeric mini boiler under TSP Capital FY 22-23.	4	40
Aluminum ladders	4	40
Bed Former	2	60
Brush Cutters	2	40
Fruit fly traps	1080	270
Hand pushed seed drill	1	25
Sprayers	11	11
Millet processors	10	10
Storage bins	40	40
Rotovator	1	40
Turmeric Polisher	4	10
Turmeric Boilers	4	10
Vermi beds	40	40
Prakasam (Darsi)		
Battery sprayers	15	15
Tarpaulin sheets size	45	45
Micro irrigation drip system	1	1
Chaffcutter	1	1
Visakhapatnam (Kondempudi)		
Mini Rice Mill	1 .	1
Mini Processing equipment	1	1
Solar cum Electrical dryer	3	3
Solar Power Panel	2	2
Power Reaper	1	1
Sub spoiler	1	1
Battery operated sprayers	10	10
Rotovator	1	1
Blade harrow	1	1
Bund former	1	1
Spring Tyne cultivator	1	1
Two bottom MB Plough	1	1
Two bottom disc Plough	1	1
Ridger	1	1
Hand hoe	120	120
Wheel hoe	50	50
Hand rake	55	55
Hand hoe blade	100	100
Spike tooth rake	45	45
Sickles	100	50
Vizianagaram (Rastakuntubai)		
Battery sprayers	50	50
Poly sheets	50	50
Crowbars	40	40
Spades	50	50
Brush Cutters	3	20
Bicycle weeders	30	90
Srikakulam (Amadalavalasa)		
11 tyne rigid cultivator	1	10
12 off set disc harrow	1	10
Paddy drum seeder	1	10
Honey bee boxes	10	10
Power weeder	1	10
Duplex poultry cages	4	10
Vermicomposting sieving mechine	1	10
Horticulture implements	12	10
Rotavator	-	10
Paddy reaper	1	10
Solar street lights	6	0
Solar pump sets	1	0
CRIJAFf jute wheel hoe	10	10

State, KVK and enterprise	No.of units	No. of beneficiaries
Heavy duty sub soiler	1	10
Knapsack spyaer	1	10
Pressure cooker and water purifier	2	0
Godrej store well	2	0
PVC PIPES for bore well	-	0
West Godavari (Venkatramanagudem)		
Tray drier, Basket press, fruit crusher	1	45
Sheep and goat enterprises	24	24
Backyard poultry enterprsises	40	40
Chaff cutters for dairy farming	3	30
Battery operated Knapsack Sprayers	40	40
Mini rice mills	5	50
Garden tool kits	20	20
Mulching rolls	120	30
Banana fiber extractor	1	5
Tray drier	1	15
Slicing machine deep dryer pulveriser	3	15
Total (Andhra Pradesh)	**4853**	**3222**
Telangana		
Adilabad		
Battery sprayers	50	150
Tarpaulins	60	120
Mulching	5	5
Shade net	5	5
Seed Drills (Bullock drawn)	10	150
Manual hand push seed drill	12	60
Portable drip unit	10	10
Irrigation pipes	161	150
Sprinklers	79	
9 Tyne Cultivator	3	150
M B Plough	3	150
Khammam (Bhadradi Kothagudem)		
Brush cutters	5	50
Solar Fence	5	40
Tarpaulins	30	30
Disk Harrow	4	40
LED Lighting panel	10	100
Full Cage wheels	4	40
Disk Harrow (Tractor operated)	4	40
Levelling Gorru (Tractor operated)	4	50
Warangal (Malyal)		
Portable vermi beds	30	30
Multi-purpose flour mill	6	30
Stitching machine	30	30
Tarpaulins	100	100
Battery sprayers	52	52

State, KVK and enterprise	No.of units	No. of beneficiaries
Hand weeders	60	60
Nalgonda(Kampasagar)		
Poultry chicks	1000	50
IFS for dry land farmers (sheep)	1	5
Fish fingerlings	5000	5
Manual operated battery sprayers	47	47
Tarpalins	100	100
Promotion of piggery as micro enterprise	30	5
Rabbits	600	40
Drum seeders	15	15
Strengthening of IFS demo unit at KVK	1	-
Stem applicators	200	200
Bellampalli (mancherial)		
Farm produce cleaning / drying equipment (tarpaulins)	202	202
Secateurs	55	55
Cotton Puller	45	45
Nizamabad(Rudrur)		
Milk cane	60	60
Grain storage unit	45	45
Maggam unit	20	20
Hand weeder	15	30
Pheromone traps, sticky traps	100	100
vegetable crates	200	100
Super seeder	1	-
Plastic drums for waste decomposer	20	20
Delta solar light trap	4	20
portable drip irrigation system	1	-
Khammam(wyra)		
Multipurpose flour mill	5	25
Cotton stem applicators	500	250
Sickles	100	100
Drum seeder	20	20
Sewing machines	5	15
Battery sprayers	30	30
Vermi beds	30	30
Nursery protrays and Shadenet unit	20	20
Poultry shelters/Cages	20	20
Tarpaulins	10	10
Total (Telangana)	**9244**	**3326**
Namakkal		
EDP activity on desi bird Rearing : Distributed 20 nos of desi bird night shelter with 240 no's 6 weeks old Aseel cross chicks to 20 farmers. 4 farmers started desi bird farming and earned Rs. 753/month by sale of bird and egg.	20	20

State, KVK and enterprise	No.of units	No. of beneficiaries
EDP activity on Honey Bee Rearing : Apiary unit –EDP activities+ Face mask + Hand cloves Smoker +Honey extractor	25	25
Assets created at KVK campus: Organic product preparation unit under Natural Farming	1	-
EDP on Vermicompost production : Distribution of vermicompost unit bed & worms	30	30
EDP on primary processing of spices : Tarpaulin sheets	17	17
EDP on Value addition in fruits/milk	10	10
Coffee pulping machine	1	20
EDP –spices processing unit	1	10
Small farm implements Pepper harvesting unpoled aluminum ladder	10	10
Small farm implements - Power sprayer	10	20
Small farm implements - Brush cutter with accessories	1	10
EDP - Maintenance of NRCB Banana shakti production unit	1	10
EDP - High density polythene sheet 750 GSM for fish pond lining	2	2
Salem		
Seed Drill	10	50
Aluminum Unpoled Pepper Ladder	20	20
Rotary Cono Weeder	45	45
Multi Crop Thresher	1	100
Head Light for Nerium Harvesting	250	250
Sprayer	10	10
Chop Cutter cum feed grinder	2	200
Printer	1	
Bund Former	1	100
Total (Tamil Nādu)	**469**	**959**
Grand Total	**14566**	**7507**

Soil health card distribution to farmers – KVK, Namakkal, Tamil Nadu

Establishment of floor mill in tribal villages – KVK, Visakapatnam, Andhra Pradesh

Success story of tribal farmers in using unipole aluminum ladder for pepper harvesting in Shervaroy hills (Salem)

Domain of the study / Rationale

Black pepper (*Piper nigrum*) is one of the important spice crops grown in Yercaud of Salem district in an area of 1680 ha with a productivity of 0.2 t / ha. It is an introduced crop to Shervaroy hills during the 1970's as an alternative to the traditional cereals and millets. It is important to harvest pepper at the proper stage of maturity to achieve a dried product of good colour and appearance. The spikes are nipped by hand and collected in bags in the young plantations. Since pepper vines grow on some host trees, it is necessary that for plucking one must climb on the trees.Normally, single pole bamboo ladder is used as a support to climb the shade trees (Silver oak – Grevillea Robusta) of black pepper for harvesting. It is a very time-consuming activity with a lot of difficulties and dangerous to the laborer and also harmful to the vine. The required skills include climbing up the ladder, avoiding ant bites, and conquering the fear of heights.

Activities implemented by KVK

KVK, Salem introduced and supplied unipole aluminum ladder under Tribal Sub Plan, which is affordable, efficient harvesting equipment that can be operated by any person, to increase the effectiveness of harvesting process. Training and demonstrations were given to the farmers regarding pepper cultivation, harvesting and other intercultural operations using unipole aluminium ladder and value addition. The aluminum unipole ladder was used by the farmers during the harvesting season of pepper and its effectiveness was observed in the 15 yr old pepper plantations and feedback of the farmers also collected.

Output of the intervention

By comparing the time taken for harvesting, one hour is required for harvesting single vine and an average of 500 kg pepper spikes were harvested / day by using Aluminium unipole ladder as against 1.30 hr. – 2 hr./ vine and harvested 300 kg/d by bamboo pole method. Totally 72 skilled labors were involved in harvesting of 0.4 ha pepper plantations having 360 vines by using bamboo pole as against 45 labors by using aluminium ladder. So, the farmer could spend Rs.2000/- day as a labor charge for harvesting of pepper spikes for 6 hr. (7 am -1 pm). The economic analysis revealed that the highest expenditure (Rs.87000/-) was incurred in bamboo pole method as compared to aluminium ladder (Rs.71000/-) and the maximum net return (Rs.2,09,000/-) was obtained by using aluminium unipole method. Therefore, farmers could save an amount of Rs.16000/- besides getting additional profit of Rs.209000/- while using aluminium unipole ladder for harvesting. The cost: benefit ratio is also highest (1:3.94) in this method.

Outcome and impact

The farmers of adjoining areas were also convinced and interested to adopt this tool for pepper harvesting. It can be concluded that this aluminium unipole ladder can effectively replace the bamboo pole harvesting of pepper in Shervaroy hills.

Harvesting of pepper using

Unipole Aluminium Ladders

Development Action Plan for Schedule Castes (DAPSC)

This programme was implemented by all the KVKs of the zone for achieving improvement in the income and livelihood security of scheduled caste communities in adopted villages. Interventions have been taken up by KVKs that would direct benefit to schedule caste farmers or youth. Besides implementing core mandated activities, KVKs organized skill imparting trainings and also provided physical assets for creating income generating opportunities. Trainings, demonstrations and awareness programmes were also organized for promoting natural farming among schedule caste farmers. The achievements of DAPSC during 2022 are presented in the following table.

Table 4.8.4. Achievement of DAPSC during 2022-23

Items/ Activities	Quantity	No. of activities		No. of beneficiaries	
		Annual target	Achievement	Annual target	Achievement
Trainings (capacity building/skill Develop. etc.)	No.	21513	1913	36426	37409
On Farm Trials (OFTs)	No.	428	513	2018	2285
Awareness camps, exposure visits etc.	No.	5838	1630	66870	46809
Frontline Demonstrations (FLDs) and other demonstrations	No.	741	1129	4999	6428
Input Distribution					
Seeds (field crop) Production	Q	3940.05	1899.479	6980	7549
Livestock strains and fingerlings produced for farmer	No.	258017	252064	10162	5526
Planting material produced for farmer	No.	1695774	1841427.26	16622	18046
Services/ facilitation					
Testing samples of soil and water	No.	7695	7526	7669	7750
Promotion of agri/entrepreneurship	No.	727	824	1784	2396
Natural Farming					
No. of Demonstration	No.	381	500	5841	6039
No. Trainings	No.	326	380	10396	10580
No. of Awareness Programs	No.	325	406	12059	15726

4.9. Central Sector Scheme for promotion of '10000' Farmer Producer Organisations (FPOs)

This is a central sector scheme which aims to achieve inclusive and sustainable transformation through the creation of a holistic and supportive ecosystem for the formation of 10000 FPOs and their nurturing, hand holding and capacity building. This scheme is implemented through National Cooperative Development Corporation (NCDC). Formation and promotion of FPO is based on produce cluster area. NCDC identified 6 Cluster- Based Business Organizations (CBBOs) in this zone of which 4 are KVKs and two are ICAR institutes. Each CBBO established two FPOs under this scheme. Number of shareholders in each FPO ranges from 357 to 960. On an average, these FPOs have about Rs. 10 lakh equity amount. Most of these (83%) FPOs have office building. Eight FPOs have owned/hired godown and license for marketing of seeds, fertilizers and pesticides. Only two FPOs have custom hiring centres. These have linkages with Markfed, APMAS, ICRISAT-IFDC, NABARD, IFFCO, FMC, KRIBCO etc.

Details of FPOs established in zone 10

S. No	Name of the CBBO	State	District	Name of Block	FPOs Registered	Share-holders	Equity Amount (Rs.)
1	KVK East Godavari (Kalavacharla)	Andhra Pradesh	East Godavari	Karapa	1	386	7,72,000
2	KVK East Godavari (Kalavacharla)	Andhra Pradesh	East Godavari	Panduru	1	414	828000
3	KVK Kurnool (Banavasi)	Andhra Pradesh	Kurnool	Maddikera	1	750	15,00,000
4	KVK Kurnool (Banavasi)	Andhra Pradesh	Kurnool	Pattikonda	1	750	15,00,000
5	KVK Karimnagar (Jammikunta)	Telangana	Karimnagar	Jammikunta	1	620	682000
6	KVK Karimnagar (Jammikunta)	Telangana	Karimnagar	Manakondur	1	740	814000
7	KVK Medak (Tuniki)	Telangana	Medak	Medak	1	354	6,28,000
8	KVK Medak (Tuniki)	Telangana	Medak	Nizampet	1	750	15,00,000
9	ICAR -IIMR, Hyderabad	Telangana	Medak	Takmal	1	357	6,28,000
10	ICAR -IIMR, Hyderabad	Telangana	Medak	Valdurthi	1	600	15,00,000
11	ICAR-IIOR, Hyderabad	Telangana	Siddipet	Naryanraopet	1	470	920000
12	ICAR-IIOR, Hyderabad	Telangana	Siddipet	Chinnakodur	1	960	1920000

All the CBBOs completed the identification of trainingneedsandtrainingmodulesweredeveloped for 10 FPOs. Preliminary awareness programmes / trainings were undertaken for BoDs/members of the all FPOs. Interface meetings with stakeholders like various government departments, financial institutions, training, Research and Development Institutions at the cluster level were conducted by the CBBOs. Business plans were developed for all the 12 FPOs and were inmlemented by 10 FPOs. Percentage of businesses plan implemented ranges from 30 to 100. Statutory clearances to carry out business activities were oblained for 9 FPOs. Equity grant was availed by the 10 FPOs and one FPO availed first instalment of credit guarantee facility also. Nine FPOs were registered in e-NAM or other electronic platforms. Marketing linkages were established for 10 FPOs.

Paddy Procurement Center by FPO, Tekmal Mandal of Medak District, Telangana

4.10. Agricultural Drone Project

The Union Ministry of Agriculture and Farmers Welfare has initiated "Sub-Mission on Agricultural Mechanization" (SMAM) to make drone technology affordable to the stakeholders in a major boost to promote precision farming in India. It is operational in ICAR institutes, Krishi Vigyan Kendras and State Agriculture Universities for taking up large scale demonstrations of this technology on the farmers' fields. Under this sub mission, Rs. 10 lakhs were granted towards the cost of each agriculture drone. Accordingly, the ICAR, New Delhi has approved various State Agricultural Universities (SAUs), Krishi Vigyan Kendras (KVKs) and ICAR Institutions for allocation of funds for purchase of drones and demonstrations during 2022-23. Rs. 10.00 lakhs have been allocated for the purchase of one drone and Rs. 7.50 lakhs have been allocated for 250 demonstrations (@Rs. 3000.00 per demonstration) per drone. In ATARI, Hyderabad 32 drones were sanctioned to varioue project implementing centres including ICAR institutes, SAUs and KVKs. Details of kisan drones purchased:

Out of 32 drones sanctioned 27 were purchased by different centres. The purchase of other 5 drones were not effected due to various reasons. Of these, 17 drones belong to IoTech World Avigation Pvt. Ltd., Model: Agribot, 6 belong to Garuda Aerospace; Model GA-AD, 2 belong to TREE-D HUBS LLP THBs-E6-01, 2023 model, and one each Vyomic Innovations Pvt Ltd., 2023, Hexacopter and Marut drone Pvt ltd. The cost of the drone ranges from Rs. 5.81 lakh to 10.00 lakh.

Demonstrations conducted:

A target of 8000 ha area was given to the centres of ICAR-ATARI, Hyderabad for the year 2022-23. A total of 3434 demonstrations were conducted in the zone covering 5172 ha area with the participation of 18803 farmers. Among these 2243 demonstrations were insecticide sprays, 310 were micronutrient sprays and 52 were weedicide sprays.

Demonstraion of pesticide spraying in Cotton by KVK, Kampasagar

Comparison of drone technology with manual/ tractor spraying

Spraying with drones require only 35 min per ha while manual spraying requires about 5.4 hours. Similarly, water requirement was reduced to 6.32 percent of manual spraying. Comparatively less quantity of chemical was required to spray by drone. Cost of operation was also reduced to Rs. 1534 per ha from Rs. 1738 per ha.

Table 4.10.1. Comparison of drone spraying with manual/tractor spraying

Particulars	Spraying with Drone	Manual/ tractor spraying	% of manual/ tractor
Time required /ha	0.55	5.04	10.92
Cost of operation /ha	1538	1738	88.51
Chemical required /ha	833.03	1197.92	69.54
Water required / ha	31.95	505.56	6.32

Demonstraion of Spraying in paddy by KVK, Tirupati,

Advantages and disadvantages of the drone technology

Major advantage of drone technology is reduced time of operation. It requires only 11 % time of manual operation. All the centres of Agri drone project opined that it is one of the major advantages of this technology. This will help in timely completion of the spraying operation. This technology will help to overcome the labour shortage as it requires less labour to complete the operation. Less quantity of spray chemical requirement and uniform spraying are another two important advantages as perceived by the centres while conducting demonstrations with drones. Less water requirement is another advantage especially in rainfed areas where water for spraying is transported from distant places. This technology is cost effective as it requires less labour and chemical. Health hazards to the persons involved in spraying of chemicals is avoided with droned as the contact with spray is avoided. This technology is suitable for large farms and spraying operation can be done in inaccessible areas. Drones can also be used for survey and monitoring of the crop.

Though is very useful it has certain disadvantages and drawbacks. Quick discharge of batteries is one of the most important drawbacks. This coupled with non-availability of charging points at field level, long periods of charging and high cost of batteries limits the use of drones in rural areas. Lack of skilled manpower is another disadvantage associated with this technology. As this technology is comparatively new, standard operating procedures (SOPs) for different pesticides/ herbicides /bio fertilisers as well as their application in many corps is not readily available. Obstacles like electric lines, trees on field bunds etc are also posing difficulties while using this technology. Wind is another problem which caused drift of the chemical while spraying. Spraying in orchards and tree crops is difficult due to the hight of trees. Other disadvantages include high cost of drone, Transportation of drones, legal permissions / rules and regulations, lack of landing space in paddy fields, damage to flowers/ inflorescence, small and fragmented lands etc.

Demonstraion of Spraying in cashew orchard by KVK, VenkataramannaGudem

Measures for enhancing / accelerating the adoption:

Though it has many advantages, certain measures are needed for accelerating the adoption of Drone technology. As it is comparatively new, more awareness programmes and demonstrations in the farmers' fields need to be conducted to popularize this technology. Development of SOPs in different crops is another measure which gives confidence to adopt this technology. As the cost of drone is high financial assistance needs to be provided along with increased subsidy to bring the cost in the reach of the farmer. Since quick discharging of batteries /Less battery capacity is a major problem, high-capacity batteries should be made available at affordable prices. As the trained manpower to operate drones is not available, entrepreneurship development and training rural youth or progressive farmers is the need of the hour. Other measures include Low-cost drones, demonstration in participatory mode, involving Rythu Bharosa Kendras (RBKs) and Line departments, training master trainers, providing drones to custom hiring centres and stablishing service centres in small towns etc.

4.11. IRM: Dissemination of Pink bollworm management strategies

Pink boll worm is one of the major pests in cotton causing damage and effecting the yield levels. Management strategies are available to manage the pest to mimimize the damage which needs to be disseminated and popularized for wider adoption. Mating disruption technology (MDT) is another option to reduce the population of pink bollworm by disrupting the mating process, which is more eco-friendly and cost-effective, and less labor-intensive than existing techniques. These two activities were addressed in this project involving 6 KVKs in Telangana and Andhra Pradesh. These KVKs include Anantapur (Reddipalli), Prakasam (Darsi), Karimnagar (Jammikunta), Khammam (Wyra), Mahabubnagar (Palem) and Mancherial (Bellampalli).

Activity 1: Dissemination of IRM technologies

IRM technologies were demonstrated in two villages in each of 6 districts covering an area of 125 ha area. These technologies include timely sowing, install pheromone traps @ 2/acre for monitoring pink bollworm, need based insecticide application and other activities based on monitoring, termination of Crop 180 DAS and destroying residual stalks and partially opened bolls along with practicing recommended packages.

The incidence of pink bollworm in terms of green boll damage was recorded form 2 locations in Andhra Pradesh viz., Darsi and Anantapur and 4 locations from Telanaganai.e., Palem, Bellampalli, Wyra and Jammikunta. The incidence of pink bollworm at 120 DAS in IRM adopted plots was 4.04, 35.8, 8.00 and 2.25 per cent in Darsi, Anantapur, Jammikunta and Wyra, respectively. In contrast, the incidence was higher i.e., 5.4, 6.9, 7.9, 12 and 6.25 per cent in Darsi, Palem, Anatapur, Jammikunta and Wyra. Similar trend was observed at 150 DAS, with Palem recording nil incidence of pink bollworm.

Cost analysis revealed that on an average IRM farmers incurred Rs. 11330/ha towards the pest management while non IRM farmers incurred Rs. 16370/ha for the same. Thus there is a saving of Rs. 5040/ha by adopting IRM technology. IRM farmers realized comparatively higher yields due to better management of pink boll worm. On an average yield of IRM farmers was 16.27 q/ha while it was 13.86 q/ha with non IRM farmers which was 17 % higher. This higher yield was translated into 17% higher income (Rs. 14337/ha) to the IRM farmers when compared with non IRM farmers. This coupled with the saving of Rs. 5040/ha on insecticides, resulted in a benefit of Rs. 19377/ha to the IRM farmers due to following pink boll worm management strategies.

IRM Cotton field: KVK Anantapur (Reddipalli)

I adapted raised bed technology of cotton demonstrated by KVK Adilabad. I am truly benefited by this technology that has now spready to more than 500 ha in the district.

Mr. Meshram Maruthi
Sakinapur, Adilabad, TS

Activity 2: Mating disruption technology (MDT)

Gossyplure 4 % is a wax-based formulation which overstimulates males with a sex pheromone to disrupt the mating cycle and preventing males from mating with female moths. This is safer to non- target organisms, environment, humans and pets. This was applied at dosage of 500g per acre, in three splits under rainfed conditions or four splits under irrigated conditions, starting from 35 to 40 DAS, 65-70 DAS, 95–100 DAS and 125–130 DAS of cotton crop.

Overall incidence was slightly higher in treated plots as compare to the IRM practices. The incidence of the PBW at 120 DAS in the treated plot was 8, 4.04, 0.2, 52 and 3.09 per cent in Jammikunta, Darsi, Palem, Anantapur and Bellampalli, respectively. Whereas, relatively higher incidence of 12, 5.4, 3.2, 2, 58.6 and 8.66 per cent incidence from Jammikunta, Darsi, Wyra, Darsi, Anantapur and Bellampalli, respectively. Similar trend was observed at 150 DAS, with Palem recording zero per cent incidence in treated plot.

On an average IRM farmers required Rs. 9520/ha towards pest management while non IRM farmers incurred Rs. 16363/ha for the same. Thus there was a saving of Rs. 6843/ha on pest management due to the use of Mating disruption technology (MDT). Farmers who adopted MDT technology realized comparatively higher yields due to better management of pink boll worm. On an average they got 18.32 q/ha while the control farmers got 16 q/ha of cotton yield. Accordingly income was also higher with the MDT farmers (Rs. 130176/ha) when compared to control farmers (Rs. 110730/ha)

Demonstrating the application of Gossyplure4 % to the standing crop

4.12. NARI (Nutri- Sensitive Agricultural Resources and Innovation)

NARI is an ICAR initiative aiming at eliminating malnutrition in the country through the promotion of nutri gardens, biofortified crops and varieties and nutri thali. It is an innovative approach that put nutritionally rich food, dietary diversity and food fortification at the heart of overcoming malnutrition and micronutrient deficiencies and seeks to ensure their production in adequate quantity and quality to meet the dietary requirement of population in a sustainable manner.

Under this programme 50 KVKs of ICAR-ATARI, Zone-X established 1913 nutri gardens in 59 nutri smart villages in Andhra Pradesh, Tamil Nadu, Telangana and Puducherry. KVKs conducted 37 demonstrations on nutri garden, biofortified varieties of crops and value addition benefitting 1885 farmers and farm women. About 105 training programmes were organized for 7165 beneficiaries. 113 extension programmes were organized for 9589 beneficiaries. Through this programme KVKs created awareness on nutrition rich foods and encouraged the local women to establish and maintain nutri gardens for year-round availability of vegetables & fruits.

Table 4.12.1. Status of NARI programme during 2022-23

State	No. of KVKs	No. of Nutri Smart Villages	No. of Nutrigarden established	Demonstrations		Trainings		Extension Activities	
				No. of OFTs/ FLDs	No. of beneficiaries	No. of trainings	No. of beneficiaries	No. of extension activities	No. of beneficiaries
Andhra Pradesh	19	29	1170	16	530	33	1605	31	1822
Telangana	11	10	281	7	733	13	847	11	1205
Tamil Nadu	19	19	457	14	622	58	4689	69	6552
Puducherry	1	1	5	0	0	1	24	2	10
Total	**50**	**59**	**1913**	**37**	**1885**	**105**	**7165**	**113**	**9589**

Demonstration on Nutrigarden - KVK Wyra

My association with KVK Mahabubnagar YFA helped me to become a vegetable grower. I used to produce vegetables in our backyard . Through the technical assistance of the KVK, I began cultivating vegetables on our farmland and marketing in Bejinepally where there is excellent demand for fresh vegetables and earning Rs.1500 per day, thanks to the KVK.

Ms. Jayamma
Nandhimallagada, Mahabubnagar, TS

4.13. Capacity building of Farmers through trainings on profitable dairy farming and livestock management

'Capacity building of Farmers through trainings on profitable dairy farming and livestock management' programme was organized by KVKs of Zone-10 with the financial support from Ministry of Fisheries, Animal Husbandry and Dairying. The project aims at enhancing the productivity and achieving the potential capacity of livestock through short term trainings and knowledge upgradation in the field of livestock management and dairy farming with following twin objectives.

1. To impart knowledge and develop skill of the farmers in the field of livestock management and dairy farming.
2. To enhance income and generate employability among the farmers through adoption of scientific management and dairy farming.

The project was implemented by two KVKs in Andhra Pradesh and one KVK in Puducherry in 2022-23. KVKs conducted 8 training programmes benefitting 329 farmers to create awareness on management practices in sheep and goat rearing, backyard poultry rearing and management, scientific management of dairy cattle and buffaloes, feed and fodder management, disease prevention and health management in dairy cattle and buffaloes, scientific rearing practices for profitable dairy farming, healthcare and disease management in dairy cattle and buffaloes, integrated farming system approach for enhancing income sources, improved feeding practices in dairy cattle, strategic feeding for better performance of milch animals and clean milk production.

Table 4.13.1. Details of progress of the training programmes in Zone-X

S.No.	State/ UT	Name of the District/ KVK	No. of Trainings	No. of Participants		
				Male	Female	Total
1	Andhra Pradesh	Vizianagaram (Rastakuntubai)	2	41	39	**80**
2	Andhra Pradesh	Kadapa (Utukur)	3	94	36	**129**
3	Puducherry	Karaikal	3	94	36	**129**
	Total		**8**	**199**	**131**	**329**

Capacity building training programme for dairy farmers

4.14. Network Research Project on ' Climate Resilience ' under New Extension Methodologies and Approaches (NEMA)

Title of the network project : Impact of climate resilient technology interventions implemented through National Innovations in Climate Resilient Agriculture (NICRA) across different agro-ecological regions of India.

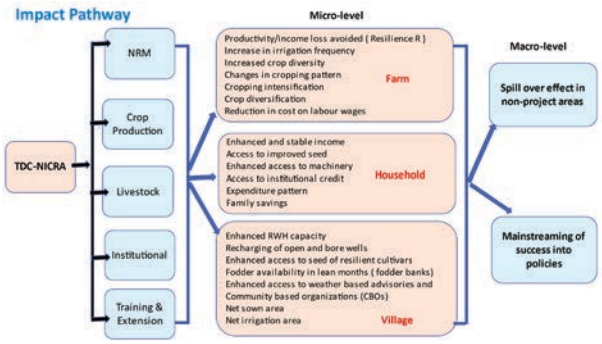
Introduction : The Technology Demonstration Component (TDC) of National Innovations in Climate Resilient Agriculture (NICRA) has been implemented since 2011-12 through 121 Krishi Vigyan Kendras (KVKs) of the country to build resilience into Indian Agriculture and to enhance the adaptive capacity of farmers to climatic variabilities. Under this network research project, the impact of best bet technologies with potential to sustain productivity of crop / livestock production systems during climatic stress demonstrated under four modules viz., Natural Resource Management (NRM), Crop production, Live stock and fisheries and Institutional interventions (Custom Hiring Centers (CHC), fodder bank, seed bank, village climate risk management committee (VCRMC) etc.,) is aimed to be studied at farm, household and village level using primary data from 30 project KVKs and secondary data from all the 121 NICRA KVKs. The extent of scaling up and scaling out that happened in NICRA villages and beyond project areas respectively was also to be studied through the project. The policy initiatives taken up by some state governments to scale up these successes in convergence with ongoing government schemes was also documented through this project. The perceived implementation feasibility, adoption barriers, incentive mechanism and key institutions that could encourage wider adoption were also documented.

Major objectives of the network project: This network project has been taken up with the following objectives,

- To estimate the micro-level impact of climate resilient technologies in terms of sustaining productivity and income of crop and livestock production systems during years of climatic vulnerability across different agro-ecological regions.
- To analyze the impact of climate resilient technologies in improving resource use efficiency, building resilience and adaptive capacity to climatic variability at farm, household and village level.
- To analyze the extent of upscaling and out-scaling of climate resilient technologies and knowledge on them in different vulnerable situations.
- To analyze the drivers and constraints for the adoption of promising climate resilient technologies.

Methodological framework of the research project : A sample of 30 KVKs among the 121 NICRA KVKs of the country was taken for the study in such a way that there is a fair representation of most of the agro-climatic regions of the country and also of all the climatic vulnerabilities addressed through NICRA. Primary data collected through structured questionnaires from NICRA and non-NICRA villages , secondary data available with NICRA KVKs and also responses collected from three types of stake holders (KVK staff, farmers and district line department officials) were used to quantify impact at farm, household and village level and to understand the drivers and constraints in the adoption of climate resilient technologies respectively. Suitable statistical methods like t-test, paired t-test and ANOVA were used to analyze the data.

Envisioned impact pathway of the project : The following is the impact path way of TDC-NICRA along with the impact parameters to be quantified at micro (Farm, household and village) and macro level.



Objective wise achievements of the study

Micro-level impact of climate resilient technologies in terms of imparting resilience to productivity and income

Primary data collected from 30 project KVKs employing a structured questionnaire were used for quantifying the impact of CRTs on productivity and income of crop and livestock production systems at farm level during the years of climatic stress. This was done for all successfully demonstrated CRTs in crop, NRM and livestock modules . A comparison of productivity and income with and without intervention during a stress year was made using a derived variable R

(Resilience Indicator) that indicates proportion of yield / income loss avoided. The resilience indicator 'R' is calculated as 1- (Normal yield – Yield with intervention) / (Normal yield – Yield without intervention). The concept of expressing impact of CRTs on productivity and income in terms of ' R' at farm level was developed by Dr. C.A.Rama Rao, a Co-PI on the project in 2018.

The following table shows resilience achieved both in productivity and income through the adoption of crop related CRTs in different NICRA villages of project KVKs. The resilience value

(R) ranged from 0.37 to 0.78 in productivity and 0.42 to 0.81 in case of net income for the cases that are presented here . The highest resilience value of 0.78 was achieved with the adoption of drought tolerant variety HPW 368 in wheat in Kullu district. Similarly a resilience value of 0.81 was achieved in income with the adoption of the short duration variety JS 9305 in Soybean in Nandurbar district.

Table 4.14.1. Impact of crop production interventions at Farm Level

S. No	Name of the KVK	Crop	Variety	Name of the intervention	Mean Resilience (R) in yield / ha	Mean Resilience (R) net income
1	Coochbehar	Rice	SS-1	Submergence tolerant variety	0.54	0.63
2	Coochbehar	Maize	DKC 908	Zero Tillage	0.65	0.64
3	Coochbehar	Mustard	Jhumka	Straw mulching after seeding	0.475	0.60
4	Gumla	Lentil	PL-08	Drought tolerant variety	0.37	0.42
5	Khammam	Chillies	LCA-625	Virus tolerant variety	0.57	0.53
6	Kullu	Maize	Bajuara makka	Short duration HYV	0.74	0.74
7	Kullu	Wheat	HPW-368	Drought tolerant variety	0.78	0.72
8	Nandurbar	Soybean	JS-9305	Short duration variety	0.67	0.81
9	Nadurbar	Chickpea	Digvijay	Drought tolerant variety	0.55	0.58
10	Tikamgarh	Chickpea	JG-12	Wilt tolerant variety	0.74	0.66
11	Tikamgarh	wheat	GW-3288	Zero tillage	0.77	0.71
12	Tikamgarh	Mustard	Giriraj	Crop diversification with mustard	0.73	0.62

Productivity and income resilience achieved through adoption NRM related CRTS in different districts is presented in the following table. Resilience in the range of 0.43 to 0.96 was achieved both in productivity and income. Maximum resilience value of 0.96 both in productivity and income was achieved in the district of Banaskantha in Gujarath with the adoption of deep summer ploughing and micro-irrigation in castor.

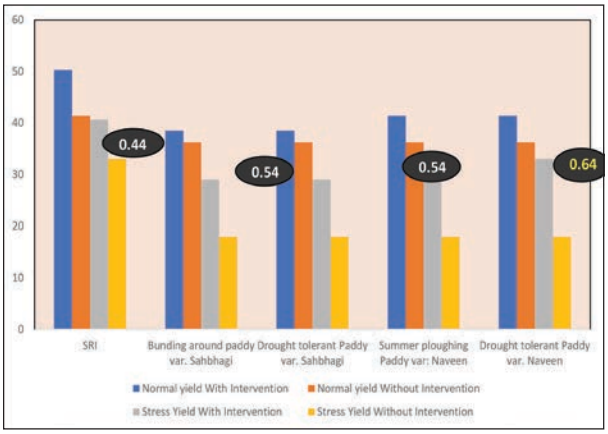
Table 4.14.2. Impact of NRM interventions at Farm Level

S. No	Name of the KVK	Crop	Variety	Name of the intervention	Mean Resilience (R) in yield / ha	Mean Resilience (R) net income
1	Banaskantha	Castor	GCH -7	Deep plouging in summer	0.47	0.50
2	Banaskantha	Castor	GCH-7	Deep Summer Ploughing with micro irrigation system	0.96	0.965
3	Coochbehar	Garlic	343	Straw mulching	0.75	0.71
4	Faridkot	Basmati Rice	PUSA 1718	Spray with potassium nitrate	0.69	0.65
5	Faridkot	Rice	PR 114	Spray with potassium nitrate	0.57	0.64
6	Faridkot	Wheat	HD 3086	Spray with potassium nitrate	0.66	0.58
7	Khammam	Cotton	Raasi 65	Broad bed Furrow	0.73	0.63
8	Tikamgarh	Blackgram	PU-1	Broad bed Furrow	0.78	0.73
9	Tumkur	Groundnut	K-6	Trench cum bunding	0.43	0.44
10	Tumkur	Brinjal	Arka Sirish	Critical irrigation with harvested pond water	0.75	0.69

A comparison of resilience achieved in the productivity of paddy in Godda district of Jharkhand through adoption various in crop related CRTs in a stress year is depicted in the following graph. Highest productivity resilience of 0.64 was achieved with the adoption of the drought tolerant variety Naveen alone or in combination with summer ploughing.

Productivity resilience achieved in Paddy due to adaption of CRTs (KVK, Godda)

From the results obtained at farm level, all the successfully demonstrated CRT interventions



across the modules either singly or in combination built significant levels of resilience both into productivity and income (depends on the market price of the commodity) with a wide variation among them.

Impact of climate resilient technologies in improving resource use efficiency, building resilience and adaptive capacity household and village level

The impact of CRTs in improving resource use efficiency and to build resilience at household and village level was quantified in terms of various impact parameters. The following table depicts impact of CRTs on household level income from three production systems (Agriculture, horticulture and livestock) in NICRA villages as a comparison of before and after NICRA project situations . Significant increase in household level income in one or the other production system was invariably recorded in NICRA households of all the districts which is a major impact of CRTs at household level.

Table 4.14.3. Household lovel Impact of CRTs in terms of income from different production systems

S.No	Name of the KIVK	Income from different production systems (Rs. / year before NICRA)			Income from different production systems (Rs. / year after NICRA)		
		Ag.	Hort.	LS	Ag.	Hort.	LS
1.	Alleppuzha	44423	---	24548	54064*	----	58612*
2.	Aurangabad	34375	3993	6315	43500*	7260	17792*
3.	Banaskantha	261397	--	73195	267621	--	105064*
4.	Coochbehar	29775	19225	4814	45900	45375	20902 *
5.	East Sikkim	15660	21602	42069	20914*	30677*	77298*
6.	Faridkot	452100	--	13894	672575*	--	30609*
7.	Godda	22425	49245	13491	56438*	107887*	25150*
8.	Jalna	103025	30375	19100	217150*	63250*	83325*
9.	Jhabua	142354	19116	28600	225830*	33402*	54746*
10.	Khammam	145717	26507	40256	201748*	33457	79823*
11.	Kullu	85342	88684	39131	159236*	226315*	79184*
12.	Lunglei	5187	5359	48035	12250*	75531*	124482*
13.	Namakkal	91875	48625	31575	151625*	96925*	47725*
14.	Nandurbar	55452	6342	7216	87417*	16922*	25421*
15.	Tikamgarh	208703	11477	55411	457000*	43830*	252735*

The impact of climate resilient technologies across four modules was quantified and a comparison of before and after project situation was made at village level. There was a significant improvement in the values of several impact indicators at village level . The following table shows the impact of crop production technologies at village level.

Table 4.14.4. Impact of crop production technologies at village level

Impact indicator		Mean	SD	SEM	t value
Quantity of seed of improved crop varieties produced in the village (q)	After NICRA	430.13	784.91	175.51	2.167**
	Before NICRA	146.62	278.58	62.29	
Number of farmers using improved varieties	After NICRA	208	222.11	28.68	6.400*
	Before NICRA	39	41.17	5.31	
Area under horticulture (ha)	After NICRA	57.76	100.73	11.63	5.237*
	Before NICRA	26.5	54.66	6.31	
Area under double cropping in the village (ha)	After NICRA	169.68	208.07	27.32	5.185*
	Before NICRA	85.99	149.34	19.61	

Scaling up of climate resilient technologies in NICRA villages and beyond the project areas

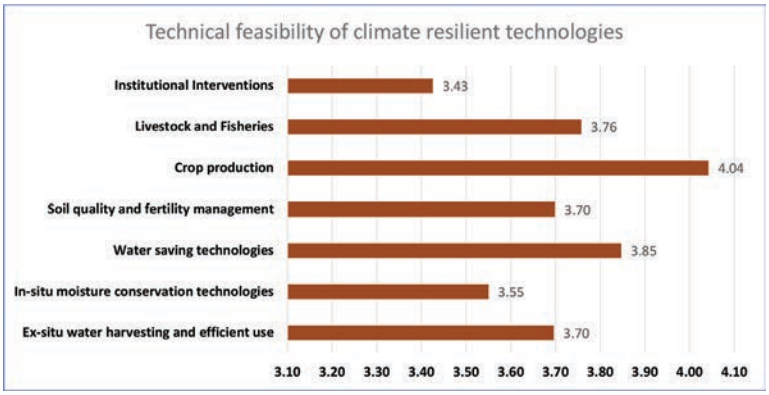
There has been significant scaling up of the successfully demonstrated climate resilient technologies in NICRA villages and spill over effect was recorded to a limited extent beyond project areas. In some states like Maharashtra, Orissa, Assam, Madhya Pradesh and Mizoram, the state governments initiated schemes for scaling up of climate resilient technologies as a part of ongoing schemes or as new schemes funded by different agencies. The following is an account of spread of climate resilient crop varieties in the districts under ATARI, Zone X.

Table 4.14.5. Scaling up of climate resilient varieties in Zone X

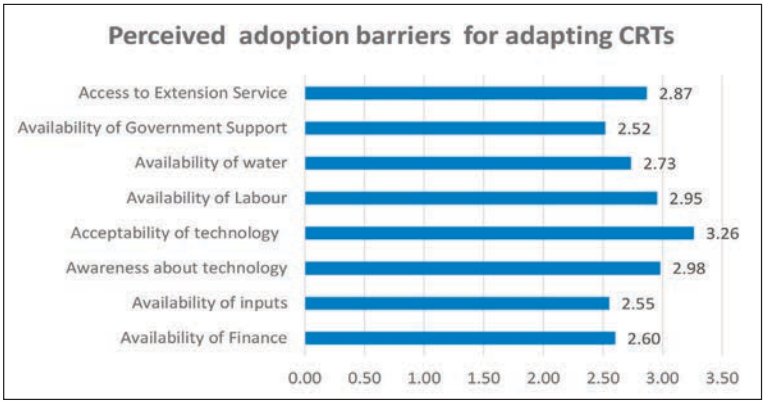
S. No	Name of the KVK	Crop	Variety	Extent of adoption (ha) - base line in NICRA village	Spread in the district (ha) – (2018-19)	Productivity gain (%)
1	Chittoor (RASS), A.P	Groundnut	Dharani	10	5000	19.56
2	Srikakulam, A.P	Paddy	MTU-1061	134	49400	43.08
4	Kurnool I, AP	Foxtail millet	SIA-3088	26	1200	43.71
3	Khammam (Wyra), Telangana	Paddy	WGL-44	96	481	8.21
5	Tiruvarur, Tamil Nadu	Paddy	CR 1009 sub 1	40	60000	10.65

Implementation feasibility of Climate Resilient Technologies

Implementation feasibility of CRT interventions is perceived as an interplay of five indicators viz., Technical Feasibility, gender inclusivity, synergy with government schemes, cost/ investment involved and benefits realized (Individual or group). The following graph shows the response of stake holders (KVK scientists, Officials of line departments and farmers) on the technical feasibility of a major category of interventions. Crop production interventions got a positive and highest value of response followed by water saving and livestock interventions for obvious reasons of ease of adoption in case of crop production and support by government schemes in case of livestock and water saving (micro-irrigation) technologies.



The response of the three categories of stake holders was also collected and analyzed on their perceived adoption barriers that come in the way of adoption of climate resilient technologies. The following graph represents average score or weightage of responses on different adoption barriers across CRT interventions. It was noticed from the mean of responses that acceptability of the technology is the strongest barrier of adoption followed by awareness about the technology and availability of labour.



4.15. Out scaling of natural farming through KVKs

Natural farming is a "chemical- free farming and livestock based " soundly grounded in agro-ecology as a diversified farming system that integrates crops, trees and livestock, allowing the optimum use of functional biodiversity. In India, Natural farming is promoted as Bhartiya Prakritik Krishi Paddhati Programme (BPKP) under centrally sponsored scheme - Paramparagat Krishi Vikas Yojana (PKVY). BPKP is aimed at promoting traditional indigenous practices which reduce externally purchased inputs, largely based on on-farm biomass recycling with major stress on biomass mulching, use of on-farm cow dung-urine formulations; periodic soil aeration and exclusion of all synthetic chemical inputs.

The central sector sponsored "Outscaling of natural farming through KVKs" has been implemented by 44 kvks of Zone X (23 in andhra pradesh, 8 in telangana,12 in tamilnadu and 1 in pondicherry) with a financial support of Rs.122.983 lakhs from DA&FW (List of KVKs given below).

Table 4.15.1. KVKs of Zone X implementing the project "Out-scaling of Natural Farming through KVKs"

S.No	State	No. of KVKs	Names of the KVKs
1	Andhra Pradesh	23	Vizianagaram, Srikakulam, Visakhapatnam (BCT), Visakhapatnam (Kondempudi), East Godavari (Pandirimamidi), East Godavari (Kalavacharla), West Godavari (Undi), West Godavari (VR Gudem), Krishna (Garikapadu), Krishna (Ghantasala), Guntur (Lam), Prakasam (Darsi), Prakasam (Kandukur), Nellore I, Nellore II (Periyavaram), Chittoor (RASS), Chittoor (Kalikiri), Anantapur (Reddipalli),Anantapur (Kalyandurg), Kadapa (Utukuru), Kadapa II (Vonipenta), Kurnool (Yagantipalli), Kurnool (Banavasi)
2	Tamil Nadu	12	Ariyalur, Erode, Karur, Tirunelveli, Krishnagiri, Tiruvallur, Cuddalore, Salem, Kancheepuram, Trichy, Villuppur, Ramnad
3	Telangana	8	Rangareddy, Medak (Tuniki), Khammam (Wyra), Kothagudem, Nalgonda (Gaddipalli), Nalgonda (Kampasagar), Nizamabad and Mancherial
4	Puducherry	1	Pondicherry

This project has been implemented by 44 kvks of Zone X (23 in andhra pradesh, 8 in telangana,12 in tamilnadu and 1 in pondicherry) with a financial support of Rs.122.983 lakhs from DA&FW.

The major activities that were taken up by the KVKs under this project during 2022 are training programs, awareness programs and demonstrations to show case the potential of natural farming practices in different crops. The achievement the KVKs across different states in terms of these three activities is given below.

Table 4.15.2. Achievements of the projects

S. No	State	Awareness programmes		Training programmes		Demonstrations	
		Number	No. of partcipants	Number	No. of partcipants	Number	No. of partcipants
1	Andhra Pradesh	237	14734	23	874	92	120
2	Telangana	65	4945	8	312	32	54
3	Tamil Nadu	149	16524	12	456	48	74
4	Puducherry	11	1387	1	38	4	6
5	Zone total	462	37590	44	1680	176	254

Activities conducted under Awareness Program of Natural Farming by KVKs

KVKs implementing the project undertook the following activities to bring awareness on natural farming in different crops.

- Development of Natural Farming Block of 2-5 ha on its farm.
- A minimum of two exposure visits of group of farmers to the Natural Farming block of KVK every week (from each block of the respective district).
- Exposure visit of farmers to the successful Natural Farming practicing farmers
- Method demonstration on preparation of different inputs of Natural Farming
- Croup meetings with the farmers at village level
- Distribution of leaflets, pamphlets and other literature regarding natural farming to the farmers
- Arranging exhibition at the KVK ground on Natural Farming along with posters.
- Radio talks on Natural farming
- Short WhatsApp messages having content related to Natural farming to the farmer groups in respective villages.

In the field demonstrations under natural farming of various crops it was noticed that there was a reduction in the productivity during the year of introduction of natural farming in these fields . The reduction in productivity varied from crop to crop. In paddy, the productivity was reduced in the range of 3.48 to 53.06 per cent in comparison with inorganic method of cultivation of the crop. Similarly productivity decline in the range of 17.14-51.67 %, 3.19-35.18 %, 14.66-21.21% and 12.19-53.48 % was recorded in tomato, groundnut, blackgram and chilles respectively. The results of these field demonstrations are presented in the following table.

Table 4.15.3. Achievement of field demonstrations on natural farming

S. No	State	Name of KVK	Crop	Variety	Cost of cultivation (Rs./ha)		Yield / ha (q.)		% red. in yield in Demos. During 1st year
					Demo.	Inorganic	Demo	Inorganic	
1	Andhra Pradesh	Vizianagaram	Paddy	MTU 1224	51250	54.2	55750	58.2	8.7
			Turmeric	Pragathi	160000	290	210000	380.0	23.6
2	Andhra Pradesh	Srikakulam	Paddy	BPT 5204	52850	52	57650	58.0	10.34
			Blackgram	LBG 787	16500	12.0	17500	15.6	23.07
3	Andhra Pradesh	Visakhapatnam (BCT)	Paddy	RGL-2537	56400	52.5	63480	56.2	6.58
			Greengram	WGG--42	23000	5.4	23400	6.6	18.18
4	Andhra Pradesh	Visakhapatnam (Kondempudi)	Niger	JNS 28	5460	5.21	7100	5.82	10.48
			Ginger	Nadia	172450	98.45	208350	125.62	21.62
5	Andhra Pradesh	East Godavari (Kalavacharla)	Paddy	RNR 15048	36000	46.87	43000	52.5	10.72
			Bhendi	Arka Anamika	33000	80	36200	102	21.56
6	Andhra Pradesh	East Godavari (Pandirimamidi)	Paddy	MTU-7029	66690	62.98	85709	66.7	5.57
			Brinjal	Local	51000	142.1	82000	168.4	15.61
7	Andhra Pradesh	West Godavari (Undi)	Black gram	LBG 932	11600	8.75	17400	13.0	32.69
8	Andhra Pradesh	Krishna (Garikapadu)	Tomato	Arka samrat	180000	310	230000	641.5	51.67
			Chilli	Classic	220000	20.25	348400	37.5	46.00
9	Andhra Pradesh	Krishna (Ghantasala)	paddy	MTU 1061	56450	57.5	78125	64.7	11.12
			blackgram	LBG 752	31125	12.4	51450	16.5	24.84
10	Andhra Pradesh	Guntur (Lam)	Groundnut	Tag 24	92250	33.5	95,720	38.5	12.98
			Turmeric	salem	1,85,000	50	2,38,000	55	9.09

S. No	State	Name of KVK	Crop	Variety	Cost of cultivation (Rs./ha)		Yield / ha (q.)		% red. in yield in Demos. During 1st year
					Demo.	Inorganic	Demo	Inorganic	
11	Andhra Pradesh	Prakasam (Darsi)	Paddy	BPT-5204	75000	41.25	90000	53.75	23.25
			Paddy	BPT-5204	87500	51.25	95000	62.5	18.00
12	Andhra Pradesh	Nellore I	Paddy	Mysore Mallika	54687	50.33	72312	52.55	4.22
			Paddy	BPT-5204	32500	75.25	62500	85.94	12.43
13	Andhra Pradesh	Nellore (Periyavaram)	Acid lime	Petlur selection 1	68900	103.4	88500	130.23	20.63
			Mango	Baneshan, Totapuri	95600	130.7	130000	158.5	17.53
14	Andhra Pradesh	Chittoor (RASS)	Groundnut	Girinar 3	1,20,000	31.5	72520	32.54	3.19
			Chilli	G5	1,06,000	4	156500	8.6	53.48
15	Andhra Pradesh	Chittoor (Kalikiri)	Groundnut	Nitya Haritha (TCGS-1157)	48375	21	53375	26	19.23
16	Andhra Pradesh	Anantapur (Reddipalli)	Groundnut	K-1812	49750	32.2	53990	34.5	6.66
			Sweet orange	Rangapur	409150	147	425500	232	36.63
17	Andhra Pradesh	Anantapur (Kalyandurg)	Bengalgram	NBeG-452	26120	17.8	38375	23.05	22.77
			Pomegranate	Bhagwa	202580	102.3	230190	111.21	8.01
18	Andhra Pradesh	Kadapa (Utukuru)	Groundnut	TCGS 1694	204785	3289	237250	3650	9.89
19	Andhra Pradesh	Kadapa (Vonipenta)	Paddy	BPT- 5204	42,500	41.5	55000	43	3.48
			Black gram	TBG-104	45,000	19.2	50000	22.5	14.66
20	Andhra Pradesh	Kurnool (Banavasi)	Groundnut	Kadiri Lepakshi	57150	12	62750	13.1	8.39
			chilli	NTJ-5	35000	36	40000	41	12.19
21	Andhra Pradesh	Kurnool (Yagantipalli)	Bengalgram	JG 11	38875	16	43875	17.5	8.57
			Rice	BPT- 5204	52500	56.25	58650	65.5	14.12
22	Telangana	Rangareddy	Guava	Arka Kyathi	124200	154	189100	158	2.53
23	Telangana	Medak (Tuniki)	Paddy	RNR15048	69625	45	71250	57.5	21.73
			Tomato	US440	87500	145	108450	175	17.14
24	Telangana	Kothagudem	Paddy	KNM-1638	46218	48.2	55516	52.2	7.66
			Groundnut	Kadiri lepakshi	193785	31.89	2,17,250	35.5	10.16
25	Telangana	Mancherial	Jowar	CSV-29R	28500	14	39000	19	26.31
			Paddy	JJL- 24423	66875	37.25	79500	55.25	32.57
26	Telangana	Khammam (Wyra)	Paddy	RNR 15048	52304	46.75	67338	68.25	31.50
			Tomato	US 440	142560	365	183000	545	33.02
27	Telangana	Nalgonda (Gaddipalli)	Paddy	BPT-5204	53,500	43.75	62,300	56.23	22.19
			Tomato	Saaho	1,22,500	345	1,78,100	514	32.87
28	Telangana	Nizamabad (Rudrur)	Turmeric	Armoor Red	75000	45	174600	57	21.08
			Paddy	Mysur mallika	64500	37.5	68750	67.5	44.44
29	Tamil Nadu	Arialur	Paddy	Karupu Kavuni	42500	23	54000	49	53.06
			Groundnut	VBN 8	20000	7	28000	7.5	6.66
30	Tamil Nadu	Karur	Groundnut	Dharani	66250	22.75	71250	24.5	7.14
			Brinjal	Local	58500	11	78500	27	59.25
31	Tamil Nadu	Kancheepuram	Paddy	CO 51	52275	61	62125	68	10.29
			Jasmine	Madurai malli	120000	25	210000	30	16.66

S. No	State	Name of KVK	Crop	Variety	Cost of cultivation (Rs./ha)		Yield / ha (q.)		% red. in yield in Demos. During 1st year
					Demo.	Inorganic	Demo	Inorganic	
32	Tamil Nadu	Cuddalore	Groundnut	CO 7	62500	17.5	89400	27	35.18
			Sugarcane	CO 86032	165000	1500	238500	2000	25.0
33	Tamil Nadu	Tiruvallur	Paddy	Poongar (Traditional variety)	42000	42	65000	74	43.24
			Lablab	Paddy-Thuyamalli (Traditional variety)	29750	38	50000	57	33.33
34	Tamil Nadu	Tirunelveli	Paddy	Thuyamalli (Traditional variety)	46250	43.4	60000	45	3.55
			Bhendi	Kashi Lalima	37500	100	45850	120	16.66
35	Tamil Nadu	Krishnagiri	Ragi	Karuppu Kavuni	68300	28.1	72500	29.6	5.06
			Turmeric	Geeraga Samba	69500	29.5	75200	31.4	6.05
36	Tamil Nadu	Trichi	Paddy	Mappiilai Samba	51000	32.5	59500	38.5	15.58
			Paddy	Karuppu Kavuni	51500	37.0	61500	41.0	9.75
37	Tamil Nadu	Villuppuram	Paddy	Karuppukavuni	34500	48.75	57325	61.75	21.05
			Blackgram	VBN8	33125	18.75	40750	23.8	21.21
38	Tamil Nadu	Salem	Paddy	Seeraga samba	38500	45	53000	65	30.76
			Groundnut	Kathiri leepakshi	45000	21	58000	30	30.0
39	Tamil Nadu	Ramnad	Paddy	RNR 15048	44500	36	52650	42	14.28
			Chilli	Mundu chilli	36550	10	43860	13	23.07
40	Puducherry	Pondicherry	Paddy	Traditional variety	27250	37.5	51500	45	16.66
			Groundnut	G7	56700	22.1	66900	23.8	7.14

I explored the potential of sericulture as an alternative source of income and approached KVK Theni. With their technical support, I established a mulberry plantation and sericulture unit. I am earning Rs.3,60,000 per year, exceeding my expectations. I am happy to provide employment opportunities for the local community.

Mr. Vijayan
Velayuthapuram, Theni, TN

Method demonstration on the preparation of " *Ghanajeevamrutham"*- KVK, East Godavari – Andhra Pradesh

Preparation of natural pesticidal concoctions – KVK, Villuppuram, Tamil Nadu

Green manuring before main crop – KVK, Nizamabad -Telangana

Awareness programme on natural farming – KVK, Nalgonda (Gaddipalli) -Telangana

Rural youth turned a successful natural farmer

Sri. B. Tirumalaih who studied ITI turned into a natural farmer and cultivated papaya intercropped with coriander and turmeric in his 5 acre farm following all the techniques of natural farm. He raised green manure with Navadhanyalu (9 types of grains) and ploughed them back to sustain soil fertility status. He prepated the necessary organic farming inputs like Ghanajeevamrutham, Neemasthram, Dasaparni, Agniastram, , egg amino acids, Banana solution, sour butter milk with asafetida and used on papaya, coriander and turneric. He used bio-fertilizers like *Trichoderma viride, Pseudomonas, Azotobacter* etc also for control of diseases. With the technical back stopping of KVK, Kadapa (Vonipenta) he could earn a net income of Rs.9.5 laksh through natural farming of Papaya intercropped with turmeric and coriander.

4.16. Skill training programmes of ASCI (Agricultural Skill Council of India) organized during 2022-23

During 2022-23, 8 KVKs of the zone organized 14 skill training programmes of 200 h duration under ASCI. Training was imparted to 25 rural on 6 different job roles. The training programmes include 70 per cent of hands of training and 30 per cent of theory classes on the respective job roles. The trainees are also taken on exposure visits to entrepreneurial units related to the job role for gaining better understanding of the subject. At the end of the training , all the trainees have to undergo assessment test by ASCI and the trainees who clear the test will be given certificates. The details of the training programmes organized during 2022-23 are furnished below.

Table 4.16.1. Details of ASCI skill training programmes organized during 2022-23

S.No	State	Name of the KVK	Job role
1	Andhra Pradesh	Chittoor (RASS)	Backyard Poultry farmer
2			Small Mushroom grower
3			Small Organic Cultivator
4	Andhra Pradesh	Visakhapatmam - I (BCT)	Small Mushroom Grower
5			Garden Keeper
6	Telangana	Karimanagar (Jammikunta)	Garden Keeper
7	Telangana	Mahaboobnagar (YFA)	Garden Keeper
8			Small Mushroom grower
9	Telangana	Medak-II (Tuniki)	Garden Keeper
10			Honey Bee farmer
11	Tamil Nadu	Arialur	Small Dairy Farmer
12			Small Organic Cultivator
13	Tamil Nadu	Erode	Small Organic Cultivator
14	Tamil Nadu	Krishnagiri	Small Organic Cultivator

Garden Keeper training – KVK, Medak II , Telangana

Distribution of certificates to trainees – KVK, Chittoor (RASS), A.P

4.17. Mera Gaon Mera Gaurav

"Mera Gaon Mera Gaurav" (MGMG) is an innovative initiative of Indian Council of Agricultural Research (ICAR), 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. It was implemented by 10 ICAR- institutes in Andhra Pradesh, Telangana and Tamil Nadu states. 306 villages were adopted by 66 teams of scientists and they organized 1154 activities which benefited 46332 farmers and rural people.

Table: 4.17.1. Details of institutes participating in MGMG programme

S No.	Name of institute/ university	No. of Teams	No of Scientists	No. of villages
Andhra Pradesh				
1	Indian Institute of Oil Palm Research (IIOPR), Pedavegi	3	14	4
2	Central Tobacco Research Institute (CTRI), Rajahmundry	7	33	4
Telangana				
1	Indian Institute of Oilseeds Research (IIOR), Hyderabad	8	33	40
2	Indian Institute of Millets Research (IIMR), Hyderabad	4	4	2
3	Directorate of Poultry Research (DPR), Hyderabad	5	18	6
4	National Research Centre on Meat (NRCM), Hyderabad	3	13	9
5	Central research Institute for Dryland Agriculture (CRIDA), Hyderabad	8	57	40
Tamil Nadu				
1	Central Institute of Brackishwater Aquaculture, Chennai	5	52	10
2	Sugarcane Breeding Institute (SBI), Coimbatore	18	72	90
3	National Research Centre for Banana (NRCB), Tiruchirapalli	5	10	21
	Total	66	**306**	**226**

About 306 scientists in 66 teams visited 226 villages and conducted various activities in the adopted villages involving the farmers. 59 training programmes were conducted on agriculture, fisheries, value addition and other related aspects benefiting 2129 farmers.116 interface meetings/Kisan Ghoshties were organized with the participation of 3123 farmers. A total of 142 demonstrations were conducted on various aspects of agriculture, aquaculture, climate change, mechanization, water conservation, new crops, varieties etc. involving 1759 farmers. Provided mobile advisories (318 Nos.), literature (112 Nos.) and created awareness (128 Nos.) on improved agricultural practices, soil health, pest and disease management, nutrition, value addition and government schemes to 18,596 farmers &rural women. All these efforts by the ICAR-institutes resulted in employment generation, higher yields from the crops and income generation during off season thereby increasing the income levels of the farmers and rural people.

Table: 4.17.2. Details of activities conducted under MGMG programme

S. No.	Name of activity	No. of activities conducted	No. of farmers participated & benefitted
1	Visit to village by teams	279	4028
2	Interface meeting/ *Goshthies*	116	3123
3	Training organized	59	2129
4	Demonstrations conducted	142	1759
5	Mobile based advisories	318	2455
6	Literature support provided (No)	112	1323
7	Awareness created (No)	128	5829
	Total	**1154**	**46332**

4.18. Jal Shakthi Abhiyan

Jal Shakti Abhiyan is a collaborative effort of various ministries of Govt. of India, State Governments, ICAR-KVKs, coordinated by the Department of Drinking Water and Sanitation, Ministry of Jal Sakti. The Ministry has taken up a nation-wide campaign "Jal Shakti Abhiyan: Catch the Rain"(JSA:CTR) focusing on saving and conserving rainwater with the theme "Catch the rain, where it falls, when it falls" from 29 March to 30 November 2022. The program covers both urban and rural areas of all the districts in the country. The JSA:CTR had five focused interventions- (1) rainwater harvesting & water conservation (2) enumerating, geo-tagging & making inventory of all water bodies; preparation of scientific plans for water conservation (3) Setting up the Jal Shakti Kendra in all districts (4) intensive afforestation and (5) awareness generation.

During the year 2022, 69 KVKs in Andhra Pradesh, Tamil Nadu, Telangana and Puducherry organized the programme to create awareness among farmers on water conservation techniques. A total of 139 training programmes and 93 melas ware conducted by the KVKs benefitting 20856 farmers in the zone. Literature on water conservation techniques was also distributed to the farmers.

Through this programme the farmers were made aware of the water conservation techniques, rainwater harvesting methods, renovation of traditional and other water bodies, water shed development, farm pond constructions, bore well recharge techniques, crop drought tolerant and drought mitigation techniques, recharge structures, intensive agro forestry promotion and micro irrigation like drip irrigation, sprinkler irrigation and rain gun irrigation methods.

Training programme

Kisan Mela

Table: 14.18.1 Special campaign on SwachhataAbhiyana Conducted October 2022-23

S. No.	Name of State		Training Program		Mela		Total	
		No. of KVKs	No. of Trainings	No. of Farmers	No. of Mela	No. of Farmers	Trainings+ Mela	No. of Farmers
1	Andhra Pradesh	22	34	2205	17	2388	51	4668
2	Tamil Nadu	30	68	4051	60	8314	116	11346
3	Telangana	15	33	1723	15	3011	43	4486
4	Pondicherry	2	4	206	1	150	5	356
	Total	**69**	**139**	**8185**	**93**	**13863**	**215**	**20856**

4.19. Swachhta activities of KVKs

ICAR-ATARI, Hyderabad has been implementing Swachh Bharat Mission for promoting cleanliness. KVKs of zone 10 are conduction various programmes every month. There programmes include Cleaning of office main building and farmers hostel, premises, painting, planting of ornamentals plants in office premises, Tree plantation, supplying planting materials to farmers, removing plastic wastes from farm, awareness programme on plastic usage, Removal of weeds in KVK fields & office premises, parthenium awareness, Removal of plastic wastes from farms & around farmers hostel, pruning of orchard trees, Segregation of agri waste for vermicompost, Conducted training to the farmers on Swachhata Abhiyan and explained different agriculture practices to obtain wealth from waste, Awareness on residue recycling of biodegradable waste through composting, Sanitation and solid waste management, awareness programmes on hygiene and sanitation to school children, farm women etc. created awareness to During the year 2022-23 KVKs of zone 10 conducted these activities with the participation of 46198 rural population.

Special campaign on Swachhata Abhiyan - October 2022-23

Special campaign on Swachhata Abhiyana conducted during October 2022-23 in which Swachhata activities were conducted every day of the month. During October 2022-23 these activities were conducted with the participation of 41983 members which include 21561 farmers, 11333 school students, 7496 staff members, 883 dignitaries and 799 civil society members.

Table: 4.19.1. Special campaign on SwachhataAbhiyana Conducted October 2022-23

State Name	No of staff members participated	No of Dignitaries	Farmers	Members of civil Society	School children	Tweets/ Re tweets posted	Total	No Of Press Clippings published
Andhra Pradesh	2372	157	3473	262	5042	185	11188	24
Telangana	1883	280	3621	330	3392	277	9541	34
Tamil Nadu	2903	440	14362	207	2793	212	20698	24
Puducherry	338	6	105	0	106	0	556	3
Total	7496	883	21561	799	11333	674	41983	85

Swachhta Pakhwada - 16th to 31at December 2022

Krishi Vigyan Kendras of ATARI-Zone-10, Hyderabad organized Swachhta Pakhwada during 16th to 31at December 2022. KVKs organized each day one activity mentioned in the table with the participation of staff members, farmers, farm women, school children. VIP dignitaries of civil society are invited to participate in these activities. This Swachhta Pakhwada was celebrated with 13572 participents involving 156 VIPs of civil societies.

KVK,Villupuram, TN: -Cleaning of Administrative building premises

4.20. Kisan Sarathi

Kisan Sarathi is a digital platform which facilitates farmers to get 'right information at right time' in their desired language. This was launched jointly by Shri Narendra Singh Tomar, Minister for Agriculture and Farmers Welfare with Shri Ashwini Vaishnaw, Minister for Electronics and Information Technology, through video conference on 16th July 2021 on 93rd ICAR Foundation Day and the event was witnessed by farmers, stakeholders and partners of ICAR, DARE, MeitY and KVKs across the country. It provides Customizable and need based information delivery to Farmers and Know Your Farmers (KYF) facility to subject matter Experts which enhances the outreach of National Agricultural Research, Education and Extension System in the country.

This initiative of Kisan Sarathi can empower farmers with technological interventions to reach farmers in remote areas. With this digital platform, the farmers can interact and avail personalized advisories on agriculture and allied areas directly from the respective scientists of Krishi Vigyan Kendra (KVKs). The services of Kisan Sarathi can be availed through IVRS/ Toll-free number 1800 123 2175.

The platform features include personalized advisory based on farm and farmers profile, live interaction in local language with domain experts, anywhere anytime access on past advisories, dashboard and MIS for monitoring and evaluation, call facilities – call on mobile, click to call, call conferencing, call recording, access to knowledge and farmer database - know your farmer (KYF), push alert message based on location and domain and facility to register through toll free and web. A total of 909894 farmers have been registered in the portal by the KVKs of Andhra Pradesh (358217), Tamil Nadu (288915), Telangana (259818) and Puducherry (2944).

I adopted IFS on my 1 acre of land with the technical and input assistance from KVK, West Godavari (VR Gudem). Through composite fish culture, vegetables, poultry, paddy and maize crops I am earning Rs.1,25,100 which is 4 times higher than conventional farming. My family is getting nutritious food. I am encouraging and educating fellow farmers too.

Mr. Vanka Raju
Ravigudem, Buttaigudem, AP

5. Awards and Recognitions

Farmers

Mrs Pappammal, Progressive Farm Women and contact SAC member of KVK Coimbatore received Padmashree from the Hon'ble President of India. Mrs Pappammal was honoured in the 75th Republic Day parade

Sri. Madhu Sudhan Reddy, Nagarkurnool received best farmers award from PJTSAU

Mr. Doss, progressive farmer of KVK Villupuram received best innovative Farmer Award

Mrs.Kavitha, CEO of Kazhani FPO, KVK Erode was awarded National Level Outstanding FPO award by Hon'ble Minister for Agriculture, Government of India and Best Performing FPO at state level by Hon'ble Finance Minister of Tamil Nadu.

Mr.Ramachandran, contact farmer of KVK Thoothukudi received the Green (Pasumai Viruthu) award for Banana fiber value added product production from the Minister of State for Health and family welfare

Th.K.Vasudevan, Seed producer and contact farmer of KVK Tiruchirappalli received Vellan Chemmal award from TNAU

Th. Devarajan, contact farmer of KVK Tiruvallur received Velan Chemmal Award

Mr.Deivakana, SHG Fedaration Leader and Contact Farmer of KVK Theni received Best SHG Fedaration Award

Sri. T. Ranapratap, contact farmer of KVK Khammam (Wyra) received best farmer award from Eruvaka foundation

Sri. M. Venkateshwar Rao, progressive farmer of KVK Khammam (Wyra) received the best farmer award from PJTSAU

Smt Suram Sreedevi progressive farmer from Kadapa bags Ugadi Puraskaaram 21-22

Smt. Asi Dhanamma, progressive farmer from KVK West Godavari (VR Gudem) received IARI Innovative Farmer Award in Pusa Krishi Vigyan Mela 2022

- Thiru. M.Bhaskaran, Progressive farmer of KVK Karaikal received Best Organic Farmer at AGRI EXPO-2022, Tamil Nadu All Farmers Association & SRM University, Chennai, Velan Semmal Award 2022 by Pannatu Lions Club, Thiruvarur District, Nel Jeyaraman Award 2022 at National Food & Seed Festival
- Mr.S.Sivakumar, progressive farmer of KVK Virudhunagar received Innovative Farmer Award from ICAR-IARI, New Delhi
- Mrs.S.Alagu, progressive farmer of KVK Sivaganga received Pushudhan samriddhi INDIA AWARD-2022
- Smt. G. Bakiyavathy, progressive farmer of KV Puducherry received best farmer award
- Mr Vishnu Manoharan, Contact Farmer of KVK Karur received Guardian of Bees award by the Confederation of Indian Industry from the Hon'ble Minister for Agriculture, Tamil Nadu
- Smt. Lavanya Ramana Reddy, Nagarkurnool District received Mahila Shakthi Puraskar - 2022 on the occasion of International Woman's Day by Mathru Bhoomi foundation at Ravindra Bharthi, Hyderabad

KVKs

KVK Erode received Best Performance Award for implementing NABARD FSPF – Aromatic Crop cultivation at State Level

Dr. Ganga Devi, KVK-Guntur (LAM) received Raithu Nestham award

KVK Namakkal received best KVK Award, 2022 during the 29th Foundation Day Cum Kisan Mela of National Research Centre for Banana, Trichy - 2022

Dr.S.Vallal Kannan of KVK Ramanathapuram received the best stall award from Indian society of Dryland Agriculture

KVK Thoothukudi received the Best Extension Training Center in Thoothukudi District from the District Collector

KVK Prakasam (Darsi) received the best KVK award from Hon'ble VC, ANGRAU

KVK Mahabubnagar (Palem) received Best Extension Center Award from PJTSAU

KVK Kurnool (Banavasi) received Rythunestham award at Muchintal, Hyderabad.

- ICAR-ATARI-X Hyderabad won the best stall award during the ICRA 2022 International Conference by Indian Society of Dryland Agriculture at CRIDA, Hyderabad
- KVK, Erode was awarded Best Exhibition Stall Award during State Level Farmers Day organized by TNAU
- KVK Krishnagiri received appreciation certificate from Government of Tamil Nadu for exhibiting in 28th All India Mango Exhibition 2022
- KVK, Madurai received best performance center award from NABARD, Chennai
- KVK, Madurai received best stall award in State Level Farmers Day 2022 conducted at AC&RI, Madurai
- KVK Virudhunagar received best stall award during TNAU Golden Jubilee State level Farmer's day
- KVK Namakkal received Best Language Tamil Film Award for development of "Organic Farming a boon to tribal farmers" video film during MANAGE Agri Film Festival 2022, Hyderabad
- KVK Ramanathapuram received Best KVK stall award from AC & RI, Madurai
- KVK Salem received, best Seed Production Centre Award from Tamil Nadu
- KVK Kanyakumari received Best KVK Award from TNAU
- KVK Tiruchirappalli received appreciation certificate during Cane fest 2022 from SBI, Coimbatore
- KVK Tirunelveli received Best Performance award in Conduct of TNAIAMP, Excellency in Agronomy Award from Global Nature Foundations, Tiruchirappalli
- KVK, Villupuram received Best Exhibition Stall award in the 5th International Agronomy Congress organized by Indian Society of Agronomy, Hyderabad
- KVK Ramanathapuram received Best Stall award from TNAU

Scientists

Dr.V.Ramakrishnan, of KVK Sivaganga received Best oral presentation Award - 2022 from The society for Veterinary Science and Biotechnology, SVSBT - Indore

Dr.V.Radhakrishnan of KVK Thiruvarur received best Extension Worker award of the District

Shri V Suresh of KVK Thiruvannamalai received best extension worker award from District Collector

Dr.S.Nithila of KVK Trichy received distinguished Achievement Award from KNIPSS, Sulthanpur, UP during 5th National conference on doubling farmers income for sustainable & harmonious agriculture.

Dr.T.Balaji of KVK Ramanathapuram received IDK evaluation programme award

Dr.K.Devaki of KVK, Kancheepuram received the best paper presentation award in the National Conference on Native Chicken – 2022 on "Relevance of Climate Smart Traditional Farming Systems in the Era of Omics" held at MVC, Chennai

Dr.C.Sharmila Bharathi of KVK Villupuram II received Best Horticultural Scientist Award during National Conference of Natural Farming, Organic farming and Chemical farming in Indian Agriculture by Journal of Krishi Vigyan

Dr. Jessie Suneetha.W of KVK Khammam (Wyra) received best employee award from Sri. Puvvada Ajay Kumar, Road Transport Minister, Telangana

Dr E Karuna Sree of KVK West Godavari (VR Gudem) received the Best KVK Scientist Award druing the 4th GAFEF Conference at Nepal

Dr A Devivaraprasad Reddy of KVK West Godavari (VR Gudem) received the Young Scientist Award in Fishery Science during the 4th GAFEF Conference at Nepal

Dr A Devivaraprasad Reddy of KVK West Godavari (VR Gudem) received the best oral presentation award during the Tribal Horticulture Conference

Dr V Deepthi of KVK West Godavari (VR Gudem) received the young women scientist in Agriculture Extension during the 4th GAFEF Conference at Nepal

Dr.Praveen Kumar of KVK Adilabad received Best Scientist Agricultural Extension Award by Eruvaka Annual awards in excellence in Agriculture in Telangana 2022

Mr.J.Vijay of KVK Karimnagar (Jammikunta) received the Best Scientist Award from Society of Krishi Vigyan during 3rd National Conference

Dr D Sudheer of KVK Ranga Reddy received best employee Award from Ex ASRB chairman ICAR

Dr. Jessie Suneetha.W of KVK Khammam (Wyra) received the best Food Scientist award from Eruvaka foundation

A.Krishna Murthy, KVK, Kurnool (Yagantipalli) received " RythuSevarathna Award"

Dr.B.Govinda Rajulu, KVK, Periyavaram received appreciation awards for the release of two acid lime varieties

Dr. V. Lakshmi Narayanamma, KVK Khammam (Kothagudem) received best Entomologist award from Eruvaka Foundation

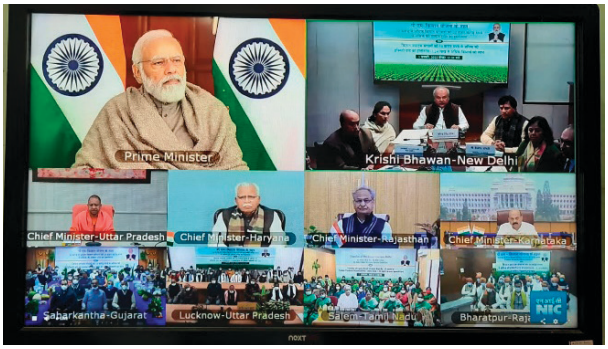
Sri. M. Rajashakhar, KVK Mahaboobnagar (Palem) received Eruvaka Best Extension Scientist Award during National farmers day celebrations of PJTSAU

- K. Senguttuvan, KVK Cuddalore received best oral presentation in the Symposium on "100 Glorious years of cotton research and way forward" by Department of Cotton, CPBG, TNAU, Coimbatore and Indian Society of Plant Breeders, Coimbatore
- Dr.K.Sivakumar, KVK Kancheepuram received best paper presentation award in International Conference on AAVASILES-2022 organized by ICAR-IGFRI, Srinagar, ICAR-NAHEP, Ranchi and NADCL, Baramulla
- Dr.M. Ramasubramanian, KVK Madurai received best extension worker award from TNAU, Coimbatore
- Dr. S.Krishnakumar, KVK Madurai received best Oral presentation award from KIA, Erode
- Mr.E. Hino Fernando, KVK Nagapattinam received best extension worker award 2022 and certificate of merit award from Department of Fisheries and Fishermen Welfare, Nagapattinam and CII and World Bank
- Dr.S.Paulpandi and Dr.S.Sathya, KVK Namakkal received best poster award and best oral presentation award at the National Congress at TANUVAS, Chennai and 7th Tamil Scientific Conference held at MVC, Chennai
- Dr. S. Vallal Kannan, KVK Ramanathapuram received best poster presentation award from Indian Society of Dryland Agriculture, and best Exhibition Stall award. Dr. P. Arunachalam received TNAU Best VCS Award in Production (2019-22), Dr. K. Elanchezhyan received best popular article award during National conference on Agricultural Scientific Tamil, Dr. A. Sundar received best Performer award under TNIAMP project.
- Dr.R.Vijayan, KVK Salem received TNAU best seed production scientist award from Tamil Nadu State
- Dr.P.S.Deshmukh, KVK Tirunelveli received best extension worker award from the Society of Nature and Applied Sciences, Tiruchirapalli, Professional Recognition Award from IEEC-Institute of Agricultural Sciences, Banaras Hindu University, Varanasi
- Dr.M.Selvamurugan, KVK Thiruvarur received best extension worker award and best poster presentation award from the Society for Nature and Applied Sciences (SNAS), Tiruchirappalli.
- Dr. V. Karunkaran, KVK Thiruvarur received best poster presentation award and best research article award in JCAS-2022 from Nandha College of Pharmacy-Erode
- Dr.V.Radhakrishnan and Dr.S.Kamalasundari, KVK Thiruvarur received best extension worker awards of the District
- D.S. Nithila, KVK Tiruchirappalli received best oral presentation award, distinguished achievement award at the 5th National Cconference on doubling farmers income for sustainable & harmonious agriculture at KNIPSS, Sulthanpur, UP
- Dr.V. Sendhilvel, KVK Vellore received best poster award during Advances in Agro Meteorological Interventions for Climate Resilient Agriculture, TNAU and best Oral Presentation Award from Kumaraguru Institute of Technology
- Dr.C.Raja Babu, KVK Virudhunagar received extension service excellence award from American College and Best performance in awareness creation under TNIAMP project from WTC, TNAU.
- Dr.S.Ravi, KVK Puducherry received best poster award and best scientist award during International Conference ICSCI 2022
- Dr.V. Ramakrishnan, KVK Sivaganga received Pushudhan Samriddhi INDIA AWARD-2022
- Ms.M. Ramyasivaselvi, KVK Theni received Best Poster Award during the International Conference on "Indian Dairying-Sustainability and Nutritional Security held at Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, Tamil Nadu.
- Dr.J.Kathiravan, KVK Karaikal received Green Earth Award
- Prof N. Rajanna, KVK Warangal (Mamnoor) received Best Veterinary Scientist award by Eruvaaka Foundation, Hyderabad

6. Important Events

Awareness programme on Natural farming

KVKs in the Zone organized Scientists-Farmers' interaction meeting on 1st January 2022 in which a total of 2790 farmers participated. The live telecast of Hon'ble Prime minister of India's interaction with farmers of different states was shown to the participating farmers. Hon'ble Prime minister of India released the funds to farmers under PM-Kisan scheme and addressed the participating farmers on natural farming.



Hon'ble PM addressing farmers on 1st Jan. 2022

National Girl Child Day on 24th January 2022

"National Girl Child Day" was celebrated by KVKs on 24th January 2022 in the Zone under the theme 'Digital Generation, Our Generation'. Lectures were organized on rights of girl child, education, health and nutrition needs of girls, gender-based inequality, invisible discrimination, female foeticide, role of parents in ensuring equality, government programmes, schemes and different aspects of girl child development. Essay, elocution, folk dance, roll play, speech, quiz and rangoli competitions were conducted and certificated were distributed.

National girl child day- KVK, Kurnool (Banavasi)

World Pulses Day

As a part of the series of events under "Azadi Ka Amrit Mahotsav", 66 KVKs of the zone organized "World Pulses Day" with theme "Atmanirbhar Bharat- Harnessing potential of pulses for import substitution" on 10 February 2022 by conducting 107 outreach activities including seminars/ training programmes/gosthis/exhibitions, etc. involving large number of stakeholders to an extent of 5651. A total of 12 seminars, 46 training programmes, 27 Kisan Goshtis and 23 Exhibitions were conducted benefitting 595, 1922, 1405 and 1729 farmers respectively.

Field day in a demonstration- KVK, Trichi

International Women's Day 08-03-2022

International women's day was organized by 71 KVKs of the Zone in which 148 various activities were conducted involving 9313 beneficiaries.

Women farmers felicitated- KVK, W.Godavari (VR Gudem)

Seminars (24) , training programmes (56), Goshtis (40) and exhibitions (28) were organized by the KVKs of the zone benefitting 2270, 3033, 1958 and 2052 women respectively.

World Earth Day

World Earth Day was observed by KVKs of the Zone on 22-04-2022. Save Soil campaign cum awareness programmes were conducted in which 635 farmers participated

Save Soil campaign by KVK, Adilabad, Telangana

Kisan Bhagidari Prathamikta Hamari"

Kisan mela was conducted as part of the **Kisan Bhagidari Prathamikta Hamari" Abhiyan** under **Azadi ka Amrit Mahotsav** by all the 71 KVKs of ICAR-ATARI, Hyderabad on 26.04.2022 in which **19402** farmers, 2 MPs, 6 Ministers/MLA's participated. The major events during the mela were, 1) Farmer-Scientist Interaction on "**Bharatiya Prakritik Krishi Paddhati**", 2) Technical discussion on Millets, Oilseeds and Bio-fortified crops, 3) Participation of public representatives

Seminar on Coconut

KVK Krishnagiri and Coconut Development Board, Chennai jointly organized Seminar on COCONUT at Arasampatti village, Kaveripattinam Block, Krishnagiri District on 28-April 2022. District Development Manager of NABARD, Assistant Director of Agriculture, Kaveripattinam Block and Deputy Agriculture Officer participated in which 314 farmers got benefited.

Seminar on coconut – KVK, Krishnagiri, Tamil Nadu

Farmer-Scientist Interaction and Hon'ble Prime Minister's interaction with beneficiaries of schemes/programmes on 31st May 2022

All 71 KVKs in the Zone organized Farmer Scientist Interaction Meeting and Hon'ble Prime Minister's interaction with beneficiaries of schemes/ programmes on 31st May 2022. The total number of participants in the event were 67046 including 2150 dignitaries, 56806 beneficiary farmers of various schemes and programmes and 10240 progressive farmers.

Hon'ble Minister of Ports, Shipping & Waterways and AYUSH Sri Sarbananda Sonoval releasing Kisan Samman Nidhi – KVK, Visakhapatnam

Annual Zonal Workshop of KVKs of Zone - X

The Annual Zonal Workshop of KVKs of ATARI, Zone - X was organized from 12 to 14 July 2022 to review the achievements of 71 functional KVKs Andhra Pradesh, Telangana, Tamil Nadu and Puducherry. The Workshop was inaugurated by Dr.A.K.Singh, Hon'ble Deputy Director General (Agricultural Extension). Hon'ble Vice Chancellors of State Universities, Dr.A.Vishnuvardhan Reddy (ANGRAU, Andhra Pradesh), Dr.T.Janakiram (Dr. YSRHU, Andhra Pradesh), Dr.B.Neeraja Prabhakar (SKLTSHU, Telangana), Dr.Ravinder Reddy (PVNRVU, Telangana) and Dr.V.K. Singh, Director,

CRIDA, Hyderabad were the guests of honour. Directors of Extension of State Universities, Dr.P.Rambabu (ANGRAU), Dr.V.Sudharani (PJTSAU), Dr.P.P. Murugan (TNAU), Dr.N.K. Sudeep Kumar (TANUVAS), Dr.A.Kiran Kumar (SKLTSHU), Dr.M.Rajakumar (TNJFU), Dr.B.Srinivasulu (Dr. YSRHU), Dr.G.Venkatnaidu (SVVU) and Dr.Mahender Kumar (PVNRTVU) participated. Programme Coordinators / Senior Scientist and Heads or their representatives of 71 KVKs in the Zone, Scientists of Director of Extension Office, Staff of ICAR-ATARI-Zone X, Hyderabad participated in the inaugural function.

Dr.A.K. Singh, DDG (AE) delivering the Inaugural Address during zonal workshop in Virtual Mode

Poshan Abhiyan programme

Poshan Abhiyan programme was organized by 71 KVKs of ICAR-ATARI, Hyderabad on 17.09.2022 involving activities related to awareness on Nutri-garden and bio-fortified varieties, nutri-cereals and their role on human health and distribution of saplings of fruit/agro-forestry trees and seed packets of vegetables. A total number of 8372

Nutri Exhibits – KVK, Erode

farmers participated. A total 15228 seedlings and 8015 vegetable seed packets were distributed.

World Soil Day 2022

All the KVKs in the Zone celebrated World Soil Day on 5th December 2022 on the theme "Soils: Where food begins". Farmers, scientists and students participated in various programmes and events organized with an aim to bring awareness on importance of soil for food and nutrition security, sustainable management of soil resource to ensure productivity, food security and nutrition.

Shri. Poondi K.Kalaivanan, MLA, Thiruvarur, Tamil Nadu releasing leaflet on soil health management at KVK Thiruvarur

7. Staff Position

S.No.	Name	Designation
1.	Dr. Shaik N Meera	Director
2.	Dr. J.V. Prasad	Principal Scientist (Agricultural Entomology)
3.	Dr. A.R.Reddy	Principal Scientist (Agricultural Economics)
4.	Dr. A. Bhaskaran	Principal Scientist (Soil Science)
5.	Dr. B. Malathi	Scientist (Agricultural Economics)
6.	Vacant	Senior Scientist (Agricultural Extension)
7.	Vacant	Senior Scientist (Horticulture/Vegetable Sciences)
8.	Shri. V.V. Ramana	Assistant Administrative Officer
9.	Shri. A. Prem Kumar	Assistant Finance and Accounts Officer
10.	Vacant	Private Secretary
11.	Shri P. Venkatesh	Assistant
12.	Vacant	Assistant
13.	Smt. N. Archana	Upper Division Clerk
14.	Vacant	Lower Division Clerk
15	Vacant	Lower Division Clerk
16.	Smt. Subbalakshmi	Skilled Supporting Staff

8. List of KVKS in Zone-X

S. No.	KVK/ District	Name and Address of KVKs
Tamil Nadu		
1.	Ariyalur	Krishi Vigyan Kendra, Cholamadevi Post, Jayamkondam, Udayarpalayam, Ariyalur - 612 902
2.	Coimbatore	Krishi Vigyan Kendra, Vivekananduram, Seeliyur Via, Karamadai Block, Coimbatore - 641 113
3.	Cuddalore	Krishi Vigyan Kendra, Vriddhachalam, Cuddalore - 606 001
4.	Dharmapuri	Krishi Vigyan Kendra, Papparapatti, Dharmapuri - 636 809
5.	Dindigul	Krishi Vigyan Kendra, Gandhigram Rural Institute, Gandhigram, Dindigul - 624 302
6.	Erode	Krishi Vigyan Kendra ,272, Perumal Nagar, Puduvalliampalayam Road, Kalingiyam Post Gobichettipalayam Taluk, Erode - 638 453
7.	Kancheepuram	Krishi Vigyan Kendra, Kattangulathur (P.O.), Kattupakkam, Kancheepuram - 603 203
8.	Kanyakumari	Krishi Vigyan Kendra, Thirupathisaram, Kanyakumari - 629 901
9.	Karur	Krishi Vigyan Kendra, Pulutheri, RT Malai Post, Kulithalai Taluk, Karur - 621313
10.	Krishnagiri	Krishi Vigyan Kendra, Elumichangiri, Mallinayanalli Post, Krishnagiri - 635 120
11.	Madurai	Krishi Vigyan Kendra, Agricultural College and Research Institute, Madurai - 625 104
12.	Nagapattinam	Krishi Vigyan Kendra, Sikkal, Nagapattinam - 611 108
13.	Namakkal	Krishi Vigyan Kendra, VC & RI Campus, Namakkal - 637 002
14.	Nilgiris	Krishi Vigyan Kendra, Woodhouse farm, Dodabetta, Ooty- 643002
15.	Perambalur	Krishi Vigyan Kendra, Valikanduram Distt. Perambalur - 621 115
16.	Pudukkottai	Krishi Vigyan Kendra, Vamban Colony, Pudukkottai - 622 303
17.	Ramanathapuram	Krishi Vigyan Kendra, Coastal Saline Research Centre Collectorate Complex, Ramanathapuram - 623 503
18.	Salem	Krishi Vigyan Kendra, Sandhiyur, Via Mallur, Salem - 636 203
19.	Sivagangai	Krishi Vigyan Kendra, Kundrakudi, Sivagangai - 630 206
20.	Theni	ICAR Krishi Vigyan Kendra, Kamatchipuram (S.O) Theni - 625 520
21.	Tirunelveli	Krishi Vigyan Kendra, Urmelalagian, Ayikudi Post, Tenkasi Taluk, Tirunelveli District, Tamil Nadu - 627 852
22.	Tiruppur	Krishi Vigyan Kendra, TNAU Farm, Pongalur, Devanampalayam Post, Palladam Taluk, Tiruppur - 641 667
23.	Tiruvallur	Krishi Vigyan Kendra, Tirur, Tiruvallur - 602 025
24.	Tiruvannamalai	Krishi Vigyan Kendra, Kilnelli Village, Chithathur Post, Vembakkam Taluk, District Thiruvannamalai - 604 410
25.	Thiruvarur	Krishi Vigyan Kendra, Needamangalam, Thiruvarur - 614 404
26.	Tiruchirappalli	Krishi Vigyan Kendra, Sirugamani, Tiruchirappalli - 639 115
27.	Tuticorin	Krishi Vigyan Kendra, Mudivaithanendal Vagaikulam, Thoothukudi - 628 102

S. No.	KVK/ District	Name and Address of KVKs
28.	Vellore	Krishi Vigyan Kendra, Virinjipuram, Vellore - 632 104
29.	Villupuram	Krishi Vigyan Kendra, Tindivanam, Villupuram - 604 002
30.	Villupuram-II	Krishi Vigyan Kendra - Villupuram II, Avian Disease Laboratory, 345 D, Pattuthurai Road, Thalaivasal - 636 112
31.	Virudhunagar	Krishi Vigyan Kendra, Kovilangulam, Aruppukkottai, Virudhunagar - 626 107
Andhra Pradesh		
32.	Anantapur (Reddipalli)	Krishi Vigyan Kendra, Reddipalli (V), B.K. Samudram (Mdl), Ananthapuram (Dist) - 515 701
33.	Anantapur (Kalyandurg)	Krishi Vigyan Kendra, Garudapuram (V), Kalyandurg (M), Anantapur - 515 761
34.	Chittoor (Kalikiri)	Krishi Vigyan Kendra, CLRC Building, Madanapalle Road, Kalikiri. Chittoor District - 517 234
35.	Chittoor (RASS)	Krishi Vigyan Kendra, RASS-KVK, Vanasthali, Karakambadi Post, Renigunta Mandal, Chittoor District - 517 520
36.	East Godavari (Kalavacherla)	Krishi Vigyan Kendra, Kalavacharla, Rajanagram Mandal, East Godavari - 533 294
37.	East Godavari (Pandirimamidi	Krishi Vigyan Kendra, Pandirimamidi, Rampachodavaram, East Godavari District - 533 288
38.	Guntur (Lam)	Krishi Vigyan Kendra, Lam, Guntur - 520 034
39.	Kadapa	Krishi Vigyan Kendra, Utukur, Kadapa, Y.S.R District - 516003
40.	Kadapa-2	Krishi Vigyan Kendra, Vonipenta, YSR Kadapa district - 516173
41.	Krishna (Garikapadu)	Krishi Vigyan Kendra, Garikapadu, Krishna District - 521 175
42.	Krishna (Ghantasala)	Krishi Vigyan Kendra, Agricultural Research Station, Ghantasala Krishna - 521 133
43.	Kurnool (Banavasi)	Krishi Vigyan Kendra, Near G.L.S. Farm, Banavasi, Yemmiganur Mandal, Kurnool District - 518 360
44.	Kurnool (Yagantipalli)	Krishi Vigyan Kendra, Yagantipalle, Kurnool District - 518 124
45.	Nellore	Krishi Vigyan Kendra, Mini Bypass Road, A.K. Nagar (Post), B.V. Nagar, Nellore District- 524 004
46.	Nellore (Periyavaram)	Krishi Vigyan Kendra, Periyavaram, Venkatagiri Post, SPSR Nellore District - 524 132
47.	Prakasam (Darsi)	Krishi Vigyan Kendra, Agricultural Research Station, PO : Darsi, Prakasam District - 523 247
48.	Prakasam (Kandukur)	Krishi Vigyan Kendra, Central Tobacco Research Institute, Research Station Premises, Kandukur, Prakasam District - 523 105
49.	Srikakulam	Krishi Vigyan Kendra, Amadalavalasa, Srikakumal District - 532 185
50.	Visakhapatnam	Krishi Vigyan Kendra, BCT, Haripuram, Rambilli Mandal, Visakhapatnam - 531 061
51.	Visakhapatnam (Kondempudi)	Krishi Vigyan Kendra, C/o Jyothirmaya Trust, Amarapuri, Pottidorapalem Post, Butchayyapeta Mandal, Visakhapatnam -531 026
52.	Vizianagaram	Krishi Vigyan Kendra, Rastakuntabai, Vizianagaram - 535 523
53.	West Godavari (VR Gudem)	Krishi Vigyan Kendra, Venkataramannagudem, West Godavari - 534 101
54.	West Godavari (Undi)	Krishi Vigyan Kendra, Undi, West Godavari - 534 199

S. No.	KVK/ District	Name and Address of KVKs
Telangana		
55.	Adilabad	Krishi Vigyan Kendra, ARS premises, Ramnagar, Adilabad - 504 002
56.	Mancherial (Bellampalli)	Krishi Vigyan Kendra, Bellampalli, Mancherial - 504 251
57.	Karimnagar (Jammikunta)	Krishi Vigyan Kendra, Jammikunta, Karimnagar - 505122
58.	Karimnagar (Ramagirikhilla)	Krishi Vigyan Kendra, Ramagirikhilla, Ratnapu, Ramagiri, Peddapalli District - 505 212
59.	Khammam (Wyra)	Krishi Vigyan Kendra, ARS Wyra, Khammam - 507 165
60.	Khammam (Kothagudem)	Krishi Vigyan Kendra, Garimellapadu Village, Kothagudem Mandal, Khammam - 507165
61.	Mahabubnagar (Madanapuram)	Krishi Vigyan Kendra, Madanapuram (Vill. & Mdl), Wanaparthy, Mahabubnagar - 509 110
62.	Mahabubnagar (Palem)	Krishi Vigyan Kendra, Palem, Mahabubnagar - 509 215
63.	Medak (DDS)	Krishi Vigyan Kendra, Didgi Village, Zaheerabad, Medak - 502 220
64.	Medak (Tuniki)	Krishi Vigyan Kendra, Tunki Village, Kowdipally, Mandal, Medak District - 502 316
65.	Nalgonda (Gaddipally)	Krishi Vigyan Kendra, Gaddipalli, Garedapalli Mandal, Nalgonda -508 201
66.	Nalgonda (Kampasagar)	Krishi Vigyan Kendra, Kampasagar, Babusaipet Post, Tripuraram Mandal, Nalgonda - 508 207
67.	Nizamabad (Rudrur)	Krishi Vigyan Kendra, Farm Science Centre, Rudrur, Varmi Mandal, Nizamabad - 503 188
68.	Ranga Reddy	Krishi Vigyan Kendra, Near Deer Park, Bhagyalatha Busstop, Hayathnagar Research Farm, Hyderabad - 501 505
69.	Warangal (Malyal)	Krishi Vigyan Kendra, Malyal, Mahabubabad, Warangal - 506 101
70.	Warangal (Mamnoor)	Krishi Vigyan Kendra, Mamnoor, Warangal, Telangana - 506 166
Puducherry		
71.	Karaikal	Krishi Vigyan Kendra, Madur, Sellore Thirunallar, Karaikal - 609 607
72.	Puducherry	Krishi Vigyan Kendra, Kurumbet, Puducherry - 605 009

भाकृअनुप-कृषि तकनीकी अनुप्रयोग अनुसंधान संस्थान (अटारी)

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