# वार्षिक प्रतिवेदन
# Annual Report
# 2023


भाकृअनुप
ICAR

**भाकृअनुप-कृषि तकनीकी अनुप्रयोग अनुसंधान संस्थान (अटारी)**

**ICAR-Agricultural Technology Application Research Institute (ATARI)**

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# Preface

It is with immense pride and fulfilment that I present the 2023 Annual Report of ICAR-ATARI, Hyderabad. This year, our Krishi Vigyan Kendras (KVKs) have not only achieved but often surpassed the targets set for our mandated activities, recording significant accomplishments in technology assessment, demonstration, and training. We have made notable strides in advancing and modernizing our agricultural extension research and knowledge management initiatives.

ICAR-Agricultural Technology Application Research Institute (ATARI), Hyderabad, is entrusted with the coordination and monitoring of technology application and frontline extension education programs of KVKs in Zone X, which encompasses three states—Tamil Nadu, Andhra Pradesh, and Telangana—and the Union Territory of Puducherry. Currently, the Zone comprises 75 sanctioned KVKs: 32 in Tamil Nadu, 24 in Andhra Pradesh, 16 in Telangana, and 3 in Puducherry. Our mandate also includes strengthening agricultural extension research and knowledge management.

This year, our KVKs have assessed a record number of technologies, introducing several innovative approaches. Through frontline demonstrations, we have successfully engaged a vast number of farmers. In 2023, KVKs assessed 1,573 technologies through 4,779 On-Farm Trials (OFTs) and conducted 11,950 Frontline Demonstrations (FLDs) on farmers' fields. We organized 9,489 training programs, reaching 370,431 participants, including farmers, farm women, rural youth, and extension functionaries. Additionally, 7,699 Cluster Frontline Demonstrations on pulses under the National Food Security Mission (NFSM) were conducted by 63 KVKs, covering 3,582 hectares. Similarly, 5,389 Cluster Frontline Demonstrations on oilseed crops, spanning 2,156 hectares, were organized by 56 KVKs during the kharif and rabi seasons of 2023.

Our twelve seed hub KVKs for pulses (six in Tamil Nadu, four in Andhra Pradesh, and two in Telangana) produced 3,266.42 quintals of seed, significantly contributing to varietal replacement with high-yielding, disease-tolerant, and recently released varieties. Additionally, KVKs produced and supplied 13,120 quintals of seed and 11.156 million saplings of elite field/horticultural crops. They also distributed 1.044 million livestock, including cattle, goats, sheep, poultry chicks, and fish fingerlings, to farmers.

Our training programs were meticulously designed to be focused, need-based, and demand-driven. During the year, our KVKs organized 9,489 training programs, covering 370,431 participants, including 238,103 farmers, 33,827 rural youth, and 41,950 extension functionaries. The skilling of rural youth under the Attracting Rural Youth in Agriculture (ARYA) project benefited 2,210 rural youth by establishing 421 enterprise units. The Farmer FIRST centers implemented 69 technology application interventions, covering 2,327 hectares and 6,589 households in the operational villages. Under the Mera Gaon Mera Gaurav (MGMG) initiative, implemented by ten ICAR institutes in the zone, 256 villages were adopted by 77 teams of scientists, who organized 1,430 activities benefiting 21,870 farmers and rural residents.

Our state-of-the-art District Agro-met Units (DAMU) prepared and disseminated 18,838 block-level and 8,106 district-level weather-based advisory bulletins through digital and other channels. KVKs conducted 48,804 extension activities, engaging 4,154,945 farmers, farm women, and extension personnel, promoting awareness of the latest technologies. A total of 44,892 soil samples were analyzed by the KVKs, benefiting 45,249 farmers across 8,546 villages.

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

I extend my heartfelt commendation to all the Senior Scientists, Heads, and staff of the KVKs in the Zone for their dedicated efforts in implementing the scheme and to my colleagues at ATARI for compiling this comprehensive Annual Report.

I am confident that ATARI, Hyderabad, and the KVKs will continue to play a pivotal role in agricultural development and farmer welfare. We remain steadfast in our commitment 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

**Dr. Shaik N Meera**
Director

# कार्यकारी सारांश

कृषि तकनीकी अनुप्रयोग अनुसंधान संस्थान (अटारी), हैदराबाद को क्षेत्र-X के लिए स्वीकृत 75 कृषि विज्ञान केंद्रों के समन्वय की जिम्मेदारी दी गई है। उनमें से 72, वर्ष 2023 के दौरान कार्यारत थे। वार्षिक रिपोर्ट वर्ष 2023 में तमिलनाडु के 32, आंध्र प्रदेश के 23, तेलंगाना के 16 और पुदुचेरी के 2 कृषि विज्ञान केंद्रों की गतिविधियों का उल्लेख है।

## प्रौद्योगिकी का मूल्यांकन

वर्ष के दौरान, कृषि विज्ञान केंद्रों ने 4779 खेतों पर परीक्षण कर 1573 तकनीकों का मूल्यांकन और परिशोधन किया। जाचं की गई प्रौद्योगिकियों में, 1087 प्रौद्योगिकियां फसल संबंधी, 223 पशु संबंधी एवं 62 महिला सशक्तिकरण संबंधी थे। फसलों के मामले में शामिल किए गए महत्वपूर्ण विषयगत क्षेत्रों में किस्मों मूल्यांकन, फसल प्रणाली, समेकित रोग प्रबंधन, समेकित कीट प्रबंधन, समेकित पोषक तत्व प्रबंधन, समेकित खरपतवार प्रबंधन, समेकित फसल प्रबंधन, संसाधन संरक्षण प्रौद्योगिकियां, 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 परिष्करण किया गया। ग्रामीण महिलाओं के सशक्तीकरण के अंतर्गत, विषयगत क्षेत्रों जैसे कि शारीरिक श्रम में कमी, स्वास्थ्य और पोषण, मूल्य संवर्धन और उद्यमिता विकास पर खेतों पर परीक्षणों का आयोजन किया गया।

तमिलनाडु के कृषि विज्ञान केंद्रों ने फसलों सहित बागवानी प्रजातियों (485) एवं पशुओं (217) पर, 1998 खेतों पर परीक्षण कर 637 प्रौद्योगिकियों की उपयुक्तता का मूल्यांकन किया। आंध्र प्रदेश के कृषि विज्ञान केंद्रों ने फसलों सहित बागवानी प्रजातियों (405), पशुओं (118) एवं ग्रामीण महिलाओं के सशक्तिकरण (50) पर, 1770 खेतों पर परीक्षण कर 664 प्रौद्योगिकियों की उपयुक्तता का मूल्यांकन किया। तेलंगाना के कृषि विज्ञान केंद्रों ने फसलों सहित बागवानी प्रजातियों (599), पशुओं (105) एवं ग्रामीण महिलाओं के सशक्तिकरण (68) पर, 909 खेतों पर परीक्षण कर 234 प्रौद्योगिकियों की उपयुक्तता का मूल्यांकन किया। पुदुचेरी के कृषि विज्ञान केंद्रों ने फसलों सहित बागवानी प्रजातियों (32), पशुओं (4) पर, 108 खेतों पर परीक्षण कर 28प्रौद्योगिकियों का मूल्यांकन किया।

## प्रौद्योगिकी प्रदर्शन

2932.18 हे क्षेत्र में फसलों (6112), पशुओं (2597) एवं कृषि उपकरणों (319) पर कुल 11950 अग्रिम प्रदर्शन कार्यान्वित किए गए। अनाजों पर किए गए 1224 प्रदर्शनों में चावल पर ही 1153 प्रदर्शन शामिल थे। दलहनों पर किए गए 685 प्रदर्शनों में, उड़द पर 292 एवं अरहर पर 136 प्रदर्शन शामिल थे। तिलहनों पर किए गए 478 प्रदर्शनों में 373 प्रदर्शन मूंगफली पर ही थे। व्यावसायिक फसलों पर 105 प्रदर्शन गन्ने पर थे। तमिलनाडु में किए गए 5700 प्रदर्शनों में 592 सब्जियों पर एवं 856 प्रदर्शन अनाज पर थे। आंध्र प्रदेश में किए गए 3952 प्रदर्शनों में से, 399 फलों पर एवं 295 प्रदर्शन सब्जियों पर थे। तेलंगाना में प्रदर्शित किए गए 2014 प्रदर्शनों में, 138 अनाजों पर एवं 197 सब्जियों पर थे। पुदुचेर्री में किए गए 284 प्रदर्शनों में 30 दलहनों पर, 20 अनाजों पर शामिल थे। पशुपालन और विभिन्न उद्यमों के विभिन्नन पहलुओं के अंतर्गत प्रौद्योगिकियों को लोकप्रिय बनाने के लिए 2597 प्रदर्शनों का आयोजन किया गए।

## प्रशिक्षण

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 क्षेत्र-X में कृषि विज्ञान केंद्रों ने फसलों, डेअरी एवं अन्य उत्पादन एवं उत्पादकता में वृद्धि करने के लिए कृषि एवं उससे संबंधित प्रौद्योगिकियों पर 9489 प्रशिक्षण कार्यक्रमों का आयोजन किया। जिसमें 238103 किसान एवं कृषि महिलाएं, 33827 ग्रामीण युवा एवं 41950 प्रसार अधिकारी को शामिल किया गया।

तमिलनाडु के कृषि विज्ञान केंद्रों ने कृषि महिलाओं, ग्रामीण युवाओं और प्रसार अधिकारियों सहित 169485 किसानों की भागीदारी के साथ 4725 प्रशिक्षण पाठ्यक्रम आयोजित किए, जबकि आंध्र प्रदेश के कृषि विज्ञान केंद्रों ने 82025 किसानों की भागीदारी के साथ 3281 प्रशिक्षण पाठ्यक्रम आयोजित किए, जिसमें किसान के साथ-साथ कृषि महिलाएं, ग्रामीण युवा और प्रसार अधिकारी शामिल हुए। तेलंगाना के कृषि विज्ञान केंद्रों ने 59613 लाभार्थियों के लिए 1311 पाठ्यक्रम संचालित किए। पुदुचेरी के कृषि विज्ञान केंद्रों ने 4366 लाभार्थियों के लिए 172 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।

जोन-X के कृषि विज्ञान केंद्रों ने 47127 किसानों और कृषि कार्य में शामिल महिलाएं और ग्रामीण युवाओं को शामिल करते हुए 676 प्रायोजित प्रशिक्षण कार्यक्रम आयोजित किए। उद्यमिता विकास, आय सृजन और स्वरोजगार की सुविधा के लिए, विशेष रूप से 9424 ग्रामीण युवाओं और स्कूल बीच में छोड़ने वाले जैसे लोगों के लाभ लिए, कृषि विज्ञान केंद्रों ने 371 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 प्रसार

उन्नत प्रौद्योगिकियों के बारे में जागरुकता प्रदान करने के लिए 4154945 किसानों, कृषि महिलाओं एवं प्रसार अधिकारियों की भागीदारी से क्षेत्र-x के कृषि विज्ञान केंद्रों में 48804 प्रसार गतिविधियों का आयोजन किया गया। प्रसार गतिविधियों में सलाह सेवाएं, प्रदर्शन दौरे, पशु स्वास्थ्य शिविर, प्रौद्योगिकी सप्ताह, सामूहिक विचार-विमर्श, प्रदर्शनों की पद्धत्ति, मृदा स्वास्थ्य शिविर, किसान मेले, किसान गोष्ठियां आदि शामिल थे। उन्नत कृषि प्रौद्योगिकियों पर सूचना को तुरंत प्रसारित करने के लिए क्षेत्र-X के कृषि विज्ञान केंद्रों ने 3302 प्रकाशन प्रकाशित किए।

संस्थागत संसाधनों तक किसानों की सीधी पहुंच की सुविधा के लिए, भाकृअनुप ने विभिन्न प्रौद्योगिकी उत्पादों की एकल गवाक्ष वितरण के उद्देश्य से क्षेत्र-X में तीन कृषि प्रौद्योगिकी सूचना केंद्रों की स्थापना की। वर्ष के दौरान कुल 12512 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 सेवाओं और महत्वपूर्ण निवेशों की आपूर्ति

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 44892 नमूनों, पानी के 6309 नमूनों, पौधों के 661 नमूनों और उर्वरकों / खादों के 50 नमूनों सहित कुल 52124 नमूनों का विश्लेषण किया गया, जिससे तमिलनाडु, आंध्र प्रदेश, तेलंगाना और पुदुचेरी के 8546 गांवों के 45249 किसानों को लाभ हुआ।

कृषि विज्ञान केंद्रों ने 13120 क्विंटल बीज और 111.56 लाख पौधे खेत / बागवानी फसलों की कुल सामग्री का उत्पादन और आपूर्ति की। दालों के लिए कृषि विज्ञान केंद्र के बारह बीज हबों (तमिलनाडु में छह, आंध्र प्रदेश में चार और तेलंगाना में दो) ने किसानों को गुणवत्तापूर्ण बीज की आपूर्ति के लिए 3266.42 क्विंटल बीज (मूंग, उड़द, अरहर और चना) का उत्पादन किया।

## राष्ट्रीय जलवायु समुत्थान कृषि में नवप्रवर्तन (निक्रा)

जोन-x के 8 कृषि विज्ञान केंद्रों द्वारा कार्यान्वित निक्रा परियोजना के प्रौद्योगिकी प्रदर्शन घटक ने तीन राज्यों में जलवायु समुत्थान कृषि प्रौद्योगिकियों और प्रक्रियाओं का प्रदर्शन किया। परियोजना के अंतर्गत, कृषि विज्ञान केंद्रों ने चार मापदंडों अर्थात प्राकृतिक संसाधन प्रबंधन (364), फसल उत्पादन (875), पशुधन और मत्स्य पालन (940) में 2627 प्रदर्शन किए। संस्थागत हस्तक्षेपों जैसे किराए केंद्र, चारा बैंक और बीज बैंक के तहत 807 किसान लाभान्वित हुए। क्षमता निर्माण और प्रसार गतिविधियों के माध्यम से, जलवायु समुत्थान तकनीकों पर जागरूकता चलाए गए 85 और 64 गतिविधियों से क्रमश: 3481 और 4285 किसान लाभान्वित हुए।

## कृषि की ओर युवाओं को आकर्षित करना एवं उस कार्य में उन्हें बनाए रखना (आर्या)

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 81 प्रशिक्षण कार्यक्रमों के माध्यम से 2210 ग्रामीण युवाओं को कौशल प्रशिक्षण प्रदान किया गया। जीविकापार्जन सुरक्षा को सुनिश्चित करने एवं 727 ग्रामीण युवाओं को लाभ पहुंचाने के लिए वर्ष 2023 के दौरान 421 उद्यम इकाइयों को स्थापित किया गया।

## किसान पहले परियोजना (एफएफपी)

चार भाकृअनुप संस्थानों (आईआईएमआर, आईआईओपीआर, आईआईओआर और क्रीडा) और एक विश्वविद्यालय (टीएएनयूवीएएस) ने किसान पहले परियोजना को लागू किया। पहले किसान परियोजना लागू किए गए गांवों के 2327 हेक्टेयर क्षेत्र

में, 6589 घरों को शामिल करते हुए 69 फसल हस्तक्षेप अपनाए गए। 75 हेक्टेयर क्षेत्र में 15 बागवानी हस्तक्षेप कार्यन्वित किए गए। 9 प्राकृतिक संसाधन प्रबंधन (NRM) हस्तक्षेप कार्यान्वित किए गए। पशुधन के अंतर्गत बेहतर चारा किस्मों, आहात कुक्कुट नस्लों का प्रदर्शन, खनिज और पोषक तत्वों के मिश्रण की शुरूआत, एस्ट्रो सिंक्रोनाइजेशन प्रोटोकॉल, पशु स्वास्थ्य शिविर, भेड़ और बकरियों में नस्ल सुधार आदि से संबंधित कुल 9 हस्तक्षेप आरंभ किए गए।

## जिला कृषि-मौसमविज्ञान की इकाइयां (डीएएमयु)

उप-जिला स्तर पर किसानों को कृषि-मौसमविज्ञान के सलाहों को जारी एवं प्रसार करने के लिए पहले चरण में भारतीय मौसमविज्ञान विभाग (आईएमडी) के सहयोग से ग्रामीण कृषि मौसम सेवा (जीकेएमएस) के अंतर्गत 28 कृषि-मौसम इकाइयों (डीएएमयु) (आंध्र प्रदेश में 9, तेलंगाना में 8, तमिलनाडु में 10 और पुडुचेरी में 1) स्थापना की गई। वर्ष के दौरान जिला कृषि-मौसमविज्ञान इकाइयों (डीएएमयु) केंद्रों ने कृषि-मौसमविज्ञान-डीएसएस पर 26944 कृषि-मौसमविज्ञान सलाहों को तैयार कर विभिन्न प्रसार साधनों के माध्यम से मौसम संबंधी सलाह का प्रसार किया। मौसम आधारित सलाह की उपयोगिता और उन्हें उपयोग करने के तरीकों पर 21740 किसानों के लाभ के लिए कुल 370 किसान जागरूकता कार्यक्रम/बैठकें आयोजित की गई।

## दलहनों एवं तिलहनों पर केंद्र पर अग्रिम प्रदर्शन

वर्ष 2020 के तीन मौसमों के दौरान क्षेत्र-X में स्थित तमिलनाडु, आंध्र प्रदेश, तेलंगाना और पुडुचेरी के 63 कृषि विज्ञान केंद्रों द्वारा राष्ट्रीय खाद्यान्न सुरक्षा मिशन (एनएफएसएम) के अंतर्गत दलहनों पर अग्रिम प्रदर्शनों(Cluster Frontline Demonstration) का आयोजन किया गया। उन्नत उत्पादकता के लिए प्रौद्योगिकी पैकेज को शामिल कर दलहनों के अंतर्गत 3582.5 हेक्टेयर क्षेत्र को शामिल किया गया। इसी प्रकार, वर्ष 2023 के खरीफ और रबी के दौरान 56 कृषि विज्ञान केंद्रों द्वारा तिलहनी फसलों के लिए 2156 हेक्टेयर में 5389 केंद्र पर अग्रिम प्रदर्शन (Cluster Frontline Demonstration) आयोजित किए गए। क्षेत्र स्तरीय प्रदर्शनों (FLDs) में प्राप्त की गई दलहनों और तिलहनों की उत्पादकता जिले / राज्य के औसत से अधिक थी, जो पैदावार के अंतर को कम करने का संभावित संकेत था।

## जनजाति उप योजना (टीएसपी)

19 कृषि विज्ञान केंद्रों (आंध्र प्रदेश में 7 तेलंगाना में 7 और तमिलनाडु में 2) द्वारा जनजाति समुदायों की सामाजिक-आर्थिक स्थितियों को उन्नत बनाने के उद्देश्य से जनजाति उप योजना (टीएसपी) को कार्यान्वित किया गया और 2359 परिसंपत्तियों/ सूक्ष्म-उद्यमों का निर्माण कर 4285 लाभार्थियों को आय सृजन का अवसर प्रदान किया गया। 1194 लाभार्थियों को कौशल विकास प्रशिक्षण (50) प्रदान किए गए।

## स्वच्छता ही सेवा

स्वच्छता ही सेवा कार्यक्रम को 71 कृषि विज्ञाान केंद्रों द्वारा लागू किया गया, जिसमें कृषि विज्ञान केंद्रों ने गांवों में श्रमदान किया और अपनाए गए गांवों/सार्वजनिक स्थानों पर स्वच्छता और स्वास्थ्य-रक्षा के लिए योगदान दिया। 2023 के दौरान केवीके द्वारा स्वच्छता गतिविधियों का आयोजन किया गया जिसमें 96118 प्रतिभागी शामिल थे।

## मेरा गाँव मेरा गौरव (एमजीएमजी)

मेरा गाँव मेरा गौरव कार्यक्रम के अंतर्गत, 10 भाकृअनुप के अनुसंधान संस्थानों ने 77 टीमों के माध्यम से कुल 321 वैज्ञानिकों ने 256 गाँवों को अपनाया और विभिन्न गतिविधियों को कार्यान्वित किया।

# Executive Summary

ICAR- ATARI, Hyderabad is mandated to coordinate technology application interventions of 75 sanctioned KVKs located in Zone-X comprising the states of Andhra Pradesh, Telangana, Tamil Nadu and the union territory of Puducherry. Among the established KVKs of the zone, 72 are functional during 2023. The Annual Report 2023 documents the activities of 31 KVKs in Tamil Nadu, 23 in Andhra Pradesh, 16 in Telangana and 2 in Puducherry.

## Technology Assessment

During the year, KVKs assessed 1573 technologies by laying out 4779 On-Farm Trials. Of these technologies tested, 1087 technologies are related to crops, 223 are related to animals and 62 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 637 technologies by conducting 1998 OFTs covering crops including horticultural species (485) and animals (84). KVKs in Andhra Pradesh, assessed the suitability of 664 technologies by conducting 1770 OFTs covering crops including horticultural species (405), animals (118) and empowerment of rural women (50). KVKs in Telangana, assessed the suitability of 234 technologies by conducting 909 OFTs covering crops including horticultural species (599), animals (105) and empowerment of rural women (68). KVKs in Puducherry, assessed 38 technologies by organizing 102 OFTs that include crops including horticultural species (5) and animals (7).

## Technology demonstrations

KVKs in Zone X conducted 11950 frontline demonstrations on crops (6112), animals (2597) and farm implements (319) in an area of 2932.18 ha. Among the 1224 demonstrations in cereals, 1153 were on rice. Among the 685 demonstrations on pulses, 292 were in blackgram and 136 in redgram. Among 478 demonstrations in oilseeds, 373 were in groundnut. In commercial crops 105 demonstrations were in sugarcane.

In Tamil Nadu, out of 5700 demonstrations, 856 were in cereals and 592 in vegetables. In Andhra Pradesh out of 3952 demonstrations, 399 were in fruits, 295 on vegetables, 181 in millets and 210 in cereals. Out of 2014 demonstrations in Telangana, 197 were in vegetables and 138 in cereals. In Puducherry, out of 284 demonstrations, 20 were in cereals, 15 in vegetables, 30 in pulses and 20 in millets. KVKs of the zone conducted 2597 demonstrations on livestock, poultry and fisheries involving 716400 animals, poultry birds and fish fingerlings.

## Trainings

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 9489 training programmes covering 370431 participants that include 238103 farmers, 33827 rural youth and 41950 extension functionaries.

KVKs in Tamil Nadu, organized 4725 training courses with a participation of 169485 farmers including farmwomen, rural youth and extension functionaries, while KVKs in Andhra Pradesh organized 3281 training courses with a participation of 82025 farmers including farmwomen, rural youth and extension functionaries. KVKs in Telangana conducted 1311 courses for 59613 beneficiaries. KVKs in Puducherry, conducted 172 courses for 4366 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 676 sponsored training programmes covering 47127 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 371vocational training programmes for 9424 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

To create awareness on improved technologies the KVKs in Zone-X organized 48804 extension activities with the participation of 4154945 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.

## Testing services and supply of critical inputs

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 52124 samples including 44892 soil samples, 6309 water samples, 661 plant samples and 50 fertilizers/manures were analyzed by the KVKs that benefited 45249 farmers belonging to 8546 villages in Tamil Nadu, Andhra Pradesh, Telangana and Puducherry.

KVKs produced and supplied 13120 q of seed and 111.56 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 3266.42 q of seed (G reengram, blackgram, redgram and Bengal gram) for supply of quality seed to farmers. KVKs distributed 9.16 lakh livestock materials including cattle goat and sheep, poultry chicks and fish fingerlings to farmers.

## National Innovations in Climate Resilience Agriculture (NICRA)

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, 364 demonstrations were organized benefiting 680 farmers under NRM interventions. Under crop production module, 875 demonstrations were taken up covering 1310 farmers. Under livestock and fisheries interventions, 1000 farmers were benefited. Under institutional interventions like custom hiring center, fodder bank and seed bank 807 farmers were benefited. Through capacity building and extension activities, awareness on climate resilient technologies was brought about benefitting 3481 and 4285 farmers through 85 and 64 activities respectively.

## Attracting and Retaining Youth in Agriculture (ARYA)

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 2210 rural youth through 81 training programmes for establishing enterprise units under the project. Enterprise units numbering 421 were established benefiting 727 rural youth during 2023 ensuring livelihood security.

## Farmer FIRST Project (FFP)

Four ICAR Institutes (IIMR, IIOPR, IIOR and CRIDA) and one University (TANUVAS) implemented Farmer FIRST project. The Farmer FIRST centers undertook 69 interventions covering 2327 ha area and 6589 households in the operational villages. Twenty four crop-based technologies were demonstrated in 1735 ha . Horticultural interventions on 5 technologies were demonstrated in 75 ha. In livestock module, 6 technologies were demonstrated involving 978. Nine NRM technologies were demonstrated in 517 ha. Five enterprises were established for the benefit of 322 households.

## District Agro Met Units (DAMU)

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 18838 block level bulletins and 8106 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 385 such programmes were organized with the participation of about 21740 farmers and farm women during the year 2023 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 43 feedback studies and 37 impact studies were conducted by the KVKs of zone X.

## Cluster Frontline Demonstrations on Pulses and Oilseeds

Cluster Frontline Demonstrations on Pulses under NFSM were organized by 63 KVKs comprising of Tamil Nadu, Andhra Pradesh, Telangana and Puducherry in Zone-X during 2023 across three seasons. A total of 7699 FLDs were conducted covering an area of 3582.5 ha under pulses. Similarly, 5389 cluster frontline demonstrations covering 2156 ha were conducted under NFSM in oilseed crops by 56 KVKs during *kharif* and *rabi* 2023. 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)

The Tribal Sub Plan (TSP) aimed at ameliorating the socio-economic conditions of tribal communities was implemented by 19 KVKs in the zone (7 in Andhra Pradesh, 9 in Telangana and 3 in Tamil Nadu) and facilitated creation of 2359 assets/ micro-enterprises and provided income generating opportunities to 4285 tribals. Skill development trainings (50) were imparted to 1194 beneficiaries.

## Natural Farming

44 KVKs of the zone implemented the project "Outscaling of natural farming through KVKs durin 2023-24. The KVKs conducted 381 awareness programmes related to natural farming involving 25418 farmers. The capacity of 8885 farmers was built on the concept and practice of natural farming in different crops through 236 training programmes. Field demonstrations on the performance of natural farming practices were conducted at 528 locations in comparison with conventional method of farming.

## Kisan Sarathi

ATARI, Hyderabad implemented Kisan Sarathi involving a total of 71 KVKs, 13 DATT Centers in which a total of 1346000 farmers have been registered in the portal by the KVKs of Andhra Pradesh (572555), Tamil Nadu (411221), Telangana (445074) and Puducherry (2946) to receive personalized advisories on agriculture and allied areas directly from the respective scientists of Krishi Vigyan Kendra (KVKs).

## Swachhta Hi Sewa

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 2023, KVKs of zone 10 conducted these activities with the participation of 96118 rural population. Special campaign on Swachhata Abhiyana conducted during October 2022-23 in which Swachhata activities were conducted every day of the month.

## *Mera Gaon Mera Gaurav*

Under *Mera Gaon Mera Gaurav* (MGMG), which is implemented by 10 ICAR institutes in the zone, 256villages were adopted by 77 teams of scientists and they organized 1430 activities which benefited 21870 farmers and rural people.

# 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, 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 2023-24. 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 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 2021 |
|---|---|---|---|---|---|---|---|---|
| | | 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 is given in Table 2.2.1. The total sanctioned staff strength of KVKs in Zone-X stands at 1152, out of which 929 (80.64%) positions are filled. Scientific staff strength is 432 out of which 359 (83.10%) are filled. In Tamil Nadu, 434 out of 496 positions are filled (87.50%), in Andhra Pradesh, 264 out of 368 positions are filled (71.74%), in Telangana, 210 out of 256 positions are filled (82.03%) and in Puducherry, 21 out of 32 positions are filled (65.63%).

**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 | 21 | 2 | 16 | 12 | 4 | 2 | 2 | 0 | 72 | 62 | 10 |
| Subject Matter Specialists | 186 | 170 | 16 | 138 | 106 | 32 | 96 | 74 | 22 | 12 | 9 | 3 | 432 | 359 | 73 |
| Farm Managers | 31 | 26 | 5 | 23 | 14 | 9 | 16 | 13 | 3 | 2 | 2 | 0 | 72 | 55 | 17 |
| Programme Assistant (Computer) | 31 | 26 | 5 | 23 | 16 | 7 | 16 | 13 | 3 | 2 | 2 | 0 | 72 | 57 | 15 |
| Programme Assistant (Lab Tech) | 31 | 27 | 4 | 23 | 14 | 9 | 16 | 14 | 2 | 2 | 1 | 1 | 72 | 56 | 16 |
| Assistant | 31 | 28 | 3 | 23 | 17 | 6 | 16 | 14 | 2 | 2 | 0 | 2 | 72 | 59 | 13 |
| Stenographer (Grade-III) | 31 | 25 | 6 | 23 | 14 | 9 | 16 | 13 | 3 | 2 | 0 | 2 | 72 | 52 | 20 |
| Driver | 62 | 53 | 9 | 46 | 30 | 16 | 32 | 28 | 4 | 4 | 2 | 2 | 144 | 113 | 31 |
| SSS | 62 | 52 | 10 | 46 | 32 | 14 | 32 | 29 | 3 | 4 | 3 | 1 | 144 | 116 | 28 |
| **Total** | **496** | **434** | **62** | **368** | **264** | **104** | **256** | **210** | **46** | **32** | **21** | **11** | **1152** | **929** | **223** |

*S=Sanctioned; F= Filled; V=Vacant*

## 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) | Cultivable area (ha) | Admin Building | Farmers Hostel | Staff Quarters | Soil & Water Testing Lab | Mini Soil Testing Kit | Sales Counter | IFS Unit | Jeep | Tractor | Two-wheeler | No. of Demo Units |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ariyalur | 20.00 | 18.64 | Yes | Yes | Yes | No | Yes | No | Yes | Yes | Yes | Yes | 26 |
| Coimbatore | 20.50 | 11.50 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | 25 |
| Cuddalore | 20.00 | 19.90 | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes | 18 |
| Dharmapuri | 16.16 | 12.14 | Yes | Yes | No | No | Yes | Yes | Yes | Yes | yes | Yes | 31 |
| Dindigul | 20.00 | 17.20 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | 29 |
| Erode | 22.00 | 19.00 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | 23 |
| Kancheepuram | 20.00 | 11.92 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | 19 |
| Kanyakumari | 15.89 | 2.26 | Yes | No | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes | 16 |
| Karur | 21.51 | 12.31 | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes | 19 |
| Krishnagiri | 20.30 | 10.00 | Yes | Yes | No | No | Yes | No | Yes | Yes | Yes | Yes | 22 |
| Madurai | 20.98 | 3.68 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | 21 |
| Nagapattinam | 22.67 | 14.00 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | 31 |
| Namakkal | 20.00 | 8.00 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | 44 |
| Nilgiris | 20.00 | 0.00 | No | No | No | No | No | No | No | No | No | No | 0 |
| Perambalur | 21.54 | 21.32 | Yes | Yes | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | 13 |
| Pudukkottai | 23.20 | 20.15 | Yes | No | Yes | No | Yes | Yes | Yes | Yes | Yes | Yes | 24 |
| Ramanathapuram | 17.76 | 13.63 | Yes | No | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes | 12 |
| Salem | 9.95 | 7.10 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | 41 |
| Sivagangai | 17.95 | 15.50 | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes | 17 |
| Theni | 21.58 | 21.58 | Yes | Yes | Yes | Yes | Yes | No | No | Yes | Yes | Yes | 21 |
| Thiruvallur | 16.00 | 0.00 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | 12 |
| Thiruvannamalai | 20.48 | 9.50 | Yes | Yes | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | 33 |
| Thiruvarur | 18.66 | 14.00 | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes | 16 |
| Thoothukudi | 20.00 | 16.50 | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | No | Yes | 20 |
| Tiruchirappalli | 20.00 | 15.00 | Yes | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | 22 |
| Tirunelveli | 20.00 | 15.00 | Yes | Yes | Yes | Yes | No | No | Yes | Yes | Yes | Yes | 34 |
| Tiruppur | 15.62 | 12.82 | Yes | Yes | No | No | Yes | Yes | Yes | Yes | Yes | Yes | 17 |
| Vellore | 22.40 | 14.98 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | 24 |
| Villupuram | 16.10 | 12.50 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | Yes | 13 |
| Villupuram II | 20.00 | 16.00 | Yes | Yes | No | Yes | No | Yes | No | Yes | Yes | Yes | 16 |
| Virudhunagar | 16.00 | 7.30 | Yes | Yes | No | Yes | No | Yes | Yes | Yes | Yes | Yes | 22 |
| **Total** | **597.25** | **397.91** | **30** | **26** | **21** | **25** | **24** | **26** | **26** | **30** | **28** | **29** | **681** |

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

| KVK | Land area (ha) | Cultivable area (ha) | Admin Building | Farmers Hostel | Staff Quarters | Soil & Water Testing Lab | Mini Soil Testing Kit | Sales Counter | IFS Unit | Jeep | Tractor | Two-wheeler | No. of Demo Units |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ananthapuram (Reddipalli) | 21.25 | 10.58 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | 5 |
| Ananthapuram (Kalyandurg) | 20.23 | 15.40 | Yes | No | No | Yes | No | Yes | Yes | Yes | Yes | Yes | 8 |
| Chittoor (RASS) | 17.80 | 13.46 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | 29 |
| Chittoor (Kalikiri) | 20.22 | 5.00 | Yes | No | Yes | Yes | No | Yes | Yes | Yes | yes | Yes | 10 |
| East Godavari (Kalavacharla) | 14.55 | 11.55 | Yes | Yes | No | No | No | No | Yes | No | Yes | No | 18 |
| East Godavari (Pandirimamidi) | 19.40 | 16.98 | Yes | Yes | No | No | Yes | No | yes | Yes | Yes | No | 24 |
| Guntur (Lam) | 23.60 | 21.60 | Yes | No | No | Yes | No | Yes | Yes | Yes | Yes | Yes | 11 |
| Kadapa (Utukur) | 13.20 | 9.66 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | Yes | Yes | 8 |
| Kadapa (Vonipenta) | 42.36 | 10.00 | Yes | Yes | No | No | No | No | No | Yes | No | Yes | 15 |
| Krishna (Garikapadu) | 21.29 | 18.19 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | 23 |
| Krishna (Ghantasala) | 15.18 | 12.00 | Yes | Yes | No | Yes | Yes | No | Yes | Yes | Yes | Yes | 14 |
| Kurnool (Yagantipalle) | 20.00 | 12.00 | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes | 30 |
| Kurnool (Banavasi) | 20.00 | 8.00 | Yes | No | Yes | Yes | No | No | Yes | Yes | Yes | No | 20 |
| Nellore | 24.00 | 10.00 | Yes | No | Yes | Yes | No | Yes | Yes | Yes | Yes | No | 8 |
| Nellore (Periyavaram) | 22.70 | 12.50 | No | Yes | No | No | Yes | No | No | Yes | No | Yes | 13 |
| Prakasam (Darsi) | 22.66 | 19.01 | Yes | No | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes | 11 |
| Prakasam (Kandukur) | 20.00 | 14.00 | Yes | No | No | No | Yes | No | Yes | Yes | Yes | No | 11 |
| Srikakulam | 19.27 | 14.07 | Yes | Yes | Yes | Yes | No | No | Yes | Yes | Yes | No | 10 |
| Visakhapatnam (Haripuram) | 40.00 | 15.00 | Yes | Yes | No | Yes | No | Yes | Yes | Yes | No | No | 18 |
| Visakhapatnam (Kondempudi) | 20.00 | 14.00 | Yes | Yes | No | Yes | No | No | Yes | Yes | Yes | Yes | 12 |
| Vizianagaram | 22.55 | 11.30 | Yes | Yes | No | Yes | No | Yes | No | Yes | Yes | Yes | 59 |
| West Godavari (Undi) | 15.00 | 11.70 | Yes | Yes | No | No | No | No | Yes | Yes | yes | No | 13 |
| West Godavari (VR Gudem) | 20.00 | 14.50 | Yes | Yes | No | No | Yes | Yes | Yes | Yes | Yes | No | 40 |
| **Total** | **495.26** | **300.50** | **22** | **16** | **10** | **16** | **9** | **13** | **20** | **21** | **20** | **13** | **410** |

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

| KVK | Land area (ha) | Cultivable area (ha) | Admin Building | Farmers Hostel | Staff Quarters | Soil & Water Testing Lab | Mini Soil Testing Kit | Sales Counter | IFS Unit | Jeep | Tractor | Two-wheeler | No. of Demo Units |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Adilabad | 6.35 | 5.40 | Yes | Yes | No | Yes | Yes | No | No | Yes | Yes | Yes | 2 |
| Kammam (Wyra) | 13.38 | 10.60 | Yes | No | No | Yes | No | No | Yes | Yes | Yes | No | 16 |
| Kammam (Kothagudam) | 20.00 | 5.00 | Yes | No | No | Yes | Yes | No | Yes | Yes | Yes | Yes | 2 |
| Karimnagar (Jammikunta) | 25.60 | 20.60 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | 31 |
| Karimnagar (Ramagirikhilla) | 64.10 | 25.60 | Yes | Yes | No | Yes | Yes | No | No | Yes | Yes | Yes | 4 |
| Mahabubnagar (YFA) | 20.00 | 13.60 | Yes | Yes | Yes | No | Yes | No | No | Yes | Yes | No | 14 |
| Mahabubnagar (Palem) | 21.26 | 14.27 | Yes | Yes | No | Yes | No | No | Yes | Yes | Yes | Yes | 17 |
| Mancherial | 20.00 | 11.40 | Yes | Yes | No | No | No | No | No | Yes | Yes | Yes | 13 |
| Medak (DSS) | 25.80 | 12.50 | Yes | Yes | Yes | Yes | No | No | Yes | Yes | Yes | Yes | 21 |
| Medak (Tuniki) | 12.00 | 8.63 | Yes | No | No | No | Yes | No | Yes | Yes | Yes | Yes | 22 |
| Nalgonda (Gaddipally) | 25.60 | 25.60 | Yes | Yes | Yes | Yes | Yes | Yes | No | No | Yes | No | 24 |
| Nalgonda (Kampasagar) | 20.00 | 18.40 | Yes | Yes | No | No | Yes | No | Yes | Yes | Yes | Yes | 7 |
| Nizamabad | 20.00 | 20.00 | Yes | Yes | Yes | Yes | Yes | No | No | Yes | Yes | Yes | 6 |
| Ranga Reddy | 20.00 | 0.00 | Yes | Yes | No | Yes | Yes | No | Yes | No | Yes | Yes | 10 |
| Warangal (Malyal) | 18.30 | 11.70 | Yes | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | 6 |
| Warangal (Mamnoor) | 20.00 | 3.20 | Yes | Yes | No | Yes | Yes | No | Yes | No | Yes | Yes | 10 |
| **Total** | **352.39** | **206.50** | **16** | **13** | **6** | **12** | **12** | **2** | **10** | **13** | **16** | **13** | **205** |

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

| KVK | Land area (ha) | Cultivable area (ha) | Admin Building | Farmers Hostel | Staff Quarters | Soil & Water Testing Lab | Mini Soil Testing Kit | Sales Counter | IFS Unit | Jeep | Tractor | Two-wheeler | No. of Demo Units |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Karaikal | 24.38 | 14.00 | Yes | No | No | No | No | No | No | Yes | Yes | Yes | 14 |
| Puducherry | 58.00 | 39.20 | Yes | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | 23 |
| **Total** | **82.38** | **53.20** | **2** | **0** | **1** | **1** | **1** | **1** | **1** | **2** | **2** | **2** | **37** |

## 2.4. Revolving Fund

The total receipts through revolving fund by KVKs in the Zone-X is Rs.2111.35 lakhs of which Rs.1049.28 lakhs are generated by KVKs in Tamil Nadu, Rs.706.87 lakhs by KVKs in Andhra Pradesh, Rs.322.18 lakhs by KVKs in Telangana and Rs.33.01 lakhs by KVKs in Puducherry (Table 2.4.1.). Closing Balance as on 31.03.2024 is Rs.2001.93 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 2023-24 | Expenditure 2023-24 | Balance on 31.03.2024 |
|---|---|---|---|
| Tamil Nadu | 1049.28 | 990.44 | 622.02 |
| Andhra Pradesh | 706.87 | 626.77 | 694.57 |
| Telangana | 322.18 | 253.82 | 664.99 |
| Puducherry | 33.01 | 24.62 | 20.35 |
| **Total** | **2111.35** | **1895.66** | **2001.93** |


**Administrative building - KVK, Ariyalur, Tamil Nadu**


**Soil testing lab – KVK, Palem , Telangana**

**Solar Drying Unit – KVK, Villuppuram, Tamil Nadu**

**Inauguration of Admin. Building – KVK, Adilabad, Telangana**


**ITK Museum – KVK, Vizianagaram, AP**

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

| KVK | Receipts (2023-24) | Expenditure (2023-24) | Balance as on 31.03.2024 |
|---|---|---|---|
| Ariyalur | 28.28 | 33.59 | 4.73 |
| Coimbatore | 7.26 | 9.20 | 12.69 |
| Cuddalore | 47.26 | 32.28 | 25.73 |
| Dharmapuri | 30.22 | 40.00 | 19.59 |
| Dindigul | 10.32 | 12.71 | 38.04 |
| Erode | 1.79 | 0.95 | 13.08 |
| Kancheepuram | 11.04 | 11.25 | 16.02 |
| Kanyakumari | 10.89 | 9.69 | 8.20 |
| Karur | 57.33 | 52.36 | 12.00 |
| Krishnagiri | 120.64 | 101.78 | 57.08 |
| Madurai | 28.86 | 5.88 | 35.33 |
| Nagapattinam | 9.92 | 9.56 | 0.89 |
| Namakkal | 118.52 | 119.61 | 95.24 |
| Nilgiris | 4.00 | 0.00 | 4.00 |
| Perambalur | 119.56 | 139.01 | 39.71 |
| Pudukkottai | 14.99 | 9.90 | 8.48 |
| Ramanathapuram | 12.75 | 8.58 | 7.01 |
| Salem | 45.59 | 43.09 | 19.54 |
| Sivagangai | 11.69 | 5.82 | 33.45 |
| Theni | 11.47 | 5.16 | 15.83 |
| Thiruvallur | 10.37 | 4.47 | 12.78 |
| Thiruvannamalai | 85.70 | 86.64 | 16.99 |
| Thiruvarur | 41.63 | 28.99 | 13.30 |
| Thoothukudi | 58.81 | 82.29 | 3.99 |

| KVK | Receipts (2023-24) | Expenditure (2023-24) | Balance as on 31.03.2024 |
|---|---|---|---|
| Tiruchirappalli | 22.24 | 29.30 | 7.94 |
| Tirunelveli | 26.39 | 20.82 | 13.99 |
| Tiruppur | 18.66 | 19.79 | 7.64 |
| Vellore | 19.40 | 16.29 | 38.10 |
| Villupuram | 25.99 | 20.34 | 25.01 |
| Villupuram II | 23.42 | 18.55 | 11.15 |
| Virudhunagar | 14.30 | 12.56 | 4.48 |
| **Total** | **1049.28** | **990.44** | **622.02** |

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

| KVK | Receipts (2023-24) | Expenditure (2023-24) | Balance as on 31.03.2024 |
|---|---|---|---|
| Ananthapuram (Reddipalli) | 33.04 | 28.81 | 74.97 |
| Ananthapuram (Kalyandurg) | 17.52 | 15.75 | 22.43 |
| Chittoor (RASS) | 42.57 | 39.42 | 74.15 |
| Chittoor (Kalikiri) | 5.16 | 4.18 | 10.81 |
| East Godavari (Kalavacharla) | 0.00 | 0.00 | 21.00 |
| East Godavari (Pandirimamidi) | 24.85 | 14.92 | 54.71 |
| Guntur (Lam) | 5.18 | 3.10 | 10.08 |
| Kadapa (Utukur) | 8.83 | 13.99 | 9.80 |
| Kadapa (Vonipenta) | 3.19 | 0.25 | 7.15 |
| Krishna (Garikapadu) | 35.58 | 32.87 | 13.44 |
| Krishna (Ghantasala) | 37.46 | 37.87 | 33.08 |
| Kurnool (Yagantipalle) | 167.57 | 168.61 | 7.19 |
| Kurnool (Banavasi) | 17.67 | 11.52 | 30.97 |
| Nellore (Nellore) | 8.90 | 2.81 | 14.44 |
| Nellore (Periyavaram) | 1.98 | 0.00 | 10.17 |
| Prakasam (Darsi) | 24.15 | 15.28 | 52.84 |
| Prakasam (Kandukur) | 1.28 | 0.00 | 11.81 |
| Srikakulam | 29.12 | 52.31 | 12.38 |
| Visakhapatnam (BCT) | 27.97 | 34.46 | 69.38 |
| Visakhapatnam (Kondempudi) | 149.51 | 91.64 | 64.76 |
| Vizianagaram | 13.90 | 8.06 | 22.40 |
| West Godavari (Undi) | 35.88 | 33.76 | 29.24 |
| West Godavari (VR Gudem) | 15.57 | 17.16 | 37.36 |
| **Total** | **706.87** | **626.77** | **694.57** |

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

| KVK | Receipts (2023-24) | Expenditure (2023-24) | Balance as on 31.03.2024 |
|---|---|---|---|
| Adilabad | 20.27 | 3.50 | 52.46 |
| Khammam (Wyra) | 31.65 | 17.97 | 183.42 |
| Khammam (Kothagudam) | 1.78 | 0.00 | 13.39 |
| Karimnagar (Jammikunta) | 2.72 | 0.07 | 70.54 |
| Karimnagar (Ramagirikhilla) | 12.36 | 9.26 | 11.82 |
| Mahabubnagar (YFA) | 21.27 | 16.29 | 31.68 |
| Mahabubnagar (Palem) | 20.49 | 11.97 | 29.75 |
| Mancherial | 2.21 | 0.30 | 11.81 |
| Medak (DSS) | 19.48 | 8.71 | 19.47 |
| Medak (Tuniki) | 82.29 | 103.28 | 14.70 |
| Nalgonda (Gaddipally) | 36.31 | 43.13 | 92.06 |

| KVK | Receipts (2023-24) | Expenditure (2023-24) | Balance as on 31.03.2024 |
|---|---|---|---|
| Nalgonda (Kampasagar) | 41.09 | 24.79 | 22.49 |
| Dr.S.Naveen Kumar | 13.24 | 4.60 | 30.52 |
| Ranga Reddy | 1.01 | 0.07 | 2.26 |
| Warangal (Malyal) | 9.05 | 7.70 | 72.43 |
| Warangal (Mamnoor) | 6.95 | 2.20 | 6.18 |
| **Total** | **322.18** | **253.82** | **664.99** |

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

| KVK | Receipts (2023-24) | Expenditure (2023-24) | Balance as on 31.03.2024 |
|---|---|---|---|
| Karaikal | 9.57 | 11.40 | 3.00 |
| Puducherry | 23.45 | 13.23 | 17.36 |
| **Total** | **33.01** | **24.62** | **20.35** |

## 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 71 Scientific Advisory Committee meetings were conducted by KVKs for the year 2023-24 (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** |

Under the guidance of KVK, Kalikiri I cultivated high yielding Groundnut variety Visishta (TCGS-1694) and got a yield of 14q/ha under rainfed conditions. I earned an additional income of Rs.12,000/- per ha. Now farmers of my village and surrounding 4 villages are cultivating this variety.

**Adinarayana Reddy**
Kaikiri, Annamayya District, Andhra Pradesh

# 3. Achievements

## 3.1. Technology Assessment

During the year, KVKs in Zone X assessed 1573 technologies in 4779 trials conducted at different locations on farmers' fields (Table 3.1.1) through On-farm Trials (OTF). The technologies included 1087 on crops, 223 on animals 62 on women empowerment, 122 technologies on Enterprises 52 on farm machinery, 2 on ICT and 25 others. KVKs of Tamil Nadu, Andhra Pradesh, Telangana, and Puducherry assessed 637, 664, 234 and 38 technologies in 1998, 1770, 909 and 102 trials, respectively.

A total of 1087 technologies assessed were on crops of which 421 were new and improved crop varieties (Table 3.1.2.). Among the other crop production and protection technologies, 89 were on ICM, 85 on IDM, 156 on INM, 34 on IPDM and 154 on IPM. Out of 223 technologies assessed in the animal category, 59 were on nutrition management and 46 on disease management. In women empowerment 62 technologies were assessed and in enterprises, 70 technologies were assessed. Under farm machinery, 52 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 | 268 | 648 | 29 | 214 | 460 | 22 | 95 | 358 | 14 | 18 | 55 | 2 | **595** | **1521** | **67** |
| Horticultural Crops | 217 | 540 | 29 | 191 | 498 | 22 | 70 | 241 | 14 | 14 | 34 | 2 | **492** | **1313** | **67** |
| **Total Crops** | **485** | **1188** | **30** | **405** | **958** | **23** | **165** | **599** | **16** | **32** | **89** | **2** | **1087** | **2834** | **71** |
| Animals | 84 | 248 | 17 | 118 | 324 | 20 | 17 | 105 | 4 | 4 | 8 | 1 | **223** | **685** | **42** |
| Women empowerment | 0 | 0 | 0 | 50 | 264 | 9 | 12 | 68 | 5 | 0 | 0 | 0 | **62** | **332** | **14** |
| Enterprises | 47 | 124 | 13 | 66 | 166 | 9 | 7 | 62 | 4 | 2 | 5 | 1 | **122** | **357** | **27** |
| Farm Machinery | 2 | 3 | 1 | 18 | 43 | 3 | 32 | 70 | 9 | 0 | 0 | 0 | **52** | **116** | **13** |
| ICT | 2 | 50 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **2** | **50** | **1** |
| Others | 17 | 385 | 5 | 7 | 15 | 2 | 1 | 5 | 1 | 0 | 0 | 0 | **25** | **405** | **8** |
| **Total** | **637** | **1998** | **31** | **664** | **1770** | **23** | **234** | **909** | **16** | **38** | **102** | **2** | **1573** | **4779** | **72** |

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

In Tamil Nadu, 485 crop based technologies were assessed for their suitability in 1188 locations, 84 technologies on animals in 248 locations, 47 technologies on enterprises in 124 locations, two technologies on ICT were assessed in 50 locations and 17 technologies on Others in 385 locations. The KVKs of Andhra Pradesh assessed the suitability of 405 crop-based technologies in 958 locations, 118 animal-based technologies in 324 locations, 50 technologies for women empowerment in 264 locations and 66 technologies on enterprises in 166 locations. In Telangana, 165 crop-based technologies were assessed for their suitability in 599 locations, 17 animal-based technologies in 105 locations, 12 technologies for the empowerment of women in 68 locations and 7 technologies for enterprises in 62 locations. On farm machinery and 32 technologies were assessed at 70 locations. In Puducherry, 32 crop-based technologies were assessed for their suitability in 89 locations, in animals four technologies in eight locations and two enterprises technologies in five locations.

## 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** | | | | | | | | | | | | | | | | | | | | |
| Biological control | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 5 | 1 | 0 | 0 | 0 | 0 | **1** | **1** | **5** | **1** |
| Canopy Management | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6 | 12 | 3 | 0 | 0 | 0 | 0 | **4** | **6** | **12** | **3** |
| Cropping Systems | 0 | 0 | 0 | 0 | 6 | 13 | 28 | 4 | 7 | 10 | 21 | 3 | 0 | 0 | 0 | 0 | **13** | **23** | **49** | **7** |
| ICM | 15 | 30 | 75 | 8 | 11 | 22 | 43 | 10 | 5 | 8 | 32 | 5 | 0 | 0 | 0 | 0 | **31** | **60** | **150** | **23** |
| IDM | 14 | 20 | 50 | 8 | 10 | 19 | 45 | 8 | 9 | 11 | 37 | 7 | 0 | 0 | 0 | 0 | **33** | **50** | **132** | **23** |
| INM | 40 | 78 | 190 | 18 | 11 | 20 | 48 | 8 | 5 | 7 | 31 | 5 | 3 | 6 | 20 | 2 | **59** | **111** | **289** | **33** |
| IPDM | 2 | 3 | 20 | 2 | 5 | 10 | 21 | 4 | 6 | 6 | 26 | 5 | 0 | 0 | 0 | 0 | **13** | **19** | **67** | **11** |
| IPM | 19 | 22 | 55 | 8 | 6 | 11 | 26 | 4 | 11 | 11 | 40 | 8 | 2 | 4 | 10 | 2 | **38** | **48** | **131** | **22** |
| Post Harvest Technology / Value addition | 2 | 4 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **2** | **4** | **8** | **2** |
| Resource Conservation Technology | 2 | 4 | 10 | 2 | 12 | 24 | 55 | 8 | 3 | 3 | 18 | 3 | 0 | 0 | 0 | 0 | **17** | **31** | **83** | **13** |
| Soil health management | 1 | 2 | 2 | 1 | 3 | 6 | 12 | 3 | 4 | 4 | 15 | 3 | 0 | 0 | 0 | 0 | **8** | **12** | **29** | **7** |
| Varietal Assessment | 46 | 93 | 213 | 25 | 36 | 65 | 144 | 17 | 21 | 22 | 91 | 10 | 3 | 6 | 15 | 2 | **106** | **186** | **463** | **54** |
| Weed Management | 10 | 12 | 25 | 5 | 5 | 10 | 15 | 4 | 6 | 6 | 30 | 5 | 2 | 2 | 10 | 1 | **23** | **30** | **80** | **15** |
| Others | 0 | 0 | 0 | 0 | 7 | 14 | 23 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **7** | **14** | **23** | **4** |
| **Total (Agricultural Crops)** | **151** | **268** | **648** | **29** | **112** | **214** | **460** | **22** | **82** | **95** | **358** | **14** | **10** | **18** | **55** | **2** | **355** | **595** | **1521** | **67** |
| **Horticultural Crops** | | | | | | | | | | | | | | | | | | | | |
| Biological control | 0 | 0 | 0 | 0 | 1 | 2 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** | **2** | **6** | **1** |
| Cropping Systems | 1 | 2 | 5 | 1 | 0 | 0 | 0 | 0 | 3 | 4 | 9 | 3 | 0 | 0 | 0 | 0 | **4** | **6** | **14** | **4** |
| Fertigation Technique | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 6 | 1 | 0 | 0 | 0 | 0 | **1** | **1** | **6** | **1** |
| ICM | 5 | 8 | 21 | 3 | 4 | 9 | 18 | 3 | 9 | 12 | 33 | 6 | 0 | 0 | 0 | 0 | **18** | **29** | **72** | **12** |
| IDM | 11 | 22 | 51 | 9 | 5 | 10 | 30 | 4 | 2 | 3 | 9 | 2 | 0 | 0 | 0 | 0 | **18** | **35** | **90** | **15** |
| INM | 13 | 26 | 61 | 12 | 6 | 12 | 41 | 3 | 4 | 5 | 19 | 4 | 1 | 2 | 5 | 1 | **24** | **45** | **126** | **20** |
| IPDM | 7 | 11 | 27 | 3 | 2 | 4 | 10 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **9** | **15** | **37** | **5** |
| IPM | 18 | 36 | 88 | 13 | 24 | 48 | 146 | 18 | 16 | 18 | 75 | 9 | 2 | 4 | 9 | 2 | **60** | **106** | **318** | **42** |
| Post Harvest Technology / Value addition | 3 | 6 | 15 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **3** | **6** | **15** | **3** |
| Resource Conservation Technology | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | **1** | **1** | **3** | **1** |
| Soil health management | 1 | 2 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** | **2** | **5** | **1** |
| Varietal Assessment | 47 | 99 | 254 | 22 | 57 | 102 | 235 | 20 | 23 | 26 | 87 | 11 | 4 | 8 | 20 | 2 | **131** | **235** | **596** | **55** |
| Weed Management | 1 | 2 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** | **2** | **5** | **1** |
| Others | 2 | 3 | 8 | 2 | 2 | 4 | 12 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **4** | **7** | **20** | **4** |
| **Total (Horticultural Crops)** | **109** | **217** | **540** | **29** | **101** | **191** | **498** | **22** | **59** | **70** | **241** | **14** | **7** | **14** | **34** | **2** | **276** | **492** | **1313** | **67** |
| **Animals** | | | | | | | | | | | | | | | | | | | | |
| Composite fish culture | 0 | 0 | 0 | 0 | 3 | 4 | 17 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **3** | **4** | **17** | **2** |
| Disease Management | 16 | 31 | 89 | 11 | 7 | 12 | 36 | 7 | 3 | 3 | 13 | 3 | 0 | 0 | 0 | 0 | **26** | **46** | **138** | **21** |
| Evaluation of Breeds | 7 | 12 | 43 | 7 | 10 | 17 | 51 | 8 | 1 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | **18** | **30** | **97** | **16** |
| Feed and Fodder management | 0 | 0 | 0 | 0 | 11 | 22 | 65 | 9 | 1 | 1 | 4 | 1 | 1 | 2 | 3 | 1 | **13** | **25** | **72** | **11** |
| Fish Production | 5 | 10 | 19 | 3 | 5 | 9 | 27 | 3 | 4 | 4 | 12 | 3 | 0 | 0 | 0 | 0 | **14** | **23** | **58** | **9** |
| Nutrition Management | 14 | 28 | 89 | 10 | 11 | 23 | 56 | 8 | 6 | 6 | 58 | 3 | 1 | 2 | 5 | 1 | **32** | **59** | **208** | **22** |

| 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 |
| Production and Management | 2 | 3 | 8 | 2 | 14 | 29 | 69 | 11 | 2 | 2 | 15 | 2 | 0 | 0 | 0 | 0 | **18** | **34** | **92** | **15** |
| Others | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** | **2** | **3** | **1** |
| **Total (Animals)** | 44 | 84 | 248 | 17 | 62 | 118 | 324 | 20 | 17 | 17 | 105 | 4 | 2 | 4 | 8 | 1 | **125** | **223** | **685** | **42** |
| **Enterprises** | | | | | | | | | | | | | | | | | | | | |
| Drudgery Reduction | 0 | 0 | 0 | 0 | 1 | 5 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** | **5** | **5** | **1** |
| Entrepreneurship Development | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 6 | 1 | 0 | 0 | 0 | 0 | **1** | **1** | **6** | **1** |
| Fish seed production | 1 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** | **1** | **3** | **1** |
| Health and Nutrition | 3 | 6 | 15 | 2 | 19 | 20 | 70 | 3 | 1 | 1 | 30 | 1 | 0 | 0 | 0 | 0 | **23** | **27** | **115** | **6** |
| Mushroom Cultivation | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 6 | 1 | 0 | 0 | 0 | 0 | **1** | **1** | **6** | **1** |
| 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 | 13 | 3 | 2 | 4 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **5** | **10** | **18** | **4** |
| Processing and value addition | 15 | 30 | 83 | 10 | 11 | 25 | 57 | 5 | 1 | 2 | 10 | 1 | 1 | 2 | 5 | 1 | **28** | **59** | **155** | **17** |
| Small scale income generation | 0 | 0 | 0 | 0 | 2 | 7 | 12 | 2 | 2 | 2 | 10 | 1 | 0 | 0 | 0 | 0 | **4** | **9** | **22** | **3** |
| Storage techniques | 2 | 4 | 10 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **2** | **4** | **10** | **2** |
| Value Addition | 0 | 0 | 0 | 0 | 3 | 4 | 14 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **3** | **4** | **14** | **2** |
| **Total (Enterprises)** | **24** | **47** | **124** | **13** | **39** | **66** | **166** | **9** | **6** | **7** | **62** | **4** | **1** | **2** | **5** | **1** | **70** | **122** | **357** | **27** |
| **Farm Machinery** | | | | | | | | | | | | | | | | | | | | |
| Cost saving | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 13 | 15 | 3 | 0 | 0 | 0 | 0 | **4** | **13** | **15** | **3** |
| Drudgery reduction | 0 | 0 | 0 | 0 | 3 | 6 | 15 | 1 | 4 | 5 | 31 | 3 | 0 | 0 | 0 | 0 | **7** | **11** | **46** | **4** |
| Labour saving | 0 | 0 | 0 | 0 | 6 | 12 | 28 | 2 | 4 | 11 | 13 | 4 | 0 | 0 | 0 | 0 | **10** | **23** | **41** | **6** |
| Manpower saving | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 11 | 3 | 0 | 0 | 0 | 0 | **3** | **3** | **11** | **3** |
| Quality improvement | 1 | 2 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** | **2** | **3** | **1** |
| **Total (Farm Machinery)** | 1 | 2 | 3 | 1 | 9 | 18 | 43 | 3 | 15 | 32 | 70 | 9 | 0 | 0 | 0 | 0 | **25** | **52** | **116** | **13** |
| **ICT** | | | | | | | | | | | | | | | | | | | | |
| ICT | 1 | 2 | 50 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** | **2** | **50** | **1** |
| **Total (ICT)** | **1** | **2** | **50** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **2** | **50** | **1** |
| **Women empowerment** | | | | | | | | | | | | | | | | | | | | |
| Drudgery Reduction | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 6 | 9 | 1 | 0 | 0 | 0 | 0 | **3** | **6** | **9** | **1** |
| Entrepreneurship Development | 0 | 0 | 0 | 0 | 2 | 4 | 10 | 2 | 1 | 1 | 5 | 1 | 0 | 0 | 0 | 0 | **3** | **5** | **15** | **3** |
| Health and Nutrition | 0 | 0 | 0 | 0 | 5 | 11 | 67 | 4 | 3 | 3 | 48 | 3 | 0 | 0 | 0 | 0 | **8** | **14** | **115** | **7** |
| Processing and value addition | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** | **2** | **2** | **1** |
| Kitchen Gardening | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | **1** | **1** | **3** | **1** |
| Value Addition | 0 | 0 | 0 | 0 | 14 | 29 | 175 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **14** | **29** | **175** | **5** |
| Others | 0 | 0 | 0 | 0 | 3 | 4 | 10 | 2 | 1 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | **4** | **5** | **13** | **3** |
| **Total (Women Empowerment)** | **0** | **0** | **0** | **0** | **25** | **50** | **264** | **9** | **9** | **12** | **68** | **5** | **0** | **0** | **0** | **0** | **34** | **62** | **332** | **14** |
| **Others** | | | | | | | | | | | | | | | | | | | | |
| Others | 9 | 17 | 385 | 5 | 5 | 7 | 15 | 2 | 1 | 1 | 5 | 1 | 0 | 0 | 0 | 0 | **15** | **25** | **405** | **8** |
| **Total (Others)** | **9** | **17** | **385** | **5** | **5** | **7** | **15** | **2** | **1** | **1** | **5** | **1** | **0** | **0** | **0** | **0** | **15** | **25** | **405** | **8** |
| **Grand Total** | **339** | **637** | **1998** | **31** | **353** | **664** | **1770** | **23** | **189** | **234** | **909** | **16** | **20** | **38** | **102** | **2** | **901** | **1573** | **4779** | **72** |

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

# Performance of technologies

## 3.1.1. Varietal assessment

### I. Field Crops

#### a. Cereals

Rice varieties ADT 38, ADT 51, ADT 54, ADT 58, BPT 2486, BPT 2782, CO 55, CO 56, CR 1009 sub 1, CSR 56, KNM 1638, MCM 100, MCM 103, MTU 1212, MTU 1232, MTU 1310, RNR 15048, TKM 15, TPS 5 and TRY 5 were assessed by KVKs of Andhra Pradesh, Tamil Nadu and Puducherry and were found superior to Farmer's Practice with an average yield increase of 23.37 per cent and higher economic returns (Table 3.1.3).

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

| State and KVK | Treatment | | | | | Farmers practice | | |
|---|---|---|---|---|---|---|---|---|
| | Variety | No. of Trials | Yield (q/ha) | % increase over FP | BCR | Variety | Yield (q/ha) | BCR |
| **Andhra Pradesh** | | | | | | | | |
| Visakhapatnam (BCT) | MCM 100 | 5 | 69.00 | 42 | 1:1.88 | RGL 2527 | 48.75 | 1:1.67 |
| Visakhapatnam (BCT) | MCM 103 | 5 | 65.00 | 33 | 1:2.55 | RGL 2527 | 48.75 | 1:1.67 |
| West Godavari (Undi) | MTU 1212 | 3 | 75.74 | 14 | 1:2.35 | MTU 7029 | 66.25 | 1:1.98 |
| East Godavari (Kalavacharla) | MTU 1212 | 5 | 51.12 | 19 | 1:1.64 | MTU 7029 | 43.00 | 1:1.52 |
| Krishna (Ghantasala) | MTU 1310 | 3 | 61.88 | 10 | 1:1.39 | MTU 1061 | 56.25 | 1:1.29 |
| **Tamil Nadu** | | | | | | | | |
| Ramanathapuram | ADT 38 | 5 | 38.00 | 46 | 1:1.98 | Jothi mattai | 26.00 | 1:1.87 |
| Kanyakumari | ADT 51 | 5 | 65.25 | 20 | 1:1.96 | TPS 3 | 54.38 | 1:1.63 |
| MADURAI | ADT 54 | 5 | 58.40 | 16 | 1:2.34 | BPT 5204 | 50.50 | 1:1.90 |
| Ramanathapuram | ADT 54 | 5 | 37.00 | 32 | 1:1.97 | Jothi mattai | 28.00 | 1:1.73 |
| Thiruvannamalai | ADT 54 | 5 | 59.62 | 19 | 1:2.13 | Local variety | 50.28 | 1:1.65 |
| Tiruchirappalli | ADT 54 | 5 | 50.46 | 17 | 1:1.40 | BPT 5204 | 43.20 | 1:1.23 |
| Cuddalore | ADT 58 | 5 | 68.78 | 49 | 1:3.18 | ADT 39 | 46.02 | 1:1.50 |
| Thiruvallur | ADT 58 | 5 | 62.30 | 11 | 1:2.57 | ADT 39 | 56.25 | 1:2.03 |
| Thiruvarur | ADT 58 | 5 | 58.00 | 45 | 1:3.14 | ADT 39 | 40.00 | 1:2.16 |
| Tiruchirappalli | BPT 2486 | 5 | 48.80 | 13 | 1:1.38 | BPT 5204 | 43.20 | 1:1.23 |
| Tiruchirappalli | BPT 2782 | 4 | 62.00 | 13 | 1:1.29 | Local variety | 55.00 | 1:1.20 |
| Ramanathapuram | CO 55 | 5 | 41.00 | 58 | 1:2.04 | Jothi mattai | 26.00 | 1:1.87 |
| Sivagangai | CO 55 | 5 | 58.30 | 18 | 1:2.76 | BPT 5204 | 49.20 | 1:1.90 |
| Theni | CO 55 | 5 | 61.12 | 24 | 1:2.32 | Local variety | 49.27 | 1:1.52 |
| Tiruchirappalli | CO 56 | 4 | 65.00 | 18 | 1:1.33 | Local variety | 55.00 | 1:1.20 |
| Cuddalore | CSR 56 | 5 | 36.97 | 11 | 1:1.41 | BPT 5204 | 33.39 | 1:1.41 |

#### b. Millets

Finger millet varieties Indhravathi, Vegavathi, and KMR 630 performed better than farmers varieties with 11 to 54 per cent higher yield. Foxtail millet varieties Renadu, SiA 3222 and SiA 3223 performed better than farmers varieties with 10 to 38 per cent higher yield and economic returns. Pearl millet varieties ABV 04 and CO 10 performed better than the local varieties with 42 to 46 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 | 8.10 | 11 | 1:1.28 | Kayani variety | 7.30 | 1:1.12 |
| East Godavari (Pandirimamidi) | Indravathi | 5 | 9.60 | 54 | 1:1.79 | Local variety | 6.25 | 1:1.68 |
| East Godavari (Pandirimamidi) | Vegavathi | 5 | 8.75 | 40 | 1:1.79 | Local variety | 6.25 | 1:1.68 |
| **Tamil Nadu** | | | | | | | | |
| Ariyalur | KMR 630 | 3 | 21.02 | 12 | 1:2.92 | Local variety | 18.75 | 1:2.46 |
| **Foxtail millet** | | | | | | | | |
| **Andhra Pradesh** | | | | | | | | |
| Srikakulam | Renadu | 3 | 13.50 | 10 | 1:2.05 | Konda korralu | 12.30 | 1:1.86 |
| Prakasam (Kandukur) | SiA 3156 | 3 | 10.50 | 38 | 1:3.15 | Local variety | 7.62 | 1:2.29 |
| Prakasam (Kandukur) | SiA 3223 | 3 | 9.50 | 25 | 1:3.15 | Local variety | 7.62 | 1:2.29 |
| **Telangana** | | | | | | | | |
| Medak (DSS) | SIA 3222 | 5 | 14.50 | 13 | 1:1.89 | Local variety | 12.80 | 1:1.78 |
| **Kodo millet** | | | | | | | | |
| **Tamil Nadu** | | | | | | | | |
| Virudhunagar | ATL 1 | 5 | 18.50 | 42 | 1:2.79 | CO 3 | 13.00 | 1:2.02 |
| Virudhunagar | Dahod Kodo 2 | 5 | 17.90 | 38 | 1:2.79 | CO 3 | 13.00 | 1:2.02 |
| **Pearl millet** | | | | | | | | |
| **Andhra Pradesh** | | | | | | | | |
| East Godavari (Pandirimamidi) | ABV 04 | 5 | 8.60 | 42 | 1:1.78 | Local variety | 6.05 | 1:1.71 |
| **Tamil Nadu** | | | | | | | | |
| Theni | CO 10 | 5 | 23.50 | 46 | 1:2.55 | Local variety | 16.11 | 1:1.97 |
| **Sorghum** | | | | | | | | |
| **Tamil Nadu** | | | | | | | | |
| Krishnagiri | CO 32 | 5 | 23.16 | 33 | 1:2.14 | Local variety | 17.35 | 1:1.44 |

### c. Pulses

Blackgram variety TBG 104 gave 21 per cent higher yield than the local variety and variety VBN 8 gave 12 per cent higher yield than farmers variety. Varieties VBN 4, VBN 11, WGG 42 and GBG 1 performed better than the farmers varieties with 21 to 64 per cent higher yields. Chickpea variety NBeG 452, NBeG 49 and NBeG 776 gave 11 to 44 per cent higher yield than famers varieties. Greengram varieties CO 9, VBN 4, VBN 5, WGG 42 and GAM 1 performed better than farmers varieties with 10 to 55 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** | | | | | | | | |
| Prakasam (Kandukur) | TBG 104 | 3 | 8.75 | 21 | 1:2.04 | Local variety | 7.25 | 1:1.63 |
| Prakasam (Kandukur) | VBN 8 | 3 | 8.12 | 12 | 1:1.89 | Local variety | 7.25 | 1:1.63 |
| **Puducherry** | | | | | | | | |

| State and KVK | Treatment | | | | | Farmers practice | | |
|---|---|---|---|---|---|---|---|---|
| | Variety | No. of Trials | Yield (q/ha) | % increase over FP | BCR | Variety | Yield (q/ha) | BCR |
| Karaikal | VBN 4 | 5 | 7.76 | 64 | 1:3.26 | Local variety | 4.73 | 1:2.50 |
| Karaikal | WGG 42 | 5 | 6.61 | 40 | 1:2.78 | Local variety | 4.73 | 1:2.50 |
| **Tamil Nadu** | | | | | | | | |
| Perambalur | GBG 1 | 5 | 7.10 | 21 | 1:2.11 | VBN 6 | 5.88 | 1:1.81 |
| Ariyalur | LBG 884 | 5 | 10.20 | 42 | 1:3.06 | VBN 8 | 7.20 | 1:2.52 |
| Perambalur | VBN 11 | 5 | 7.80 | 33 | 1:2.25 | VBN 6 | 5.88 | 1:1.81 |
| Ariyalur | VBN 11 | 5 | 8.90 | 24 | 1:3.07 | VBN 8 | 7.20 | 1:2.52 |
| **Chickpea** | | | | | | | | |
| **Andhra Pradesh** | | | | | | | | |
| Ananthapuram (Kalyandurg) | NBeG 452 | 5 | 14.40 | 13 | 1:2.65 | JG 11 | 12.80 | 1:2.44 |
| Nellore (Nellore) | NBeG 452 | 3 | 20.00 | 14 | 1:2.04 | Local variety | 17.50 | 1:1.60 |
| Prakasam (Darsi) | NBeG 452 | 5 | 18.50 | 35 | 1:1.65 | JG 11 | 13.75 | 1:1.53 |
| Prakasam (Kandukur) | NBeG 452 | 3 | 17.50 | 28 | 1:1.89 | Local variety | 13.70 | 1:1.49 |
| Nellore (Nellore) | NBeG 49 | 3 | 19.50 | 11 | 1:1.93 | Local variety | 17.50 | 1:1.60 |
| Prakasam (Darsi) | NBeG 49 | 5 | 19.75 | 44 | 1:1.67 | JG 11 | 13.75 | 1:1.53 |
| Ananthapuram (Kalyandurg) | NBeG 776 | 5 | 14.52 | 13 | 1:2.67 | JG 11 | 12.80 | 1:2.44 |
| Prakasam (Kandukur) | NBeG 776 | 3 | 17.20 | 26 | 1:1.85 | Local variety | 13.70 | 1:1.49 |
| **Greengram** | | | | | | | | |
| **Tamil Nadu** | | | | | | | | |
| Virudhunagar | CO 9 | 5 | 8.30 | 11 | 1:2.55 | CO 8 | 7.50 | 1:2.04 |
| Tiruppur | CO 9 | 5 | 6.90 | 23 | 1:2.34 | VBN 2 | 5.60 | 1:2.10 |
| Perambalur | GAM1 | 5 | 7.28 | 16 | 1:1.88 | VBN 1 | 6.30 | 1:1.66 |
| Dindigul | VBN 4 | 5 | 6.30 | 29 | 1:1.52 | Local variety | 4.90 | 1:1.12 |
| Dindigul | VBN 5 | 5 | 7.10 | 45 | 1:1.8 | Local variety | 4.90 | 1:1.17 |
| Perambalur | VBN 5 | 5 | 8.23 | 31 | 1:2.04 | VBN 1 | 6.30 | 1:1.66 |
| Namakkal | VBN 5 | 5 | 9.50 | 10 | 1:2.1 | CO 8 | 8.65 | 1:1.92 |
| Tiruppur | VBN6 | 5 | 7.10 | 27 | 1:2.41 | VBN 2 | 5.60 | 1:2.10 |
| Dindigul | WGG 42 | 5 | 7.20 | 47 | 1:1.75 | Local variety | 4.90 | 1:1.12 |
| Dindigul | WGG 42 | 5 | 7.60 | 55 | 1:1.89 | Local variety | 4.90 | 1:1.17 |
| **Horse gram** | | | | | | | | |
| **Tamil Nadu** | | | | | | | | |
| Dharmapuri | ATPHG 11 | 5 | 9.25 | 23 | 1:2.89 | Local variety | 7.55 | 1:2.27 |
| Dharmapuri | CRIDA 22 R | 5 | 8.82 | 17 | 1:2.56 | Local variety | 7.55 | 1:2.27 |
| Tirunelveli | RMO 2251 | 10 | 5.60 | 17 | 1:2.36 | Local variety | 4.80 | 1:1.89 |
| **Redgram** | | | | | | | | |
| **Andhra Pradesh** | | | | | | | | |
| Kadapa (Utukur) | LRG 105 | 3 | 11.50 | 31 | 1:2.63 | LRG 2 | 8.80 | 1:2.02 |
| Prakasam (Kandukur) | LRG 105 | 3 | 7.20 | 37 | 1:1.74 | Local variety | 5.25 | 1:1.47 |
| Kadapa (Utukur) | TRG 59 | 3 | 10.20 | 16 | 1:2.34 | LRG 2 | 8.80 | 1:2.02 |
| Prakasam (Kandukur) | TRG 59 | 3 | 7.50 | 43 | 01:02.0 | Local variety | 5.25 | 1:1.47 |
| **Tamil Nadu** | | | | | | | | |
| Thiruvannamalai | CO 8 | 5 | 11.42 | 12 | 1:1.97 | Local variety | 10.20 | 1:1.71 |
| Krishnagiri | CO 8 | 5 | 13.47 | 30 | 1:2.24 | LRG 41 | 10.35 | 1:1.61 |
| Krishnagiri | WRGE 93 | 5 | 12.46 | 20 | 1:1.94 | LRG 41 | 10.35 | 1:1.61 |
| Thiruvannamalai | WRGE 93 | 5 | 13.56 | 33 | 1:2.35 | Local variety | 10.20 | 1:1.71 |
| **Telangana** | | | | | | | | |
| Adilabad | TDRG 59 | 3 | 17.19 | 23 | 1:1.85 | Local variety | 14.00 | 1:1.80 |
| Medak (DSS) | TDRG 59 | 5 | 11.20 | 16 | 1:2.52 | Local variety | 9.68 | 1:2.36 |
| Nalgonda (Gaddipally) | WRG 255 | 4 | 14.30 | 17 | 1:2.83 | LRG 41 | 12.18 | 1:2.32 |

### d. Oilseeds

Groundnut variety K 1812, TCGS 1694, VRI 8, 9, 10 performed better than local varieties with 12 to 67 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 |
| **Groundnut** | | | | | | | | |
| **Andhra Pradesh** | | | | | | | | |
| Nellore (Nellore) | K 1812 | 3 | 36.61 | 31 | 1:1.43 | TAG 24 | 27.96 | 1:1.40 |
| Ananthapuram (Kalyandurg) | K 1812 | 5 | 5.06 | 41 | 1:1.13 | K 6 | 3.60 | 1:1.28 |
| Nellore (Nellore) | TCGS 1694 | 3 | 31.68 | 13 | 1:1.50 | TAG 24 | 27.96 | 1:1.40 |
| Ananthapuram (Kalyandurg) | Visista | 5 | 4.26 | 18 | 1:1.21 | K 6 | 3.60 | 1:1.28 |
| **Tamil Nadu** | | | | | | | | |
| Erode | GPBD 4 | 3 | 26.06 | 19 | 1:2.34 | VRI 2 | 21.82 | 1:1.60 |
| Dindigul | K 1812 | 5 | 19.50 | 29 | 1:2.09 | VRI 2 | 15.10 | 1:1.53 |
| Erode | K 1812 | 3 | 26.41 | 21 | 1:2.27 | VRI 2 | 21.82 | 1:1.60 |
| Dindigul | K1812 | 5 | 18.60 | 30 | 1:1.95 | VRI 2 | 14.30 | 1:1.43 |
| Thiruvannamalai | K 1812 | 5 | 20.24 | 51 | 1:2.37 | Local variety | 13.42 | 1:1.89 |
| Karur | TCGS 1694 | 3 | 24.98 | 66 | 1:3.68 | TMV 7 | 15.04 | 1:2.29 |
| Tirunelveli | TCGS 1694 | 10 | 16.20 | 12 | 1:1.72 | Local variety | 14.50 | 1:1.56 |
| Dindigul | VRI 10 | 5 | 19.10 | 34 | 1:2.03 | VRI 2 | 14.30 | 1:1.43 |
| Karur | VRI 10 | 3 | 20.98 | 39 | 1:3.01 | TMV 7 | 15.04 | 1:2.29 |
| Tirunelveli | VRI 10 | 10 | 18.50 | 28 | 1:2.03 | Local variety | 14.50 | 1:1.56 |
| Dindigul | VRI 8 | 5 | 18.60 | 23 | 1:1.96 | VRI 2 | 15.10 | 1:1.53 |
| Thiruvannamalai | VRI 9 | 5 | 22.39 | 67 | 1:2.91 | Local variety | 13.42 | 1:1.89 |
| **Telangana** | | | | | | | | |
| Adilabad | K1812 | 3 | 23.45 | 14 | 1:1.63 | TAG 24 | 20.60 | 1:1.61 |
| Mahabubnagar (Palem) | K1812 | 4 | 34.92 | 51 | 1:3.14 | K 6 | 23.08 | 1:2.67 |
| Kammam (Wyra) | K1812 | 3 | 31.61 | 22 | 1:2.33 | K 6 | 25.83 | 1:1.84 |
| Warangal (Mamnoor) | K1812 | 4 | 20.00 | 54 | 1:1.80 | K 6 | 13.00 | 1:1.17 |
| Medak (Tuniki) | K1812 | 3 | 23.75 | 19 | 1:1.90 | K 6 | 20.00 | 1:1.55 |
| Nizamabad | K1812 | 3 | 21.83 | 10 | 1:1.55 | TAG 24 | 19.92 | 1:1.63 |
| Nalgonda (Gaddipally) | TCGS 1694 | 4 | 26.50 | 13 | 1:2.57 | K 6 | 23.50 | 1:2.33 |

## II. Horticultural Crops

### a. Vegetables

Amaranthus varieties Arka Samraksha, PLR 1, Arka Arunima gave 20 to 40 per cent higher yield and economic returns than the local varieties. Bhendi varieties Arka Nikhita and CO Bh 4 gave 10 to 57 per cent higher yield and economic returns. Chilli varieties LCA 657, LCA 684, Arka Gagan, CO Ch 1 gave 12 to 32 per cent higher yield than farmers varieties. Ridge gourd varieties Arka Prasan, Arka Vikram, MDU 1 and COH 1 performed better than farmers varieties and private hybrids with 10to 71 per cent higher yield and economic returns. Tomato varieties Arka Samrat, Arka Abhed, Arka Vikas and CO TH 4 were assessed and found to yield 11 to 31 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** | | | | | | | | |
| **Puducherry** | | | | | | | | |
| Karaikal | Arka Samraksha | 5 | 69.70 | 24 | 1:2.00 | Local variety | 56.40 | 1:2.00 |
| Puducherry | Arka Samraksha | 5 | 70.02 | 25 | 1:1.99 | Local variety | 56.00 | 1:1.99 |
| Puducherry | PLR 1 | 5 | 72.76 | 30 | 1:2.00 | Local variety | 56.00 | 1:1.99 |
| Karaikal | PLR 1 | 5 | 72.60 | 29 | 1:2.00 | Local variety | 56.40 | 1:2.00 |
| **Tamil Nadu** | | | | | | | | |
| Coimbatore | Arka Arunima | 5 | 69.71 | 28 | 1:2.22 | Local variety | 54.32 | 1:1.53 |
| Tirunelveli | Arka Arunima | 5 | 200 | 46 | 1:3.82 | Local variety | 137 | 1:2.34 |
| Tirunelveli | KAU Vaika | 5 | 165 | 20 | 1:3.03 | Local variety | 137 | 1:2.34 |
| Coimbatore | VAIKA | 5 | 73.51 | 35 | 1:2.37 | Local variety | 54.32 | 1:1.53 |
| **Bhendi/Okra** | | | | | | | | |
| **Andhra Pradesh** | | | | | | | | |
| Krishna (Ghantasala) | Arka Nikhita | 5 | 233 | 16 | 1:2.31 | Radhika | 201 | 1:1.86 |
| Kurnool (Banavasi) | Arka Nikitha | 3 | 162 | 10 | 1:3.83 | Local variety | 147.5 | 1:3.35 |
| Krishna (Ghantasala) | Kashi Chaman | 3 | 145 | 16 | 1:2.43 | Local variety | 125.6 | 1:2.04 |
| Krishna (Ghantasala) | Punjab Suhavani | 3 | 139 | 10 | 1:2.30 | Local variety | 125.6 | 1:2.04 |
| **Tamil Nadu** | | | | | | | | |
| Tiruchirappalli | Arka Nikita | 5 | 161 | 37 | 1:1.60 | Local variety | 117.7 | 1:1.42 |
| Thiruvallur | Arka Nikita | 5 | 18.20 | 35 | 1:3.64 | Nadhiya | 13.50 | 1:2.33 |
| Kanyakumari | CO Bh 4 | 5 | 260 | 26 | 1:2.60 | Local variety | 206 | 1:2.06 |
| Thiruvallur | CO Bh 4 | 5 | 17.50 | 30 | 1:3.42 | Nadhiya | 13.50 | 1:2.33 |
| Tiruchirappalli | CO Bh 4 | 5 | 184.5 | 57 | 1:1.65 | Local variety | 117.7 | 1:1.42 |
| Vellore | CO Bh 4 | 5 | 269 | 13 | 1:3.60 | Local variety | 238 | 1:2.94 |
| Kanyakumari | Kashi Chaman | 5 | 235 | 14 | 1:2.35 | Local variety | 206 | 1:2.06 |
| **Telangana** | | | | | | | | |
| Karimnagar (Jammikunta) | Kashi Lalima | 12 | 112 | 20 | 1:3.23 | Private hybrid | 93 | 1:2.57 |
| **Bottle gourd** | | | | | | | | |
| **Puducherry** | | | | | | | | |
| Karaikal | Arka Ganga | 5 | 389 | 23 | 1:2.55 | Local variety | 317 | 1:2.26 |
| Karaikal | CO 1 | 5 | 427 | 34 | 1:2.73 | Local variety | 317 | 1:2.26 |
| **Tamil Nadu** | | | | | | | | |
| Thiruvarur | Arka Nutan | 5 | 397 | 46 | 1:2.83 | Local variety | 272 | 1:1.94 |
| Thiruvarur | PLR 1 | 5 | 305 | 12 | 1:2.18 | Local variety | 272 | 1:1.94 |
| **Brinjal** | | | | | | | | |
| **Tamil Nadu** | | | | | | | | |
| Thiruvallur | Arka Unathi | 5 | 44.08 | 14 | 1:2.54 | Ujala | 38.62 | 1:2.12 |
| Thoothukudi | MDU 2 | 2 | 242 | 11 | 1:3.37 | Local variety | 218 | 1:2.91 |
| Thiruvallur | VRM (Br) 2 | 5 | 69.70 | 80 | 1:3.16 | Ujala | 38.62 | 1:2.12 |
| **Chillie (Green)** | | | | | | | | |
| **Andhra Pradesh** | | | | | | | | |
| Kadapa (Utukur) | Arka Gagan | 5 | 45.00 | 18 | 1:1.60 | Private hybrid | 38.00 | 1:1.35 |
| East Godavari (Pandirimamidi) | LCA 657 | 4 | 32.00 | 24 | 1:2.37 | Local variety | 25.75 | 1:1.66 |
| Nellore (Periyavaram) | LCA 657 | 6 | 64.70 | 19 | 1:1.50 | Local variety | 54.50 | 1:1.38 |

| State and KVK | Treatment | | | | | Farmers practice | | |
|---|---|---|---|---|---|---|---|---|
| | Variety | No. of Trials | Yield (q/ha) | % increase over FP | BCR | Variety | Yield (q/ha) | BCR |
| East Godavari (Pandirimamidi) | LCA 684 | 4 | 30.03 | 17 | 1:2.14 | Local variety | 25.75 | 1:1.66 |
| Nellore (Periyavaram) | LCA 684 | 6 | 61.05 | 12 | 1:1.47 | Local variety | 54.50 | 1:1.38 |
| **Tamil Nadu** | | | | | | | | |
| Tiruchirappalli | Arka Gagan | 5 | 152 | 29 | 1:1.57 | Local variety | 118 | 1:1.47 |
| Dindigul | CO Ch 1 | 5 | 256 | 26 | 1:3.76 | Private hybrid | 203 | 1:2.59 |
| Tiruchirappalli | CO Ch 1 | 5 | 156 | 32 | 1:1.58 | Private hybrid | 118 | 1:1.47 |
| **Coriander (leaf)** | | | | | | | | |
| **Tamil Nadu** | | | | | | | | |
| Thiruvallur | ACr 1 | 15 | 4.96 | 25 | 1:2.99 | Local variety | 3.96 | 1:2.15 |
| Madurai | Arka Isha | 5 | 44.50 | 28 | 1:1.72 | Local variety | 34.80 | 1:1.92 |
| Thoothukudi | CO (Cr) 5 | 2 | 34.50 | 14 | 1:3.30 | Local variety | 30.20 | 1:2.91 |
| Madurai | CO 5 | 5 | 47.20 | 36 | 1:1.68 | Local variety | 34.80 | 1:1.92 |
| Thiruvallur | CO 5 | 15 | 5.25 | 33 | 1:3.25 | Local variety | 3.96 | 1:2.15 |
| Thoothukudi | Suguna | 2 | 35.60 | 18 | 1:3.37 | Local variety | 30.20 | 1:2.91 |
| **Onion (Bellary)** | | | | | | | | |
| **Andhra Pradesh** | | | | | | | | |
| Kurnool (Banavasi) | Arka Bheem | 3 | 356 | 34 | 1:2.28 | Local variety | 265 | 1:1.54 |
| Kurnool (Banavasi) | Arka Kalyan | 3 | 343 | 29 | 1:2.03 | Local variety | 265 | 1:1.54 |
| Kadapa (Vonipenta) | NHRDF Fursungi | 6 | 300 | 36 | 1:1.52 | Local variety | 220 | 1:1.30 |
| Kadapa (Vonipenta) | NHRDF RED | 6 | 250 | 14 | 1:1.44 | Local variety | 220 | 1:1.30 |
| Kampasagar | Bhima Super | 3 | 225 | 13 | 1:2.53 | Private hybrid | 199 | 1:2.17 |
| Medak (DSS) | Bhima Super | 5 | 120 | 20 | 1:4.17 | Local variety | 100 | 1:3.06 |
| **Ridge gourd** | | | | | | | | |
| **Andhra Pradesh** | | | | | | | | |
| Kurnool (Banavasi) | Arka Prasan | 3 | 268 | 21 | 1:1.44 | Local variety | 222 | 1:1.33 |
| Kurnool (Banavasi) | Arka Vikram | 3 | 282 | 27 | 1:1.56 | Local variety | 222 | 1:1.33 |
| Nellore (Periyavaram) | Arka Vikram | 6 | 28.40 | 26 | 1:1.65 | Local variety | 22.50 | 1:1.54 |
| **Tamil Nadu** | | | | | | | | |
| Salem | Arka Prasan | 5 | 170 | 13 | 1:2.72 | Local variety | 150 | 1:2.18 |
| Dharmapuri | Arka Vikram | 5 | 290 | 71 | 1:4.43 | Local variety | 170 | 1:3.67 |
| Tiruchirappalli | Arka Vikram | 5 | 294 | 60 | 1:1.81 | Local variety | 184 | 1:1.60 |
| Villupuram II | Arka Vikram | 5 | 200 | 51 | 1:2.28 | Private hybrids | 133 | 1:1.45 |
| Tiruchirappalli | COH 1 | 5 | 258 | 40 | 1:1.76 | Local variety | 184 | 1:1.60 |
| Dharmapuri | MDU 1 | 5 | 200 | 18 | 1:3.92 | Local variety | 170 | 1:3.67 |
| Salem | MDU 1 | 5 | 175 | 17 | 1:3.18 | Local variety | 150 | 1:2.18 |
| Villupuram II | MDU.1 | 5 | 170 | 28 | 1:1.92 | Private hybrid | 133 | 1:1.45 |
| **Telangana** | | | | | | | | |
| Kammam (Kothagudam) | Arka Prasan | 3 | 185 | 26 | 1:2.19 | Private hybrid | 147 | 1:1.97 |
| Karimnagar (Jammikunta) | Arka Prasan | 12 | 190 | 10 | 1:1.38 | Private hybrid | 172 | 1:4.37 |
| Warangal (Malyal) | Arka Prasan | 3 | 260 | 10 | 1:2.60 | Private hybrid | 236 | 1:1.97 |
| **Tomato** | | | | | | | | |
| **Andhra Pradesh** | | | | | | | | |
| Chittoor (RASS) | Arka Abhed | 10 | 630 | 19 | 1:4.03 | Local variety | 530 | 1:3.25 |
| Chittoor (RASS) | Arka Samrat | 10 | 595 | 12 | 1:3.71 | Local variety | 530 | 1:3.25 |
| **Tamil Nadu** | | | | | | | | |
| Salem | Arka Abhed | 5 | 680 | 31 | 1:3.40 | Private hybrid | 520 | 1:1.96 |
| Krishnagiri | Arka Abhed | 5 | 766.12 | 20 | 1:1.53 | Private hybrid | 640 | 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 |
| Thoothukudi | Arka Abhed | 2 | 496 | 15 | 1:3.58 | Local variety | 430 | 1:3.10 |
| Salem | Arka Samrat | 5 | 610 | 17 | 1:2.49 | Private hybrid | 520 | 1:1.96 |
| Coimbatore | Arka Vikas | 5 | 648 | 11 | 1:4.11 | Local variety | 582 | 1:3.62 |
| Thoothukudi | CO (TH) 4 | 2 | 501 | 17 | 1:3.69 | Local variety | 430 | 1:3.10 |
| Coimbatore | CO (TH) 4 | 5 | 658 | 13 | 1:4.42 | Local variety | 582 | 1:3.62 |

**b. Flowers fruits, spices and condiments**

China aster varieties Arka Aadhya, Arka Purnima, Marigold varieties Arka Amar, Arka Abhi, Arka Bhanu and Arka Vibha were assessed and were found to yield 15 to 35 per cent higher than local varieties and private hybrids. Banana varieties CO 3 and Kaveri Kalki gave 11 to 46 per cent higher yield than local varieties. Red chilli varieties Arka Swetha, LCA 643, LCA 657, LCA 684, CO CH 1 and Arka Tejashwi yielded 21 to 40 per cent higher than local varieties and hybrids. Garlic varieties Ooty 1 and 2m Mahima and Varada gave 15 to 48 per cent higher yield than local varieties. Tapioca varieties PDP CMR 1 and Sree Raksha gave 23 to 25 per cent higher yield than the local 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** | | | | | | | | |
| **China aster** | | | | | | | | |
| **Andhra Pradesh** | | | | | | | | |
| Vizianagaram | Arka Aadhya | 5 | 4.52 | 26 | 1:2.58 | Local variety | 3.58 | 1:2.05 |
| Vizianagaram | Arka Purnima | 5 | 4.84 | 35 | 1:2.77 | Local variety | 3.58 | 1:2.05 |
| **Marigold** | | | | | | | | |
| **Andhra Pradesh** | | | | | | | | |
| Visakhapatnam (Kondempudi) | Arka Amar | 5 | 176 | 15 | 1:1.22 | Arka Pradham | 154 | 1:1.11 |
| Srikakulam | Arka Abhi | 5 | 85.60 | 20 | 1:3.01 | Local variety | 71.20 | 1:2.50 |
| Srikakulam | Arka Bhanu | 5 | 82.50 | 16 | 1:2.90 | Local variety | 71.20 | 1:2.50 |
| **Puducherry** | | | | | | | | |
| Karaikal | Arka Abhi | 5 | 165 | 21 | 1:3.88 | Private hybrid | 136 | 1:3.29 |
| Karaikal | Arka Vibha | 5 | 159 | 16 | 1:3.77 | Private hybrid | 136 | 1:3.29 |
| **Tamil Nadu** | | | | | | | | |
| Nagapattinam | Arka Abhi | 5 | 154 | 15 | 1:3.90 | Private hybrid | 134 | 1:3.29 |
| **Fruits** | | | | | | | | |
| **Banana** | | | | | | | | |
| **Tamil Nadu** | | | | | | | | |
| Salem | CO 3 | 5 | 650 | 35 | 1:3.12 | Karpuravalli | 480 | 1:2.09 |
| Salem | CO 3 | 5 | 700 | 46 | 1:3.50 | Karpuravalli | 480 | 1:2.09 |
| Tiruchirappalli | CO 3 | 5 | 544 | 11 | 1:2.15 | Karpuravalli | 490 | 1:1.83 |
| Ariyalur | Kaveri Kalki | 5 | 404 | 18 | 1:3.66 | Poovan | 343 | 1:3.25 |
| Tiruchirappalli | Kaveri Kalki | 5 | 562 | 15 | 1:2.72 | Karpooravalli | 490 | 1:1.83 |
| **Spices and Condiments** | | | | | | | | |
| **Chilli (red)** | | | | | | | | |
| **Andhra Pradesh** | | | | | | | | |
| Prakasam (Kandukur) | Arka Swetha | 3 | 41.70 | 35 | 1:2.19 | Local variety | 30.80 | 1:1.88 |
| Ananthapuram (Kalyandurg) | LCA 643 | 5 | 11.02 | 22 | 1:3.00 | HPH 2043 | 9.04 | 1:2.07 |

| State and KVK | Treatment | | | | | Farmers practice | | |
|---|---|---|---|---|---|---|---|---|
| | Variety | No. of Trials | Yield (q/ha) | % increase over FP | BCR | Variety | Yield (q/ha) | BCR |
| Vizianagaram | LCA 657 | 5 | 14.00 | 40 | 1:2.90 | Local variety | 10.00 | 1:1.90 |
| Vizianagaram | LCA 684 | 5 | 13.00 | 30 | 1:2.69 | Local variety | 10.00 | 1:1.90 |
| **Tamil Nadu** | | | | | | | | |
| Thiruvannamalai | CO (CH) 1 | 5 | 244 | 21 | 1:2.84 | Private hybrid | 201 | 1:2.32 |
| **Telangana** | | | | | | | | |
| Warangal (Malyal) | Arka Tejashwi | 3 | 22.25 | 22 | 1:1.27 | Private hybrid | 18.25 | 1:1.07 |
| **Garlic** | | | | | | | | |
| **Tamil Nadu** | | | | | | | | |
| Nilgiris | Ooty 1 | 5 | 138 | 15 | 1:1.99 | Local variety | 120 | 1:2.02 |
| Nilgiris | Ooty 2 | 5 | 151 | 26 | 1:1.79 | Local variety | 120 | 1:2.02 |
| Srikakulam | Mahima | 5 | 153 | 48 | 1:3.39 | Local variety | 103 | 1:2.47 |
| Srikakulam | Varada | 5 | 148 | 44 | 1:3.29 | Local variety | 103 | 1:2.47 |
| **Tubers** | | | | | | | | |
| **Tapioca** | | | | | | | | |
| **Andhra Pradesh** | | | | | | | | |
| East Godavari (Pandirimamidi) | PDP CMR-1 | 5 | 285 | 23 | 1:3.73 | Local variety | 231 | 1:2.96 |
| East Godavari (Pandirimamidi) | Sree Raksha | 5 | 287 | 25 | 1:3.77 | Local variety | 231 | 1:2.96 |

### 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, nano fertilizer formulations. A total of 156 technologies on INM including 111 on agricultural crops and 45 on horticultural crops were assessed by 43 KVKs in the Zone. In agricultural crops, 75 INM technologies were assessed for paddy by 26 KVKs wherein average yield was 51.25 q/ha as against 47.94 q/ha in farmer's practice (6.46% higher). INM for groundnut gave an average yield of 26.16 q/ha which was 16.0 per cent higher than farmers practice. The average yield in the INM plots of tomato was 417.70 q/ha while in farmer's practice, it was 374.35 q/ha.

**b. Integrated Crop Management**

Integrated Crop Management technologies in paddy gave an average grain yield of 51.83 q/ha while in farmer's practice, it was 48.46 q/ha. ICM practices in cotton gave 26.63 per cent higher yield than farmer's practice. ICM technologies gave 18.84 per cent higher yields in vegetables 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 19.52 per cent with higher economic returns. IPM for maize gave an average yield of 55.62 q/ha as against 45.89 q/ha in farmer's practice. In paddy, integrated pest management practices gave an average grain yield of 49.89 q/ha which was 11.25 per cent higher than farmer's practice. IPM technologies assessed on cotton gave an average yield of 26.26 q/ha as against 23.78 q/ha in farmer's practice. IPM technologies in fruits increased the yield at an average of 18.4 per cent over farmer's practice. The average yields of brinjal and green chillies were 247.84 and 88.47 q/ha, respectively while in farmer's practice, the average yields were 214.98 and 78.26 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 19 per cent over farmer's practice. In paddy, IDM technologies gave an average grain yield of 58.27 q/ha while in farmer's practice, it was 55.67 q/ha. IDM package in cotton increased the yield by 22 per cent over farmer's practice.

### 3.1.4. Livestock, Poultry and Fishery

KVKs in the zone assessed disease management technologies like SFMT reagent, Allogen -N herbal, TNAUCHEK SCC kit, Herbal anti tick acaricide, Polyherbal extract, Nano Heal, Mastirak Gel, Megatex, TANUVAS-Methicone, TANUVAS Bio teat dip, Wormivet powder, BoviMastri Cup, Tixkiller, Poly herbal encapsulated in nanoform, WVM, Herbolact, Butox, Healex FT, Nanomethicone, Methicon, Helmokill, CIFRI-ARGCURE, Nano Methicone lotion, NIF Polyherbal Formulation; Feed and fodder management technologies like Probiotic+ NaHCO3, COFS 29, 31 and 33 fodder sorghum, multi species fodder crops, Hedge lucerne, Sweet potato vine, Probiotic yeast, Probeads, Mineral mixture, Calf starter, de-oiled rice bran fish feed, CIFA Carp Grower Feed, TNJFU Feed, Vitamin-C, Silkworm pupae, ICAR - NIANP Milk replacer, TANUVAS AFLD salt lick, AFTD based mineralized salt lick, TANUVAS mineral mixture for sheep and goats, Totavit bolus, area specific mineral mixture, ICAR- CSWRI milk replacer, Bypass fat, Goatmin mineral mixture, NIANP mineral mixture for goats, Nandi Sheep min; Production management technologies like GnRH hormone, Prostaglandins hormone; Poultry breeds like Vanashree, Ghagus, naked neck broiler, TANUVAS Star Chicken, Janapriya, Rajasri, TANUVAS Aseel, Kadaknath, Namakkal Gola Quail, Nandanam 3; Fish breeds like murrel fish, catla, jayanti rohu, mrigal, amur common carp, CIFA-GI Scampi, IMC, non GI Scampi, Striped catfish, Bio-floc, Tilapia, pangasius; Fish production and management technologies like captive nursery rearing, water probiotics *etc*.

### 3.1.5 Women Empowerment and enterprises

Enterprises on value added products, millet health mix with banana formulation, finger millet waffle, sorghum pongal mix, sorghum idli mix , antioxidant rich millet bars, protein fortified (mushroom and finger millet) cookies, groundnut chikki enriched with millets and moringa leaf powder, whey guava fruit juice beverage, millet milk, multi millet atta, foxtail millet flour, groundnut payasam, chutney powder, roasted masala groundnuts, finger millet idly, sorghum roti, finger millet dosa mix, foxtail millet idly, rice bran cookies, brown rice cookies, mahuva powder based products, solar dryer, electric dryer etc. were assessed. Safety kits and drudgery reducing tools like protective clothing kit, long handled weeder, cotton harvesting bags, PPE kit were assessed as potential enterprises as well as healthy and nutritious food for children and adults.

### 3.1.6. Enterprises

A total of 104 assessments were made on enterprises like millet milk, cabinet dryer, electric dryer, mini solar tunnel drier, mushroom fortified millet cookies, pulses fortified cookies, tiny dried shrimp + tamarind leaves powder, tiny dried shrimp + curry leaves powder , antioxidant rich millet bars, shade dried *Hibsicus* beverage, multi millet atta, millet nutribars *Clitorea ternatea* herbal drink, coconut sugar, sweet flag, seaweed green algae, sorghum rava mix, finger millet papad, fish cutlet, silkworm rearing, millet weaning mix, defatted groundnut cake products etc. were assessed.

### 3.1.7. Farm Machinery

Farm machinery and tools like shredder cum mulcher, seed cum fertilizer drill, direct seeding and drum seeder, two row rice transplanter, trellising and mulching, groundnut digger cum shaker, pneumatic planter, ablation tool, SBI sett treatment device etc., were assessed for their performance in farmers' field.

**Assessement of IPDM in chillies - Thiruvannamalai , Tamil Nadu**


**Assessing the performance of okra varieties - KVK, Kurnool (Y), Andhra Pradesh**

**Assessment of Paddy variety ADT54 , KVK-Thiruvannamalai, Tamil Nadu**

**Assessment of New high yielding Foxtail millet variety SIA-3222 - KVK, Medak (DDS)**


**Assessment of Seed cum Ferti drill in Groundnut - KVK, Nalgonda (G), Telangana**


**Banana field day - KVK - Karur, Tamil Nadu**

**Management of tomato pin worm - KVK, Erode, Tamil Nadu**

**OFT on paddy varieties in tribal areas - KVK- Visakhapatnam (BCT), Andhra Pradesh**

**Performance of area specific mineral mixture in Small Ruminants- KVK, Villuppuram, Tamil Nadu**


**Ragi line sowing with Hand Push seed drill- KVK, Visakhapatnam (BCT), A.P**


**Skill training on pruning in cashew nut - KVK, Visakhapatnam (BCT), Andhra Pradesh**


**Sucking pest management in Jowar - Nizamabad , Telangana**

## 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 11950 demonstrations were conducted in 2932.18 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, 6112 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 2304.10 ha. Among the crops, 3339 demonstrations were conducted on field crops and 2773 on horticultural crops. A total of 965 demonstrations were conducted on hybrids, 717 on tools and implements, 2597 on livestock, 1184 on various enterprises and 373 on women and children related demonstrations. Among agricultural crops, 1153 demonstrations were conducted on rice varieties and other production and protection technologies (Table 3.2.2). In millets out of 591 demonstrations, 189 were on finger millet, 135 on sorghum and 90 on foxtail millet, 67 on pearl millet. In pulses (other than CFLD), out of 685 demonstrations, 292 were in blackgram, 136 in redgram 95 in chickpea and 85 in greengram. Out of 478 demonstrations in oilseeds (other than CFLD), 373 were in groundnut and 75 in sesamum. Among the commercial crops, 105 were in sugarcane and 36 in mulberry. Among fibre crops, 92 demonstrations were in cotton. Among 73 demonstrations on fodder crops, 45 were on fodder sorghum. Among 1099 demonstrations in vegetables, 170 were on green chilli, 157 on nutri-farm, 141 on brinjal, 137 on ridge gourd and 80 on tomato. Out of 140 demonstrations on tuber crops, 75 were on tapioca. Out of 715 demonstrations in fruits, 259 were in mango, 140 in banana, and 91 in guava. In total, 195 demonstrations were conducted on flowers including jasmine, chrysanthemum, marigold, and tuberose. Among 368 demonstrations on spices and condiments, 97 were on dry chillies, 85 on raw turmeric and 58 on ginger. Among plantation crops, 146 demonstrations were on coconut, 20 on cashew and 20 on oil palm.

### a. Crops

In crops category, out of 3241 demonstrations in Tamil Nadu, 856 were in cereals and 592 in vegetables (Table 3.2.2). In Andhra Pradesh, out of 1940 demonstrations on crops, 210 were in cereals, 295 in vegetables, 399 in fruits, 279 in pulses


**Demonstration of Paddy ADT 54 - Cuddalore , Tamil Nadu**

**Demonstration of IPM Module for Maize fall armyworm - Theni, Tamil Nadu**

and 181 in millets. Out of 761 demonstrations in Telangana, 197 in vegetables, 138 in Cereals and 123 in oilseeds. In Puducherry, out of 170 demonstrations on crops, 20 were in cereals, 30 in pulses and 70 in other horticultural crops.

**b. Hybrids**

A total of 965 demonstrations were conducted on crop hybrids, out of which 501 were by KVKs of Tamil Nadu, 261 by Andhra Pradesh, 168 by Telangana and 35 by Puducherry (Table 3.2.3). Among the crops, 230 demonstrations were in maize, 186 in cotton, 60 in fodder crops, 47 in pearl millet, 50 in castor, 24 in marigold, 60 in chilli and 189 in tomato.

**c. Tools and Implements**

Out of 719 demonstrations conducted on tools and implements, 241 were by KVKs of Tamil Nadu, 272 by Andhra Pradesh, 190 by Telangana and 16 by Puducherry (Table 3.2.4).

**d. Livestock, poultry and fishery**

KVKs in the Zone conducted 2597 demonstrations on livestock, poultry and fishery involving 713679 animals, poultry birds and fish fingerlings (Table 3.2.5). Among them, 959 demonstrations were conducted by KVKs in Tamil Nadu, 979 by Andhra Pradesh, 606 by Telangana and 53 by Puducherry.

**e. Enterprises**

A total of 1184 demonstrations were conducted on bio-inputs production, compost production, food preservation, inputs production, mushroom production, poultry production, sericulture, value addition, vegetable production and 1626 enterprise units were established by 42 KVKs in the Zone (Table 3.2.6).

**f. Women empowerment**

A total of 373 demonstrations on entrepreneurship development, health and nutrition, compost production, drudgery reduction, and others were conducted, and 1095 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 | 1953 | 766.40 | 31 | 878 | 359.20 | 22 | 408 | 193.00 | 15 | 100 | 33.00 | 2 | 3339 | 1351.60 | 70 |
| Horticultural Crops | 1288 | 398.51 | 29 | 1062 | 404.02 | 22 | 353 | 139.90 | 15 | 70 | 10.08 | 2 | 2773 | 952.50 | 68 |
| **Total (Crops)** | **3241** | **1164.91** | **31** | **1940** | **763.22** | **23** | **761** | **332.90** | **15** | **170** | **43.08** | **2** | **6112** | **2304.10** | **71** |
| **Hybrids** | 296 | 79.00 | 32 | 136 | 51.00 | 12 | 45 | 12.70 | 8 | 35 | 9.00 | 4 | 512 | 151.70 | 56 |
| Field Crops | 347 | 127.50 | 21 | 110 | 47.10 | 8 | 113 | 71.80 | 12 | 20 | 6.00 | 1 | 590 | 252.40 | 42 |
| Horticultural Crops | 154 | 41.50 | 12 | 151 | 55.00 | 8 | 55 | 14.20 | 6 | 15 | 3.00 | 2 | 375 | 113.70 | 28 |
| **Total (Hybrids)** | **501** | **169.00** | **24** | **261** | **102.10** | **12** | **168** | **86.00** | **12** | **35** | **9.00** | **2** | **965** | **366.10** | **50** |
| **Crops + Hybrids** | **3742** | **1333.91** | | **2201** | **865.32** | | **929** | **418.90** | | **205** | **52.08** | | **7077** | **2670.20** | |
| Tools and implements | 241 | 76.00 | 18 | 272 | 97.48 | 13 | 190 | 81.40 | 11 | 16 | 7.10 | 2 | 719 | 261.98 | 44 |
| | **Demos** | **Nos.** | **KVKs** | **Demos** | **Nos.** | **KVKs** | **Demos** | **Nos.** | **KVKs** | **Demos** | **Nos.** | **KVKs** | **Demos** | **Nos.** | **KVKs** |
| Livestock | 959 | 44507 | 28 | 979 | 638922 | 20 | 606 | 29869 | 6 | 53 | 381 | 2 | 2597 | 713679 | 56 |
| Enterprises | 662 | 773 | 24 | 357 | 683 | 13 | 155 | 169 | 4 | 10 | 1 | 1 | 1184 | 1626 | 42 |
| Women and Children | 96 | 208 | 10 | 143 | 657 | 13 | 134 | 230 | 4 | 0 | 0 | 0 | 373 | 1095 | 27 |
| **Grand Total** | **5700** | **1409.91** | | **3952** | **962.8** | | **2014** | **500.3** | | **284** | **59.18** | | **11950** | **2932.18** | |
| **Total No of animals/ Enterprises** | | **45488** | | | **640262** | | | **30268** | | | **382** | | | **716400** | |

*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** | | | | | | | | | | | | | | | |
| Maize | 30 | 12.00 | 3 | 25 | 10.00 | 3 | 16 | 7.00 | 3 | | | | 71 | 29.00 | 9 |
| Paddy (Rice) | 826 | 318.60 | 26 | 185 | 75.20 | 13 | 122 | 55.20 | 9 | 20 | 6.00 | 2 | 1153 | 455.00 | 50 |
| **Total (Cereals)** | **856** | **330.6** | **26** | **210** | **85.2** | **13** | **138** | **62.2** | **11** | **20** | **6** | **2** | **1224** | **484** | **52** |
| **Commercial Crops** | | | | | | | | | | | | | | | |
| Mulberry | | | | 30 | 12.00 | 1 | 6 | 2.00 | 1 | | | | 36 | 14.00 | 2 |
| Sugarcane | 65 | 28.00 | 6 | 30 | 10.40 | 2 | 10 | 4.00 | 1 | | | | 105 | 42.40 | 9 |
| **Total (Commercial crops)** | **65** | **28** | **6** | **60** | **22.4** | **4** | **16** | **6** | **2** | | | | **141** | **56.4** | **12** |
| **Fibre Crops** | | | | | | | | | | | | | | | |
| Tobacco | | | | 10 | 5.00 | 1 | | | | | | | 10 | 5.00 | 1 |
| Cotton | 57 | 21.00 | 5 | 10 | 4.00 | 1 | 25 | 10.00 | 3 | | | | 92 | 35.00 | 9 |
| **Total (Fibre Crops)** | **57** | **21** | **5** | **20** | **9** | **1** | **25** | **10** | **3** | | | | **102** | **40** | **9** |
| **Fodder Crops** | | | | | | | | | | | | | | | |
| Azolla | 10 | | 1 | | | | | | | | | | 10 | 0.00 | 1 |
| Fodder Cowpea | | | | 8 | 1.20 | 1 | | | | | | | 8 | 1.20 | 1 |
| Fodder sorghum | 35 | 12.00 | 4 | | | | | | | 10 | 1.00 | 1 | 45 | 13.00 | 5 |
| Mixed fodder | | | | 10 | 4.00 | 1 | | | | | | | 10 | 4.00 | 1 |
| **Total (Fodder Crops)** | **45** | **12.00** | **5** | **18** | **5.20** | **2** | | | | **10** | **1.00** | **1** | **73** | **18.20** | **8** |
| **Green manure crops** | | | | | | | | | | | | | | | |
| Sunnhemp | 35 | 14.00 | 4 | 10 | 4.00 | 1 | | | | | | | 45 | 18.00 | 5 |
| **Total (Green manure crops)** | **35** | **14.00** | **4** | **10** | **4.00** | **1** | | | | | | | **45** | **18.00** | **5** |
| **Millets** | | | | | | | | | | | | | | | |
| Barnyard millet | 30 | 12.00 | 2 | | | | | | | | | | 30 | 12.00 | 2 |
| Finger millet | 130 | 53.00 | 11 | 44 | 17.60 | 4 | 5 | 2.00 | 1 | 10 | 4.00 | 1 | 189 | 76.60 | 17 |
| Foxtail millet | 40 | 16.00 | 4 | 40 | 16.00 | 4 | | | | 10 | 4.00 | 1 | 90 | 36.00 | 9 |
| Kodo millet | 20 | 8.00 | 2 | | | | | | | | | | 20 | 8.00 | 2 |
| Little millet | 50 | 20.00 | 3 | | | | | | | | | | 50 | 20.00 | 3 |
| Pearl millet | | | | 67 | 26.80 | 4 | | | | | | | 67 | 26.80 | 4 |
| Small millet | 10 | 4.00 | 1 | | | | | | | | | | 10 | 4.00 | 1 |
| Sorghum | 85 | 34.00 | 9 | 30 | 12.00 | 3 | 20 | 14.00 | 2 | | | | 135 | 60.00 | 14 |
| **(Total (Millets)** | **365** | **147** | **20** | **181** | **72.4** | **9** | **25** | **16** | **3** | **20** | **8** | **1** | **591** | **243.4** | **33** |

| 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 |
| **Oil seeds** | | | | | | | | | | | | | | | |
| Groundnut | 190 | 85.40 | 10 | 90 | 37.00 | 8 | 73 | 31.40 | 10 | 20 | 8.00 | 2 | 373 | 161.80 | 30 |
| Sesamum | 35 | 12.00 | 4 | 10 | 4.00 | 1 | 30 | 20.00 | 5 | | | | 75 | 36.00 | 10 |
| Soybean | | | | | | | 10 | 3.00 | 2 | | | | 10 | 3.00 | 2 |
| Sunflower | 10 | 2.00 | 1 | | | | 10 | 7.00 | 2 | | | | 20 | 9.00 | 3 |
| **Total (Oil seeds)** | **235** | **99.4** | **11** | **100** | **41** | **8** | **123** | **61.4** | **11** | **20** | **8** | **2** | **478** | **209.8** | **32** |
| **Pulses** | | | | | | | | | | | | | | | |
| Bengal gram | | | | | | | 5 | 2.00 | 1 | | | | 5 | 2.00 | 1 |
| Blackgram | 175 | 68.00 | 15 | 82 | 34.00 | 8 | 5 | 2.00 | 1 | 30 | 10.00 | 2 | 292 | 114.00 | 26 |
| Chickpea | | | | 75 | 33.00 | 5 | 20 | 7.00 | 3 | | | | 95 | 40.00 | 8 |
| Cowpea | 40 | 14.40 | 5 | 2 | 2.00 | 1 | | | | | | | 42 | 16.40 | 6 |
| Greengram | 65 | 26.00 | 7 | 20 | 9.00 | 2 | | | | | | | 85 | 35.00 | 9 |
| Horse gram | 10 | 4.00 | 1 | | | | | | | | | | 10 | 4.00 | 1 |
| Rajmah | | | | 20 | 8.00 | 2 | | | | | | | 20 | 8.00 | 2 |
| Redgram | 5 | 2.00 | 1 | 80 | 34.00 | 7 | 51 | 26.40 | 7 | | | | 136 | 62.40 | 15 |
| **Total (Pulses)** | **295** | **114.4** | **19** | **279** | **120** | **17** | **81** | **37.4** | **10** | **30** | **10** | **2** | **685** | **281.8** | **48** |
| **Total (Field Crops)** | **1953** | **766.4** | **31** | **878** | **359.2** | **22** | **408** | **193** | **15** | **100** | **33** | **2** | **3339** | **1351.6** | **70** |
| **Horticultural Crops** | | | | | | | | | | | | | | | |
| **Flowers** | | | | | | | | | | | | | | | |
| Chrysanthemum | | | | 55 | 22.00 | 4 | | | | | | | 55 | 22.00 | 4 |
| Jasmine | 85 | 26.45 | 8 | 5 | 2.00 | 1 | | | | | | | 90 | 28.45 | 9 |
| Marigold | | | | 25 | 10.00 | 2 | 10 | 7.00 | 2 | | | | 35 | 17.00 | 4 |
| Tuberose | 15 | 6.00 | 2 | | | | | | | | | | 15 | 6.00 | 2 |
| **Total (Flowers)** | **100** | **32.45** | **9** | **85** | **34** | **5** | **10** | **7** | **2** | | | | **195** | **73.45** | **16** |
| **Fruits** | | | | | | | | | | | | | | | |
| Acid lime | 10 | 4.00 | 1 | 10 | 4.00 | 1 | 5 | 2.00 | 1 | | | | 25 | 10.00 | 3 |
| Banana | 60 | 22.00 | 5 | 80 | 32.00 | 5 | | | | | | | 140 | 54.00 | 10 |
| Grapes | 5 | 2.00 | 1 | | | | | | | | | | 5 | 2.00 | 1 |
| Guava | 45 | 19.00 | 4 | 25 | 10.00 | 3 | 21 | 11.40 | 3 | | | | 91 | 40.40 | 10 |
| Mango | 50 | 16.00 | 5 | 129 | 50.10 | 6 | 60 | 26.10 | 7 | 20 | 4.00 | 1 | 259 | 96.20 | 19 |
| Musk melon | 10 | 1.00 | 1 | | | | | | | | | | 10 | 1.00 | 1 |
| Papaya | 10 | 1.00 | 1 | 60 | 27.00 | 7 | | | | | | | 70 | 28.00 | 8 |
| Pomegranate | | | | 60 | 24.00 | 3 | | | | | | | 60 | 24.00 | 3 |
| Sweet Orange | | | | 15 | 6.00 | 2 | | | | | | | 15 | 6.00 | 2 |
| Watermelon | 20 | 5.00 | 2 | 20 | 8.00 | 2 | | | | | | | 40 | 13.00 | 4 |
| **Total (Fruits)** | **210** | **70** | **13** | **399** | **161.1** | **15** | **86** | **39.5** | **11** | **20** | **4** | **1** | **715** | **274.6** | **40** |
| **Medicinal plants** | | | | | | | | | | | | | | | |
| Coleus | 20 | 1.40 | 2 | | | | | | | | | | 20 | 1.40 | 2 |
| Herbal garden | 10 | 0.00 | 1 | | | | | | | 10 | 0.04 | 1 | 20 | 0.04 | 2 |
| **Total (Medicinal plants)** | **30** | **1.4** | **2** | | | | | | | **10** | **0.04** | **1** | **40** | **1.44** | **3** |
| **Plantation crops** | | | | | | | | | | | | | | | |
| Betelvine | | | | 5 | 1.00 | 1 | | | | | | | 5 | 1.00 | 1 |
| Cashew | 10 | 4.00 | 1 | 10 | 4.00 | 1 | | | | | | | 20 | 8.00 | 2 |
| Coconut | 111 | 56.50 | 11 | 15 | 6.00 | 2 | | | | 20 | 4.00 | 1 | 146 | 66.50 | 14 |
| Oil palm | | | | 20 | 8.00 | 2 | | | | | | | 20 | 8.00 | 2 |
| Rosemary | 10 | 2.00 | 2 | | | | | | | | | | 10 | 2.00 | 2 |
| Tea | 10 | 1.00 | 1 | | | | | | | | | | 10 | 1.00 | 1 |
| Thime | 5 | 1.00 | 1 | | | | | | | | | | 5 | 1.00 | 1 |
| **Total (Plantation crops)** | **146** | **64.5** | **12** | **50** | **19** | **5** | | | | **20** | **4** | **1** | **216** | **87.5** | **18** |
| **Spices and Condiments)** | | | | | | | | | | | | | | | |
| Chilli (Red) | 20 | 6.00 | 2 | 35 | 15.00 | 2 | 42 | 21.90 | 6 | | | | 97 | 42.90 | 10 |
| Coriander (seed) | 15 | 6.00 | 2 | 15 | 8.00 | 2 | | | | | | | 30 | 14.00 | 4 |
| Ginger | | | | 50 | 18.00 | 4 | 8 | 3.20 | 1 | | | | 58 | 21.20 | 5 |
| Pepper | 35 | 8.00 | 4 | 10 | 2.50 | 1 | | | | | | | 45 | 10.50 | 5 |
| Turmeric (Dried) | 40 | 10.00 | 3 | 13 | 5.20 | 2 | | | | | | | 53 | 15.20 | 5 |
| Turmeric (Raw) | 5 | 2.00 | 1 | 70 | 26.00 | 7 | 10 | 4.00 | 1 | | | | 85 | 32.00 | 9 |
| **Total (S & C)** | **115** | **32** | **10** | **193** | **74.7** | **13** | **60** | **29.1** | **8** | | | | **368** | **135.8** | **31** |
| **Tuber Crops** | | | | | | | | | | | | | | | |
| Elephant foot yam | 10 | 1.00 | 1 | 10 | 4.00 | 1 | | | | | | | 20 | 5.00 | 2 |

| 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 |
| Potato | 15 | 2.00 | 1 | | | | | | | | | | 15 | 2.00 | 1 |
| Sweet potato | | | | 20 | 5.00 | 1 | | | | | | | 20 | 5.00 | 1 |
| Tapioca (Cassava) | 70 | 22.00 | 6 | | | | | | | 5 | 1.00 | 1 | 75 | 23.00 | 7 |
| Taro | | | | 10 | 4.00 | 1 | | | | | | | 10 | 4.00 | 1 |
| **Total (Tuber crops)** | **95** | **25** | **9** | **40** | **13** | **3** | | | | **5** | **1** | **1** | **140** | **39** | **13** |
| **Vegetables** | | | | | | | | | | | | | | | |
| Beetroot | 5 | 1.00 | 1 | | | | | | | | | | 5 | 1.00 | 1 |
| Bhindi/Okra | 30 | 6.40 | 4 | 20 | 8.00 | 2 | | | | | | | 50 | 14.40 | 6 |
| Bitter gourd | 15 | 3.00 | 2 | | | | | | | | | | 15 | 3.00 | 2 |
| Black night shade | 5 | 0.05 | 1 | | | | | | | | | | 5 | 0.05 | 1 |
| Bottle gourd | 20 | 5.00 | 2 | | | | | | | | | | 20 | 5.00 | 2 |
| Brinjal | 75 | 23.00 | 6 | 40 | 16.00 | 3 | 21 | 7.40 | 4 | 5 | 1.00 | 1 | 141 | 47.40 | 14 |
| Carrot | 15 | 3.00 | 1 | | | | | | | | | | 15 | 3.00 | 1 |
| Cauliflower | | | | | | | 5 | 1.00 | 1 | | | | 5 | 1.00 | 1 |
| Chilli (green) | 73 | 26.00 | 8 | 70 | 27.25 | 7 | 27 | 13.80 | 5 | | | | 170 | 67.05 | 20 |
| Colocasia | | | | 10 | 4.00 | 1 | | | | | | | 10 | 4.00 | 1 |
| Coriander leaf | 25 | 5.10 | 3 | | | | | | | | | | 25 | 5.10 | 3 |
| Cucumber | 15 | 5.00 | 2 | | | | | | | | | | 15 | 5.00 | 2 |
| Cucurbits | | | | 10 | 2.00 | 1 | | | | | | | 10 | 2.00 | 1 |
| Dolichosbean | 10 | 4.00 | 1 | 10 | 4.00 | 1 | 10 | 4.00 | 1 | | | | 30 | 12.00 | 3 |
| Drumstick | 25 | 7.00 | 3 | | | | | | | | | | 25 | 7.00 | 3 |
| Lablab | 23 | 4.30 | 3 | | | | | | | | | | 23 | 4.30 | 3 |
| Moringa | | | | 10 | 5.00 | 1 | | | | | | | 10 | 5.00 | 1 |
| Nutri-farm | 71 | 11.01 | 6 | 40 | 0.72 | 4 | 36 | 0.00 | 3 | 10 | 0.04 | 1 | 157 | 11.77 | 14 |
| Onion | 35 | 9.05 | 4 | 10 | 6.00 | 1 | 16 | 5.20 | 2 | 0 | 0.00 | 0 | 61 | 20.25 | 7 |
| Onion (Aggregatum) | 45 | 18.00 | 5 | | | | | | | | | | 45 | 18.00 | 5 |
| Palak | 10 | 0.20 | 1 | | | | | | | | | | 10 | 0.20 | 1 |
| Pumpkin | 10 | 4.00 | 1 | | | | | | | | | | 10 | 4.00 | 1 |
| Ridge gourd | 25 | 8.05 | 4 | 60 | 24.00 | 7 | 52 | 18.90 | 8 | | | | 137 | 50.95 | 19 |
| Snake gourd | 10 | 4.00 | 1 | | | | | | | | | | 10 | 4.00 | 1 |
| Spinach | 10 | 2.00 | 1 | | | | | | | | | | 10 | 2.00 | 1 |
| Spine Gourd | | | | | | | 5 | 5.00 | 1 | | | | 5 | 5.00 | 1 |
| Tomato | 40 | 24.00 | 5 | 15 | 5.25 | 2 | 25 | 9.00 | 4 | | | | 80 | 38.25 | 11 |
| **Total (Vegetables)** | **592** | **173.16** | **27** | **295** | **102.22** | **17** | **197** | **64.30** | **12** | **15** | **1.04** | **2** | **1099** | **340.72** | **58** |
| **Total (Horti crops)** | **1288** | **398.51** | **29** | **1062** | **404.02** | **22** | **353** | **139.90** | **15** | **70** | **10.08** | **2** | **2773** | **952.51** | **68** |
| **Grand Total** | **3241** | **1164.91** | **31** | **1940** | **763.22** | **23** | **761** | **332.90** | **15** | **170** | **43.08** | **2** | **6112** | **2304.11** | **71** |

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

## 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 | 165 | 64.40 | 14 | 40 | 16.00 | 2 | 25 | 21.00 | 4 | | | | 230 | 101.40 | 20 |
| **Total (Cereals)** | **165** | **64.4** | **14** | **40** | **16** | **2** | **25** | **21** | **4** | | | | **230** | **101.4** | **20** |
| **Fibre Crops** | | | | | | | | | | | | | | | |
| Cotton | 50 | 20.00 | 5 | 50 | 20.10 | 5 | 76 | 45.40 | 8 | 10 | 2.00 | 1 | 186 | 87.50 | 19 |
| **Total (Fibre Crops)** | **50** | **20** | **5** | **50** | **20.1** | **5** | **76** | **45.4** | **8** | **10** | **2** | **1** | **186** | **87.5** | **19** |
| **Fodder Crops** | | | | | | | | | | | | | | | |
| Cumbu/Bajra Napier grass | 45 | 9.80 | 5 | | | | | | | | | | 45 | 9.80 | 5 |
| Fodder Maize | 10 | 10.00 | 1 | | | | 5 | 1.00 | 1 | | | | 15 | 11.00 | 2 |
| **Total (Fodder Crops)** | **55** | **19.80** | **6** | | | | **5** | **1.00** | **1** | | | | **60** | **20.80** | **7** |
| **Millets** | | | | | | | | | | | | | | | |
| Pearl millet | 47 | 11.30 | 5 | | | | | | | | | | 47 | 11.30 | 5 |
| Sorghum | | | | | | | 2 | 2.40 | 1 | | | | 2 | 2.40 | 1 |
| **(Total (Millets)** | **47** | **11.3** | **5** | | | | **2** | **2.4** | **1** | | | | **49** | **13.7** | **6** |
| **Oil seeds** | | | | | | | | | | | | | | | |
| Castor | 30 | 12.00 | 2 | 20 | 11.00 | 2 | | | | | | | 50 | 23.00 | 4 |
| Sunflower | | | | | | | 5 | 2.00 | 1 | 10 | 4.00 | 1 | 15 | 6.00 | 2 |

| 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 |
| **Total (Oil seeds)** | **30** | **12** | **2** | **20** | **11** | **2** | **5** | **2** | **1** | **10** | **4** | **1** | **65** | **29** | **6** |
| **Total (Field Crops)** | **347** | **127.5** | **21** | **110** | **47.1** | **8** | **113** | **71.8** | **12** | **20** | **6** | **1** | **590** | **252.4** | **42** |
| **Horticultural Crops** | | | | | | | | | | | | | | | |
| **Flowers** | | | | | | | | | | | | | | | |
| Marigold | | | | 15 | 6.00 | 1 | 9 | 1.00 | 1 | | | | 24 | 7.00 | 2 |
| **Total (Flowers)** | | | | **15** | **6** | **1** | **9** | **1** | **1** | | | | **24** | **7** | **2** |
| **Fruits** | | | | | | | | | | | | | | | |
| Watermelon | | | | 10 | 4.00 | 1 | 6 | 1.00 | 1 | | | | 16 | 5.00 | 2 |
| **Total (Fruits)** | | | | **10** | **4** | **1** | **6** | **1** | **1** | | | | **16** | **5** | **2** |
| **Vegetables** | | | | | | | | | | | | | | | |
| Bhindi/Okra | 30 | 10.00 | 3 | 10 | 4.00 | 1 | | | | | | | 40 | 14.00 | 4 |
| Bottle gourd | 10 | 4.00 | 1 | | | | | | | | | | 10 | 4.00 | 1 |
| Chilli (green) | 50 | 10.00 | 4 | 10 | 4.00 | 1 | | | | | | | 60 | 14.00 | 5 |
| French Bean | 5 | 0.50 | 1 | | | | | | | | | | 5 | 0.50 | 1 |
| Ridge gourd | | | | | | | | | | 15 | 3.00 | 2 | 21 | 3.90 | 3 |
| Snake gourd | 10 | 2.00 | 1 | | | | | | | | | | 10 | 2.00 | 1 |
| Tomato | 49 | 15.00 | 6 | 106 | 37.00 | 6 | 34 | 11.30 | 5 | | | | 189 | 63.30 | 17 |
| **Total (Vegetables)** | **154** | **41.50** | **12** | **126** | **45.00** | **7** | **40** | **12.20** | **6** | **15** | **3.00** | **2** | **335** | **101.70** | **27** |
| **Total (Horti crops)** | **154** | **41.50** | **12** | **151** | **55.00** | **8** | **55** | **14.20** | **6** | **15** | **3.00** | **2** | **375** | **113.70** | **28** |
| **Grand Total** | **501** | **169.00** | **24** | **261** | **102.10** | **12** | **168** | **86.00** | **12** | **35** | **9.00** | **2** | **965** | **366.10** | **50** |

*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 | | | | 36 | 14.00 | 4 | 38 | 16.00 | 3 | | | | 74 | 30.00 | 7 |
| Sowing and Planting | 120 | 46.00 | 8 | 86 | 36.00 | 4 | 21 | 8.40 | 2 | 3 | 0.10 | 1 | 230 | 90.50 | 15 |
| Intercultural operations | 4 | 1.00 | 1 | 75 | 21.44 | 4 | 15 | 7.00 | 2 | 3 | 3.00 | 1 | 97 | 32.44 | 8 |
| Total Mechanization | 4 | 1.00 | 1 | 15 | 6.00 | 2 | 25 | 13.00 | 3 | | | | 44 | 20.00 | 6 |
| Irrigation | | | | | | | 10 | 10.00 | 1 | | | | 10 | 10.00 | 1 |
| Plant protection | 30 | 12.00 | 3 | 30 | 12.00 | 3 | 10 | 4.00 | 1 | 10 | 4.00 | 1 | 80 | 32.00 | 8 |
| Mobile App | 10 | | 1 | | | | | | | | | | 10 | | 1 |
| Soil testing | 10 | 5.00 | 1 | | | | | | | | | | 10 | 5.00 | 1 |
| Value addition | 10 | | 1 | | | | | | | | | | 10 | | 1 |
| Harvesting machineries | 34 | 7.00 | 5 | 10 | 0.00 | 1 | 23 | 2.00 | 4 | | | | 67 | 9.00 | 10 |
| Postharvest technology | 19 | 4.00 | 4 | 20 | 8.04 | 2 | 48 | 21.00 | 6 | | | | 87 | 33.04 | 12 |
| **Total** | **241** | **76.00** | **18** | **272** | **97.48** | **13** | **190** | **81.40** | **11** | **16** | **7.10** | **2** | **719** | **261.98** | **44** |

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

## 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 |
| Cattle | 330 | 455 | 18 | 180 | 210 | 9 | 25 | 84 | 2 | 15 | 21 | 2 | 550 | 770 | 31 |
| Buffalo | | | | 235 | 375 | 9 | 66 | 585 | 5 | | | | 301 | 960 | 14 |
| Goat | 70 | 232 | 6 | 10 | 10 | 1 | | | | 20 | 60 | 1 | 100 | 302 | 8 |
| Sheep | 5 | 15 | 1 | 73 | 330 | 8 | 6 | 155 | 1 | | | | 84 | 500 | 10 |
| Poultry | 245 | 5890 | 15 | 335 | 3245 | 10 | 475 | 1545 | 4 | 15 | 300 | 2 | 1070 | 10980 | 31 |
| Duckery | 15 | 200 | 2 | | | | | | | | | | 15 | 200 | 2 |
| Quail | 5 | 100 | 1 | | | | | | | | | | 5 | 100 | 1 |
| Fish | 121 | 37605 | 8 | 83 | 634500 | 6 | 24 | 27500 | 3 | 3 | | 1 | 231 | 699605 | 18 |
| Feed and Fodder | 168 | 10 | 3 | 63 | 252 | 5 | 10 | | 1 | | | | 241 | 262 | 9 |
| **Total** | **959** | **44507** | **28** | **979** | **638922** | **20** | **606** | **29869** | **6** | **53** | **381** | **2** | **2597** | **713679** | **56** |

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

**Demonstration on Intercropping of Jowar and Redgram - Medak, Telangana**

## 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 |
| Bio-inputs production | 10 | 10 | 1 | | | | | | | | | | 10 | 10 | 1 |
| Compost production | 50 | 35 | 5 | | | | | | | | | | 50 | 35 | 5 |
| Food preservation | 62 | 62 | 5 | | | | | | | | | | 62 | 62 | 5 |
| Inputs production | 10 | 10 | 1 | | | | | | | | | | 10 | 10 | 1 |
| Mushroom production | 5 | 5 | 1 | 16 | 20 | 1 | | | | | | | 21 | 25 | 2 |
| Poultry production | 10 | 100 | 1 | 10 | 10 | 1 | | | | | | | 20 | 110 | 2 |
| Sericulture | | | | 10 | 10 | 1 | 6 | 6 | 1 | | | | 16 | 16 | 2 |
| Value Addition | 461 | 471 | 21 | 306 | 628 | 11 | 49 | 63 | 4 | 10 | 1 | 1 | 826 | 1163 | 37 |
| Vegetable production | 24 | 50 | 3 | 15 | 15 | 2 | 100 | 100 | 1 | | | | 139 | 165 | 6 |
| Vermicomposting | 30 | 30 | 2 | | | | | | | | | | 30 | 30 | 2 |
| **Total** | **662** | **773** | **24** | **357** | **683** | **13** | **155** | **169** | **4** | **10** | **1** | **1** | **1184** | **1626** | **42** |

*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 |
| Entrepreneurship Development | 43 | 58 | 4 | 34 | 272 | 6 | 6 | 50 | 1 | 83 | 380 | 11 |
| Health and Nutrition | 43 | 140 | 6 | 99 | 360 | 9 | 118 | 170 | 4 | 260 | 670 | 19 |
| Compost production | | | | | | | 5 | 5 | 1 | 5 | 5 | 1 |
| Drudgery Reduction | 5 | 5 | 1 | 10 | 25 | 1 | 5 | 5 | 1 | 20 | 35 | 3 |
| Others | 5 | 5 | 1 | | | | | | | 5 | 5 | 1 |
| **Total** | **96** | **208** | **10** | **143** | **657** | **13** | **134** | **230** | **4** | **373** | **1095** | **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 1153 FLDs on varieties, IPM and IDM technologies were conducted on rice crop with an average yield increase of 13% and BCR of 1:2.23 as against 1:1.90 in farmers practice (Table 3.2.8). The average yield advantages in the 135 demonstrations on sorghum, 189 demonstrations on finger millet, 67 demonstrations on pearl millet and 90 demonstrations on foxtail millet were 25, 22, 20 and 23 per cent, respectively and the BCR was 1:2.14, 1:2.39, 1:2.30 and 1:2.11, respectively. Among pulses, an average yield increase of 22 per cent was observed in 42 demonstrations on cowpea varieties and technologies while in the 136 demonstrations on redgram, the average yield increase was 19 per cent. Among the oilseeds, the average yield enhancement in 373 demonstrations on groundnut was 20 per cent and the BCR was 1:2.43. Cotton technologies were demonstrated at 92 locations with an average yield enhancement of 16 per cent. Among the vegetable crops, chilli (green) varieties and technologies were demonstrated at 170 locations with an average yield enhancement of 20 per cent, nutri-farm with multiple vegetables in 157 demonstrations with an average yield enhancement of 19 per cent and tomato at 80 locations with an average yield increase of 28 per cent. Among the fruit crops, mango varieties and technologies were demonstrated at 259 locations with an average yield increase of 33 per cent. Banana was demonstrated at 140 locations with an average yield enhancement of 14 per cent. Guava was demonstrated at 91 locations with an average yield increase of 26 per cent. Red chilli was demonstrated at 97 locations with an average yield increase of 25 per cent. Turmeric (raw) was demonstrated at 85 locations with an average yield enhancement of 15 per cent. Pepper was demonstrated at 45 locations with an average yield increase of 29 per cent. Among plantation crops, an average yield increase of 21 per cent was observed in 143 demonstrations on coconut.

Among hybrids maize, cotton, chilli (green) and tomato were demonstrated at 230, 186, 60 and 189 locations presented in Table 3.2.9.

Tools and implements for sowing and planting, intercultural operations, harvesting equipment and post-harvest processing tools and equipment were demonstrated at 699 locations. The performance of technologies in terms of income and benefit cost ratio are presented in Table 3.2.10.

KVKs in the Zone conducted 2597 demonstrations involving 713679 animals, birds and fish fingerlings on technologies like Mastiguard, bypass fat, 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 Kadaknath, Aseel and Gaghus, Gramapriya, 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).

## 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** | | | | | | | | | | | | |
| Maize | 71 | 29.00 | 9 | 67.59 | 59.35 | 14 | 48712 | 134423 | 1:3.76 | 52021 | 51958 | 1:2.00 |
| Paddy (Rice) | 1153 | 455.00 | 50 | 56.15 | 49.55 | 13 | 58237 | 71620 | 1:2.23 | 60995 | 55005 | 1:1.90 |
| Sugarcane | 105 | 42.40 | 9 | 1016.49 | 880.74 | 15 | 96005 | 135574 | 1:2.41 | 112044 | 102349 | 1:1.91 |
| Cotton | 92 | 35.00 | 9 | 21.13 | 18.26 | 16 | 76264 | 65202 | 1:1.85 | 79313 | 44239 | 1:1.56 |
| Finger millet | 189 | 76.60 | 17 | 22.34 | 18.28 | 22 | 32732 | 45501 | 1:2.39 | 32511 | 32289 | 1:1.99 |
| Foxtail millet | 90 | 36.00 | 9 | 20.21 | 16.41 | 23 | 43160 | 47742 | 1:2.11 | 36458 | 35940 | 1:1.99 |
| Pearl millet | 67 | 26.80 | 4 | 14.83 | 12.31 | 20 | 27750 | 36066 | 1:2.30 | 28941 | 24624 | 1:1.85 |
| Sorghum | 135 | 60.00 | 14 | 23.04 | 18.42 | 25 | 43186 | 49364 | 1:2.14 | 41296 | 32802 | 1:1.79 |
| Groundnut | 373 | 161.80 | 30 | 22.72 | 18.88 | 20 | 64460 | 92413 | 1:2.43 | 64249 | 66919 | 1:2.04 |
| Sesamum | 75 | 36.00 | 10 | 9.50 | 7.58 | 25 | 36496 | 61222 | 1:2.68 | 31376 | 38916 | 1:2.24 |
| Blackgram | 292 | 114.00 | 26 | 9.70 | 9.43 | 3 | 31868 | 41701 | 1:2.31 | 32420 | 27907 | 1:1.86 |
| Chickpea | 95 | 40.00 | 8 | 15.30 | 13.08 | 17 | 57368 | 42563 | 1:1.74 | 53262 | 30795 | 1:1.58 |
| Cowpea | 42 | 16.40 | 6 | 9.80 | 8.00 | 22 | 31177 | 50579 | 1:2.62 | 32020 | 37764 | 1:2.18 |
| Greengram | 85 | 35.00 | 9 | 7.89 | 6.76 | 17 | 25726 | 38699 | 1:2.50 | 30213 | 23783 | 1:1.79 |
| Redgram | 136 | 62.40 | 15 | 12.16 | 10.21 | 19 | 41259 | 60061 | 1:2.46 | 61511 | 45286 | 1:1.74 |
| **Horticultural Crops** | | | | | | | | | | | | |
| Chrysanthemum | 55 | 22.00 | 4 | 103.71 | 84.44 | 23 | 454927 | 459888 | 1:2.01 | 347010 | 276970 | 1:1.8 |
| Jasmine | 90 | 28.45 | 9 | 69.79 | 57.63 | 21 | 196396 | 282749 | 1:2.44 | 170762 | 184751 | 1:2.08 |
| Marigold | 35 | 17.00 | 4 | 81.96 | 63.22 | 30 | 214424 | 243933 | 1:2.14 | 164174 | 148289 | 1:1.90 |
| Banana | 140 | 54.00 | 10 | 518.96 | 454.17 | 14 | 285405 | 398002 | 1:2.39 | 237722 | 302227 | 1:2.27 |
| Guava | 91 | 40.40 | 10 | 295.80 | 234.44 | 26 | 121232 | 166454 | 1:2.37 | 109220 | 132694 | 1:2.21 |
| Mango | 259 | 96.20 | 19 | 131.09 | 98.48 | 33 | 96126 | 131930 | 1:2.37 | 83522 | 85450 | 1:2.02 |
| Papaya | 70 | 28.00 | 8 | 533.67 | 477.78 | 12 | 303283 | 563000 | 1:2.86 | 310842 | 435277 | 1:2.40 |
| Watermelon | 40 | 13.00 | 4 | 319.26 | 247.91 | 29 | 179588 | 171600 | 1:1.96 | 164875 | 111963 | 1:1.68 |
| Coconut | 146 | 66.50 | 14 | 8863 | 7353 | 21 | 53884 | 87769 | 1:2.63 | 53694 | 64236 | 1:2.20 |
| Chilli (Red) | 97 | 42.90 | 10 | 62.04 | 49.71 | 25 | 309179 | 467757 | 1:2.51 | 325246 | 327622 | 1:2.01 |
| Coriander (seed) | 30 | 14.00 | 4 | 14.31 | 12.25 | 17 | 61131 | 88092 | 1:2.44 | 59156 | 68565 | 1:2.16 |
| Ginger | 58 | 21.20 | 5 | 96.67 | 85.03 | 14 | 255713 | 417950 | 1:2.63 | 224217 | 336793 | 1:2.50 |
| Pepper | 45 | 10.50 | 5 | 13.63 | 10.55 | 29 | 198435 | 329095 | 1:2.66 | 213025 | 213325 | 1:2.00 |
| Turmeric (Dried) | 53 | 15.20 | 5 | 170.33 | 135.72 | 26 | 212938 | 188680 | 1:1.89 | 213736 | 107145 | 1:1.50 |
| Turmeric (Raw) | 85 | 32.00 | 9 | 135.60 | 117.78 | 15 | 215957 | 209809 | 1:1.97 | 180739 | 157814 | 1:1.87 |
| Bhindi/Okra | 50 | 14.40 | 6 | 229.42 | 184.77 | 24 | 70950 | 122180 | 1:2.72 | 66763 | 85887 | 1:2.29 |
| Brinjal | 141 | 47.40 | 14 | 271.10 | 218.26 | 24 | 156380 | 235342 | 1:2.50 | 152040 | 171629 | 1:2.13 |
| Chilli (green) | 170 | 67.05 | 20 | 135.60 | 113.41 | 20 | 157399 | 183728 | 1:2.17 | 151790 | 125863 | 1:1.83 |
| Nutri-farm | 157 | 11.77 | 14 | 141.73 | 119.04 | 19 | 44292 | 69497 | 1:2.57 | 39379 | 45115 | 1:2.15 |
| Onion | 61 | 20.25 | 7 | 240.89 | 209.42 | 15 | 102331 | 207866 | 1:3.03 | 104584 | 153534 | 1:2.47 |
| Onion (Aggregatum) | 45 | 18.00 | 5 | 143.36 | 115.84 | 24 | 122694 | 186342 | 1:2.52 | 119550 | 121656 | 1:2.02 |
| Ridge gourd | 137 | 50.95 | 19 | 201.65 | 171.16 | 18 | 197537 | 347748 | 1:2.76 | 186626 | 271981 | 1:2.46 |
| Tomato | 80 | 38.25 | 11 | 272.88 | 212.51 | 28 | 202757 | 245697 | 1:2.21 | 171418 | 177686 | 1:2.04 |
| **Total (Vegetables)** | 1099 | 340.72 | 58 | 67.59 | 59.35 | 14 | 48712 | 134423 | 1:3.76 | 52021 | 51958 | 1:2.00 |
| **Total (Horti crops)** | 2773 | 952.51 | 68 | 56.15 | 49.55 | 13 | 58237 | 71620 | 1:2.23 | 60995 | 55005 | 1:1.90 |
| **Grand Total** | **6112** | **2304.11** | **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*

## 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 |
| **Field Crops** | | | | | | | | | | | | |
| Maize | 230 | 101.40 | 20 | 1184.15 | 1038.34 | 14 | 57893 | 92647 | 1:2.60 | 58835 | 70933 | 1:2.21 |
| Cotton | 186 | 87.50 | 19 | 294.54 | 258.12 | 14 | 71188 | 68360 | 1:1.96 | 69096 | 47836 | 1:1.69 |
| Cumbu/Napier grass | 45 | 9.80 | 5 | 1683.24 | 1484.62 | | 87803 | 130367 | 1:2.48 | 84155 | 90285 | 1:2.07 |
| Fodder maize | 15 | 11.00 | 2 | 45.50 | 39.58 | 15 | 88840 | 105348 | 1:2.19 | 83623 | 84736 | 1:2.01 |
| Pearl millet | 47 | 11.30 | 5 | 73.09 | 64.32 | 14 | 27042 | 32419 | 1:2.20 | 24917 | 23407 | 1:1.94 |
| Sorghum | 2 | 2.40 | 1 | 27.50 | 21.73 | 27 | 48125 | 72275 | 1:2.50 | 46750 | 46668 | 1:2.00 |
| Castor | 50 | 23.00 | 4 | 118.39 | 115.58 | 2 | 27391 | 41714 | 1:2.52 | 29360 | 24651 | 1:1.84 |
| Sunflower | 15 | 6.00 | 2 | 14.34 | 11.83 | 21 | 34625 | 54335 | 1:2.57 | 35625 | 37871 | 1:2.06 |
| **Horticultural Crops** | | | | | | | | | | | | |
| Marigold | 24 | 7.00 | 2 | 2748.15 | 2398.15 | 15 | 87888 | 341500 | 1:4.89 | 90838 | 260000 | 1:3.86 |
| Watermelon | 16 | 5.00 | 2 | 365.30 | 307.00 | 19 | 225550 | 343850 | 1:2.52 | 209900 | 231500 | 1:2.10 |
| Bhindi/Okra | 40 | 14.00 | 4 | 220.06 | 170.98 | 29 | 77510 | 177053 | 1:3.28 | 79230 | 120060 | 1:2.52 |
| Bottle gourd | 10 | 4.00 | 1 | 36.41 | 29.83 | 22 | 81101 | 54635 | 1:1.67 | 82505 | 23043 | 1:1.28 |
| Chilli (green) | 60 | 14.00 | 5 | 71.02 | 55.67 | 28 | 238261 | 246717 | 1:2.04 | 215655 | 119851 | 1:1.56 |
| French Bean | 5 | 0.50 | 1 | 187.82 | 162.82 | 15 | 132490 | 149240 | 1:2.13 | 143900 | 100330 | 1:1.70 |
| Ridge gourd | 21 | 3.90 | 3 | 266.99 | 221.39 | 21 | 142940 | 328632 | 1:3.30 | 138428 | 243790 | 1:2.76 |
| Snake gourd | 10 | 2.00 | 1 | 652.15 | 545.95 | 19 | 279433 | 510146 | 1:2.83 | 295769 | 359369 | 1:2.22 |
| Tomato | 189 | 63.30 | 17 | 402.46 | 355.59 | 13 | 199602 | 274682 | 1:2.38 | 217172 | 227208 | 1:2.05 |

*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 | Demos | Area (ha) | KVKs | Economics | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Demonstration | | | Check | | |
| | | | | Gross Cost (Rs.) | Net Returns (Rs.) | BCR | Gross Cost (Rs.) | Net Returns (Rs.) | BCR |
| Land preparation | 74 | 30.00 | 7 | 50935 | 50471 | 1:1.99 | 48571 | 37633 | 1:1.77 |
| Sowing and Planting | 230 | 90.50 | 15 | 53685 | 68928 | 1:2.28 | 53603 | 55914 | 1:2.04 |
| Intercultural operations | 97 | 32.44 | 8 | 43049 | 30272 | 1:1.70 | 47144 | 17070 | 1:1.36 |
| Total Mechanization | 44 | 20.00 | 6 | 77766 | 136279 | 1:2.75 | 94591 | 86387 | 1:1.91 |
| Irrigation | 10 | 10.00 | 1 | 35950 | 23175 | 1:1.64 | 90125 | 45375 | 1:1.50 |
| Plant protection | 80 | 32.00 | 8 | 59028 | 65252 | 1:2.11 | 62313 | 55130 | 1:1.88 |
| Value addition | 10 | 0.00 | 1 | 3550 | 3950 | 1:2.11 | 1500 | 500 | 1:1.33 |
| Harvesting machineries | 67 | 9.00 | 10 | 55636 | 61801 | 1:2.11 | 56139 | 41262 | 1:1.73 |
| Postharvest technology | 87 | 33.04 | 12 | 123983 | 105610 | 1:1.85 | 107885 | 70769 | 1:1.66 |

*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 | No. of animals | KVKs | Economics | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Demonstration | | | Check | | |
| | | | | Gross Cost (Rs.) | Net Returns (Rs.) | BCR | Gross Cost (Rs.) | Net Returns (Rs.) | BCR |
| Cattle | 550 | 770 | 31 | 18741 | 25985 | 1:2.39 | 18304 | 17042 | 1:1.93 |
| Buffalo | 301 | 960 | 14 | 24515 | 20762 | 1:1.85 | 14742 | 9094 | 1:1.62 |
| Goat | 100 | 302 | 8 | 6801 | 12348 | 1:2.82 | 6807 | 8954 | 1:2.32 |
| Sheep | 84 | 500 | 10 | 3391 | 3960 | 1:2.17 | 3009 | 2177 | 1:1.72 |
| Poultry | 1070 | 10980 | 31 | 8022 | 10175 | 1:2.27 | 7642 | 6661 | 1:1.87 |
| Duckery | 15 | 200 | 2 | 1116 | 1254 | 1:2.12 | 860 | 600 | 1:1.70 |
| Quail | 5 | 100 | 1 | 3200 | 3380 | 1:2.06 | 5250 | 2050 | 1:1.39 |
| Fish | 231 | 699605 | 18 | 247117 | 183019 | 1:1.74 | 212855 | 79893 | 1:1.38 |
| Feed and Fodder | 241 | 262 | 9 | 15318 | 14952 | 1:1.98 | 13059 | 10265 | 1:1.79 |

*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 | No. of units. | KVKs | Economics | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Demonstration | | | Check | | |
| | | | | Gross Cost (Rs.) | Net Returns (Rs.) | BCR | Gross Cost (Rs.) | Net Returns (Rs.) | BCR |
| Bio-inputs production | 10 | 10 | 1 | 179620 | 120220 | 1:1.67 | 639923 | 58638 | 1:1.09 |
| Compost production | 50 | 35 | 5 | 28544 | 74654 | 1:3.62 | 26934 | 48899 | 1:2.82 |
| Food preservation | 62 | 62 | 5 | 3957 | 7347 | 1:2.86 | 2829 | 3629 | 1:2.28 |
| Inputs production | 10 | 10 | 1 | 38674 | 35885 | 1:1.93 | 255069 | 53465 | 1:1.21 |
| Mushroom production | 5 | 5 | 1 | 22500 | 40200 | 1:2.79 | 14433 | 20167 | 1:2.4 |
| Poultry production | 10 | 100 | 1 | 2075 | 1575 | 1:1.76 | 1050 | 750 | 1:1.71 |
| Value Addition | 461 | 471 | 21 | 16191 | 27136 | 1:2.68 | 13907 | 14494 | 1:2.04 |
| Vegetable production | 24 | 50 | 3 | 11735 | 17385 | 1:2.48 | 5633 | 8381 | 1:2.49 |
| Vermicomposting | 30 | 30 | 2 | 18892 | 23851 | 1:2.26 | 17278 | 12480 | 1:1.72 |

*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 | No. of enterprises | KVKs | Economics | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Demonstration | | | Check | | |
| | | | | Gross Cost (Rs.) | Net Returns (Rs.) | BCR | Gross Cost (Rs.) | Net Returns (Rs.) | BCR |
| Entrepreneurship Development | 83 | 380 | 11 | 13372 | 15771 | 1:2.18 | 6524 | 6672 | 1:2.02 |
| Health and Nutrition | 260 | 670 | 19 | 8020 | 9140 | 1:2.14 | 7628 | 4972 | 1:1.65 |
| Drudgery Reduction | 20 | 35 | 3 | 2000 | 4120 | 1:3.06 | 3000 | 2805 | 1:1.94 |
| Others | 5 | 5 | 1 | 500000 | 700000 | 1:2.40 | 300000 | 180000 | 1:1.60 |

*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 biofortified Bajra ABV 04 - Visakhapatnam , Andhra Pradesh**

**Demonstration of rose mary cultivation - Erode, Tamil Nadu**


**Demonstration of Sigatoka management in Banana - Anantapur, Andhra Pradesh**


**Demonstration of tick shield to control tick infestation in dairy animals- Kanchi, Tamil Nadu**


**Demontration on MN mixture demonstration-Thiruvannamalai, Tamil Nadu**

**Field demonstration on turmeric - Tiruvannamalai, Tamil Nadu**


**FLD on Arka Abhed variety of Tomato - Krishna (Ghantasala), Andhra Pradesh**


**FLD on finger millet variety Indravathi - Chittoor, Andhra Pradesh**


**FLD on Sunflower hybrid CoH3 - Madurai, Tamil Nadu**

**FLD Seed Drill - Srikakulam, Andhra Pradesh**

ICM in chillies - Kothagudem, Telangana


ICM practices of paddy using Agricultual drone - West Godavari (VR Gudem), Andhra Pradesh


Soil test based nutrient management in Maize - Kurnool, Yagantipalli , 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 9489 training programmes to 370431 beneficiaries (Table 3.3.1) including farmers, rural youth extension functionaries, sponsored trainings, and vocational trainings.

A total of 8442 training programmes on agricultural and allied technologies to increase the production and productivity of crops, dairy and others were organized for 313880 farmers and farm women, rural youth, and extension functionaries by KVKs in the Zone. Sponsored training was conducted for 47127 beneficiaries and vocational training for 9424 beneficiaries through 676 and 371 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 | 3328 | 107220 | 2063 | 82025 | 993 | 45617 | 136 | 3241 | 6520 | 238103 |
| Rural Youth | 523 | 15247 | 424 | 14519 | 107 | 3802 | 11 | 259 | 1065 | 33827 |
| Extension Personnel | 306 | 11091 | 417 | 23946 | 127 | 6608 | 7 | 305 | 857 | 41950 |
| **Total need-based trainings** | **4157** | **133558** | **2904** | **120490** | **1227** | **56027** | **154** | **3805** | **8442** | **313880** |
| Sponsored Trainings | 419 | 31878 | 189 | 12082 | 57 | 2802 | 11 | 365 | 676 | 47127 |
| Vocational Trainings | 149 | 4049 | 188 | 4395 | 27 | 784 | 7 | 196 | 371 | 9424 |
| **Grand total** | **4725** | **169485** | **3281** | **136967** | **1311** | **59613** | **172** | **4366** | **9489** | **370431** |

*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 | 3328 | 47727 | 30982 | 78709 | 13781 | 14730 | 28511 | 61508 | 45712 | 107220 |
| RY | 523 | 5984 | 5168 | 11152 | 1758 | 2337 | 4095 | 7742 | 7505 | 15247 |
| EF | 306 | 5532 | 3636 | 9168 | 950 | 973 | 1923 | 6482 | 4609 | 11091 |
| **Total** | **4157** | **59243** | **39786** | **99029** | **16489** | **18040** | **34529** | **75732** | **57826** | **133558** |
| Sponsored | 419 | 7589 | 5233 | 12822 | 7443 | 11613 | 19056 | 15032 | 16846 | 31878 |
| Vocational | 149 | 1415 | 1277 | 2692 | 579 | 778 | 1357 | 1994 | 2055 | 4049 |
| **Grand Total** | **4725** | **68247** | **46296** | **114543** | **24511** | **30431** | **54942** | **92758** | **76727** | **169485** |
| **Andhra Pradesh** | | | | | | | | | | |
| FFW | 2063 | 36003 | 18585 | 54588 | 15629 | 11808 | 27437 | 51632 | 30393 | 82025 |
| RY | 424 | 6378 | 3883 | 10261 | 2418 | 1840 | 4258 | 8796 | 5723 | 14519 |
| EF | 417 | 12331 | 6109 | 18440 | 3148 | 2358 | 5506 | 15479 | 8467 | 23946 |
| **Total** | **2904** | **54712** | **28577** | **83289** | **21195** | **16006** | **37201** | **75907** | **44583** | **120490** |
| Sponsored | 189 | 5358 | 2499 | 7857 | 2637 | 1588 | 4225 | 7995 | 4087 | 12082 |
| Vocational | 188 | 951 | 816 | 1767 | 827 | 1801 | 2628 | 1778 | 2617 | 4395 |
| **Grand Total** | **3281** | **61021** | **31892** | **92913** | **24659** | **19395** | **44054** | **85680** | **51287** | **136967** |
| **Telangana** | | | | | | | | | | |
| FFW | 993 | 18367 | 9118 | 27485 | 10376 | 7756 | 18132 | 28743 | 16874 | 45617 |

| Clientele | No. of Courses | Other Beneficiaries | | | SC/ST Beneficiaries | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| RY | 107 | 1179 | 859 | 2038 | 1115 | 649 | 1764 | 2294 | 1508 | 3802 |
| EF | 127 | 2833 | 1726 | 4559 | 954 | 1095 | 2049 | 3787 | 2821 | 6608 |
| **Total** | **1227** | **22379** | **11703** | **34082** | **12445** | **9500** | **21945** | **34824** | **21203** | **56027** |
| Sponsored | 57 | 682 | 282 | 964 | 1215 | 623 | 1838 | 1897 | 905 | 2802 |
| Vocational | 27 | 225 | 111 | 336 | 210 | 238 | 448 | 435 | 349 | 784 |
| **Grand Total** | **1311** | **23286** | **12096** | **35382** | **13870** | **10361** | **24231** | **37156** | **22457** | **59613** |
| **Puducherry** | | | | | | | | | | |
| FFW | 136 | 1790 | 697 | 2487 | 400 | 354 | 754 | 2190 | 1051 | 3241 |
| RY | 11 | 87 | 85 | 172 | 45 | 42 | 87 | 132 | 127 | 259 |
| EF | 7 | 205 | 79 | 284 | 9 | 12 | 21 | 214 | 91 | 305 |
| **Total** | **154** | **2082** | **861** | **2943** | **454** | **408** | **862** | **2536** | **1269** | **3805** |
| Sponsored | 11 | 47 | 176 | 223 | 48 | 94 | 142 | 95 | 270 | 365 |
| Vocational | 7 | 59 | 7 | 66 | 37 | 93 | 130 | 96 | 100 | 196 |
| **Grand Total** | **172** | **2188** | **1044** | **3232** | **539** | **595** | **1134** | **2727** | **1639** | **4366** |
| **Grand total for Zone -X** | | | | | | | | | | |
| FFW | 6520 | 103887 | 59382 | 163269 | 40186 | 34648 | 74834 | 144073 | 94030 | 238103 |
| RY | 1065 | 13628 | 9995 | 23623 | 5336 | 4868 | 10204 | 18964 | 14863 | 33827 |
| EF | 857 | 20901 | 11550 | 32451 | 5061 | 4438 | 9499 | 25962 | 15988 | 41950 |
| **Total** | **8442** | **138416** | **80927** | **219343** | **50583** | **43954** | **94537** | **188999** | **124881** | **313880** |
| Sponsored | 676 | 13676 | 8190 | 21866 | 11343 | 13918 | 25261 | 25019 | 22108 | 47127 |
| Vocational | 371 | 2650 | 2211 | 4861 | 1653 | 2910 | 4563 | 4303 | 5121 | 9424 |
| **Grand Total** | **9489** | **154742** | **91328** | **246070** | **63579** | **60782** | **124361** | **218321** | **152110** | **370431** |

*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 6520 training courses were organized for 238103 farmers in Tamil Nadu, Andhra Pradesh, Telangana, and Puducherry. Among the various thematic areas, 1669 courses were on crop production, 975 on horticulture, 541 on soil health, 606 on livestock, 775 on women empowerment, 127 on agricultural engineering, 928 on plant protection, 153 on fisheries, 296 on production of seeds and other inputs, 347 on capacity building and 103 on agro-forestry.

### 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 | 118 | 2454 | 1203 | **3657** | 610 | 549 | **1159** | **3064** | **1752** | **4816** |
| Cropping systems | 92 | 1685 | 969 | **2654** | 562 | 494 | **1056** | **2247** | **1463** | **3710** |
| Integrated crop management | 551 | 10455 | 4371 | **14826** | 4153 | 2630 | **6783** | **14608** | **7001** | **21609** |
| Integrated farming | 71 | 1309 | 749 | **2058** | 599 | 375 | **974** | **1908** | **1124** | **3032** |
| Integrated nutrient management | 169 | 3573 | 1420 | **4993** | 1288 | 762 | **2050** | **4861** | **2182** | **7043** |
| Micro irrigation/irrigation | 30 | 511 | 261 | **772** | 154 | 164 | **318** | **665** | **425** | **1090** |
| Nursery management | 29 | 691 | 298 | **989** | 319 | 257 | **576** | **1010** | **555** | **1565** |
| Production of organic inputs | 100 | 1663 | 921 | **2584** | 645 | 564 | **1209** | **2308** | **1485** | **3793** |
| Resource conservation technologies | 76 | 2443 | 914 | **3357** | 515 | 347 | **862** | **2958** | **1261** | **4219** |
| Seed production | 96 | 1675 | 1134 | **2809** | 948 | 709 | **1657** | **2623** | **1843** | **4466** |
| Soil & water conservation | 94 | 1675 | 525 | **2200** | 707 | 331 | **1038** | **2382** | **856** | **3238** |
| Weed management | 53 | 975 | 328 | **1303** | 416 | 280 | **696** | **1391** | **608** | **1999** |
| Others | 190 | 3553 | 1183 | **4736** | 1390 | 890 | **2280** | **4943** | **2073** | **7016** |
| **Total of crop production** | **1669** | **32662** | **14276** | **46938** | **12306** | **8352** | **20658** | **44968** | **22628** | **67596** |

| Thematic area | No. of courses | Participants | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Others | | | SC/ST | | | Total | | |
| | | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| **II. Horticulture** | | | | | | | | | | |
| **a) Vegetable crops** | | | | | | | | | | |
| Exotic vegetables | 15 | 152 | 142 | **294** | 59 | 71 | **130** | **211** | **213** | **424** |
| Export potential vegetables | 21 | 374 | 139 | **513** | 50 | 59 | **109** | **424** | **198** | **622** |
| Grading and standardization | 13 | 190 | 104 | **294** | 61 | 34 | **95** | **251** | **138** | **389** |
| Nursery raising | 83 | 1344 | 560 | **1904** | 520 | 308 | **828** | **1864** | **868** | **2732** |
| Off-season vegetables | 36 | 543 | 275 | **818** | 213 | 154 | **367** | **756** | **429** | **1185** |
| Production of low value and high value crops | 52 | 796 | 404 | **1200** | 209 | 129 | **338** | **1005** | **533** | **1538** |
| Protective cultivation | 56 | 797 | 558 | **1355** | 261 | 186 | **447** | **1058** | **744** | **1802** |
| Others in vegetable crop | 34 | 607 | 150 | **757** | 172 | 112 | **284** | **779** | **262** | **1041** |
| Others | 144 | 2142 | 1282 | **3424** | 832 | 569 | **1401** | **2974** | **1851** | **4825** |
| **Total of vegetable crops** | **454** | **6945** | **3614** | **10559** | **2377** | **1622** | **3999** | **9322** | **5236** | **14558** |
| **b) Fruits** | | | | | | | | | | |
| Cultivation of fruit | 70 | 1277 | 491 | **1768** | 318 | 253 | **571** | **1595** | **744** | **2339** |
| Export potential fruits | 4 | 68 | 27 | **95** | 21 | 35 | **56** | **89** | **62** | **151** |
| Layout and management of orchards | 8 | 116 | 44 | **160** | 58 | 48 | **106** | **174** | **92** | **266** |
| Management of young plants/orchards | 20 | 304 | 73 | **377** | 123 | 39 | **162** | **427** | **112** | **539** |
| Micro irrigation systems of orchards | 9 | 189 | 57 | **246** | 28 | 16 | **44** | **217** | **73** | **290** |
| Plant propagation techniques | 21 | 331 | 142 | **473** | 163 | 78 | **241** | **494** | **220** | **714** |
| Rejuvenation of old orchards | 11 | 162 | 73 | **235** | 109 | 49 | **158** | **271** | **122** | **393** |
| Training and pruning | 32 | 570 | 254 | **824** | 191 | 107 | **298** | **761** | **361** | **1122** |
| Others | 32 | 806 | 341 | **1147** | 157 | 107 | **264** | **963** | **448** | **1411** |
| **Total of fruits** | **207** | **3823** | **1502** | **5325** | **1168** | **732** | **1900** | **4991** | **2234** | **7225** |
| **c) Ornamental plants** | | | | | | | | | | |
| Export potential of ornamental plants | 8 | 152 | 64 | **216** | 64 | 53 | **117** | **216** | **117** | **333** |
| Management of potted plants | 1 | 12 | 10 | **22** | 2 | 3 | **5** | **14** | **13** | **27** |
| Nursery management | 43 | 231 | 128 | **359** | 48 | 44 | **92** | **279** | **172** | **451** |
| Propagation techniques of ornamental plants | 12 | 212 | 79 | **291** | 35 | 20 | **55** | **247** | **99** | **346** |
| Others in ornamental plants | 9 | 134 | 73 | **207** | 16 | 8 | **24** | **150** | **81** | **231** |
| Others | 17 | 220 | 64 | **284** | 205 | 128 | **333** | **425** | **192** | **617** |
| **Total in ornamental plants** | **90** | **961** | **418** | **1379** | **370** | **256** | **626** | **1331** | **674** | **2005** |
| **d) Plantation crops** | | | | | | | | | | |
| Processing and value addition | 14 | 208 | 166 | **374** | 67 | 54 | **121** | **275** | **220** | **495** |
| Production and management technology | 71 | 1306 | 503 | **1809** | 362 | 176 | **538** | **1668** | **679** | **2347** |
| Others | 4 | 83 | 12 | **95** | 26 | 16 | **42** | **109** | **28** | **137** |
| **Total of plantation crops** | **89** | **1597** | **681** | **2278** | **455** | **246** | **701** | **2052** | **927** | **2979** |
| **e) Tuber crops** | | | | | | | | | | |
| Processing and value addition | 14 | 168 | 231 | **399** | 63 | 155 | **218** | **231** | **386** | **617** |
| Production and management technology | 23 | 144 | 69 | **213** | 91 | 149 | **240** | **235** | **218** | **453** |
| Others | 0 | 0 | 0 | **0** | 0 | 0 | **0** | **0** | **0** | **0** |
| **Total of tuber crops** | **37** | **312** | **300** | **612** | **154** | **304** | **458** | **466** | **604** | **1070** |
| **f) Spices** | | | | | | | | | | |
| Processing and value addition | 17 | 250 | 180 | **430** | 41 | 90 | **131** | **291** | **270** | **561** |
| Production and management technology | 33 | 602 | 264 | **866** | 296 | 94 | **390** | **898** | **358** | **1256** |
| Others | 7 | 96 | 9 | **105** | 21 | 29 | **50** | **117** | **38** | **155** |
| **Total of spices** | **57** | **948** | **453** | **1401** | **358** | **213** | **571** | **1306** | **666** | **1972** |
| **g) Medicinal and Aromatic Plants** | | | | | | | | | | |
| Nursery management | 8 | 140 | 73 | **213** | 20 | 10 | **30** | **160** | **83** | **243** |
| Post-harvest technology and value addition | 9 | 113 | 74 | **187** | 40 | 56 | **96** | **153** | **130** | **283** |
| Production and management technology | 18 | 283 | 204 | **487** | 32 | 21 | **53** | **315** | **225** | **540** |
| Others | 6 | 46 | 33 | **79** | 22 | 28 | **50** | **68** | **61** | **129** |
| **Total of medicinal plants** | **41** | **582** | **384** | **966** | **114** | **115** | **229** | **696** | **499** | **1195** |
| **Grand total of horticulture** | **975** | **15168** | **7352** | **22520** | **4996** | **3488** | **8484** | **20164** | **10840** | **31004** |
| **III. Soil health and fertility management** | | | | | | | | | | |
| Balance use of fertilizers | 59 | 869 | 376 | **1245** | 299 | 251 | **550** | **1168** | **627** | **1795** |
| Integrated nutrient management | 98 | 1761 | 746 | **2507** | 567 | 430 | **997** | **2328** | **1176** | **3504** |
| Integrated water management | 9 | 129 | 56 | **185** | 91 | 47 | **138** | **220** | **103** | **323** |

| Thematic area | No. of courses | Participants | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Others | | | SC/ST | | | Total | | |
| | | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| Management of problematic soils | 21 | 369 | 144 | **513** | 96 | 76 | **172** | **465** | **220** | **685** |
| Micronutrient deficiency in crops | 24 | 260 | 169 | **429** | 56 | 70 | **126** | **316** | **239** | **555** |
| Nutrient use efficiency | 19 | 208 | 196 | **404** | 76 | 86 | **162** | **284** | **282** | **566** |
| Production and use of organic inputs | 57 | 1205 | 632 | **1837** | 215 | 244 | **459** | **1420** | **876** | **2296** |
| Soil and water testing | 74 | 1123 | 509 | **1632** | 432 | 334 | **766** | **1555** | **843** | **2398** |
| Soil fertility management | 111 | 1843 | 944 | **2787** | 464 | 390 | **854** | **2307** | **1334** | **3641** |
| Others | 69 | 1199 | 529 | **1728** | 528 | 547 | **1075** | **1727** | **1076** | **2803** |
| **Total of soil health** | **541** | **8966** | **4301** | **13267** | **2824** | **2475** | **5299** | **11790** | **6776** | **18566** |
| **IV. Livestock production and management** | | | | | | | | | | |
| Animal nutrition management | 71 | 962 | 556 | **1518** | 354 | 255 | **609** | **1316** | **811** | **2127** |
| Dairy management | 109 | 1587 | 888 | **2475** | 658 | 537 | **1195** | **2245** | **1425** | **3670** |
| Disease management | 80 | 1220 | 687 | **1907** | 677 | 523 | **1200** | **1897** | **1210** | **3107** |
| Feed & fodder technology | 79 | 1078 | 456 | **1534** | 426 | 386 | **812** | **1504** | **842** | **2346** |
| Piggery management | 13 | 255 | 141 | **396** | 62 | 30 | **92** | **317** | **171** | **488** |
| Poultry management | 132 | 1455 | 994 | **2449** | 953 | 945 | **1898** | **2408** | **1939** | **4347** |
| Production of quality animal products | 11 | 134 | 86 | **220** | 100 | 34 | **134** | **234** | **120** | **354** |
| Rabbit management | 7 | 66 | 56 | **122** | 67 | 49 | **116** | **133** | **105** | **238** |
| Goat farming | 67 | 1001 | 518 | **1519** | 423 | 280 | **703** | **1424** | **798** | **2222** |
| Others | 37 | 530 | 501 | **1031** | 210 | 177 | **387** | **740** | **678** | **1418** |
| **Total of livestock** | **606** | **8288** | **4883** | **13171** | **3930** | **3216** | **7146** | **12218** | **8099** | **20317** |
| **V. Home Science/Women empowerment** | | | | | | | | | | |
| Design and development of low/minimum cost diet | 27 | 126 | 488 | **614** | 72 | 393 | **465** | **198** | **881** | **1079** |
| Designing and development for high nutrient efficiency diet | 20 | 83 | 226 | **309** | 43 | 243 | **286** | **126** | **469** | **595** |
| Gender mainstreaming through SHGs | 18 | 42 | 286 | **328** | 3 | 215 | **218** | **45** | **501** | **546** |
| Household food security by kitchen gardening and nutrition gardening | 95 | 801 | 1523 | **2324** | 316 | 1075 | **1391** | **1117** | **2598** | **3715** |
| Location specific drudgery reduction technologies | 26 | 292 | 556 | **848** | 125 | 354 | **479** | **417** | **910** | **1327** |
| Minimization of nutrient loss in processing | 18 | 116 | 286 | **402** | 63 | 197 | **260** | **179** | **483** | **662** |
| Processing and cooking | 37 | 163 | 622 | **785** | 46 | 325 | **371** | **209** | **947** | **1156** |
| Rural Crafts | 8 | 41 | 119 | **160** | 5 | 136 | **141** | **46** | **255** | **301** |
| Storage loss minimization techniques | 25 | 152 | 291 | **443** | 61 | 209 | **270** | **213** | **500** | **713** |
| Value addition | 349 | 2827 | 5609 | **8436** | 818 | 3028 | **3846** | **3645** | **8637** | **12282** |
| Women and childcare | 65 | 299 | 1352 | **1651** | 112 | 739 | **851** | **411** | **2091** | **2502** |
| Women empowerment | 44 | 138 | 857 | **995** | 29 | 662 | **691** | **167** | **1519** | **1686** |
| Others | 43 | 253 | 737 | **990** | 116 | 414 | **530** | **369** | **1151** | **1520** |
| **Total of Home Science** | **775** | **5333** | **12952** | **18285** | **1809** | **7990** | **9799** | **7142** | **20942** | **28084** |
| **VI. Agricultural engineering** | | | | | | | | | | |
| Farm machinery and its maintenance | 62 | 1197 | 421 | **1618** | 372 | 432 | **804** | **1569** | **853** | **2422** |
| Installation and maintenance of micro irrigation systems | 13 | 141 | 88 | **229** | 34 | 22 | **56** | **175** | **110** | **285** |
| Post-harvest technology | 14 | 119 | 120 | **239** | 54 | 45 | **99** | **173** | **165** | **338** |
| Production of small tools and implements | 7 | 133 | 35 | **168** | 43 | 16 | **59** | **176** | **51** | **227** |
| Repair and maintenance of farm machinery and implements | 10 | 192 | 65 | **257** | 96 | 38 | **134** | **288** | **103** | **391** |
| Small scale processing and value addition | 5 | 56 | 42 | **98** | 12 | 26 | **38** | **68** | **68** | **136** |
| Use of plastics in farming practices | 3 | 66 | 34 | **100** | 41 | 17 | **58** | **107** | **51** | **158** |
| Solar powered farm devices | 13 | 232 | 63 | **295** | 77 | 62 | **139** | **309** | **125** | **434** |
| Others | 0 | 0 | 0 | **0** | 0 | 0 | **0** | **0** | **0** | **0** |
| **Total of agricultural engineering** | **127** | **2136** | **868** | **3004** | **729** | **658** | **1387** | **2865** | **1526** | **4391** |
| **VII. Plant protection** | | | | | | | | | | |
| Biocontrol of pests and diseases | 88 | 1494 | 559 | **2053** | 567 | 366 | **933** | **2061** | **925** | **2986** |
| Integrated disease management | 237 | 3577 | 1653 | **5230** | 1746 | 1071 | **2817** | **5323** | **2724** | **8047** |
| Integrated Pest Management | 389 | 7222 | 2988 | **10210** | 3197 | 1775 | **4972** | **10419** | **4763** | **15182** |
| Production of biocontrol agents and bio pesticides | 62 | 1363 | 463 | **1826** | 389 | 305 | **694** | **1752** | **768** | **2520** |
| Seed treatment techniques | 152 | 2684 | 1154 | **3838** | 1344 | 568 | **1912** | **4028** | **1722** | **5750** |
| Storage pest management | 0 | 0 | 0 | **0** | 0 | 0 | **0** | **0** | **0** | **0** |

| 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 plant protection** | **928** | **16340** | **6817** | **23157** | **7243** | **4085** | **11328** | **23583** | **10902** | **34485** |
| **VIII. Fisheries** | | | | | | | | | | |
| Breeding and culture of ornamental fishes | 11 | 134 | 101 | **235** | 54 | 42 | **96** | **188** | **143** | **331** |
| Carp breeding and hatchery management | 2 | 17 | 4 | **21** | 26 | 14 | **40** | **43** | **18** | **61** |
| Carp fry and fingerling rearing | 9 | 134 | 28 | **162** | 69 | 11 | **80** | **203** | **39** | **242** |
| Composite fish culture | 48 | 776 | 256 | **1032** | 274 | 144 | **418** | **1050** | **400** | **1450** |
| Edible oyster farming | 0 | 26 | 4 | **30** | 0 | 0 | **0** | **26** | **4** | **30** |
| Fish processing and value addition | 5 | 63 | 85 | **148** | 3 | 48 | **51** | **66** | **133** | **199** |
| Hatchery management and culture of freshwater prawn | 1 | 30 | 5 | **35** | 0 | 0 | **0** | **30** | **5** | **35** |
| Integrated fish farming | 22 | 283 | 177 | **460** | 115 | 98 | **213** | **398** | **275** | **673** |
| Pearl culture | 0 | 0 | 0 | **0** | 0 | 0 | **0** | **0** | **0** | **0** |
| Pen culture of fish and prawn | 2 | 32 | 9 | **41** | 8 | 0 | **8** | **40** | **9** | **49** |
| Portable plastic carp hatchery | 2 | 34 | 6 | **40** | 36 | 7 | **43** | **70** | **13** | **83** |
| Shrimp farming | 10 | 92 | 28 | **120** | 64 | 58 | **122** | **156** | **86** | **242** |
| Others | 41 | 655 | 257 | **912** | 198 | 113 | **311** | **853** | **370** | **1223** |
| **Total of fisheries** | **153** | **2276** | **960** | **3236** | **847** | **535** | **1382** | **3123** | **1495** | **4618** |
| **IX. Production of inputs at site** | | | | | | | | | | |
| Apiculture | 37 | 625 | 333 | **958** | 296 | 275 | **571** | **921** | **608** | **1529** |
| Bio-agents production | 22 | 505 | 218 | **723** | 209 | 146 | **355** | **714** | **364** | **1078** |
| Bio-fertilizer production | 29 | 510 | 304 | **814** | 277 | 196 | **473** | **787** | **500** | **1287** |
| Bio-pesticides production | 11 | 283 | 173 | **456** | 112 | 101 | **213** | **395** | **274** | **669** |
| Mushroom production | 46 | 491 | 339 | **830** | 241 | 236 | **477** | **732** | **575** | **1307** |
| Organic manures production | 25 | 422 | 280 | **702** | 141 | 111 | **252** | **563** | **391** | **954** |
| Planting material production | 12 | 246 | 99 | **345** | 82 | 56 | **138** | **328** | **155** | **483** |
| Production of bee-colonies and wax sheets | 3 | 59 | 2 | **61** | 32 | 8 | **40** | **91** | **10** | **101** |
| Production of fish feed | 2 | 19 | 25 | **44** | 31 | 0 | **31** | **50** | **25** | **75** |
| Production of fry and fingerlings | 0 | 0 | 0 | **0** | 0 | 0 | **0** | **0** | **0** | **0** |
| Production of livestock feed and fodder | 15 | 202 | 149 | **351** | 90 | 80 | **170** | **292** | **229** | **521** |
| Seed production | 25 | 497 | 131 | **628** | 124 | 51 | **175** | **621** | **182** | **803** |
| Small tools and implements | 5 | 55 | 7 | **62** | 48 | 26 | **74** | **103** | **33** | **136** |
| Vermicompost production | 56 | 879 | 589 | **1468** | 336 | 353 | **689** | **1215** | **942** | **2157** |
| Others | 8 | 180 | 40 | **220** | 45 | 10 | **55** | **225** | **50** | **275** |
| **Total of inputs** | **296** | **4973** | **2689** | **7662** | **2064** | **1649** | **3713** | **7037** | **4338** | **11375** |
| **X. Capacity building and group dynamics** | | | | | | | | | | |
| Entrepreneurial development of farmers/youths | 85 | 1243 | 646 | **1889** | 501 | 312 | **813** | **1744** | **958** | **2702** |
| Formation and management of SHGs | 23 | 321 | 238 | **559** | 167 | 133 | **300** | **488** | **371** | **859** |
| Group dynamics | 34 | 440 | 346 | **786** | 266 | 214 | **480** | **706** | **560** | **1266** |
| Leadership development | 18 | 189 | 68 | **257** | 73 | 85 | **158** | **262** | **153** | **415** |
| Mobilization of social capital | 12 | 203 | 112 | **315** | 29 | 13 | **42** | **232** | **125** | **357** |
| WTO and IPR issues | 1 | 14 | 7 | **21** | 6 | 4 | **10** | **20** | **11** | **31** |
| Others | 174 | 4025 | 2215 | **6240** | 1786 | 1056 | **2842** | **5811** | **3271** | **9082** |
| **Total of capacity building** | **347** | **6435** | **3632** | **10067** | **2828** | **1817** | **4645** | **9263** | **5449** | **14712** |
| **XI Agro-forestry** | | | | | | | | | | |
| Integrated Farming Systems | 32 | 453 | 257 | **710** | 214 | 121 | **335** | **667** | **378** | **1045** |
| Nursery management | 13 | 222 | 108 | **330** | 41 | 25 | **66** | **263** | **133** | **396** |
| Production technologies | 17 | 250 | 72 | **322** | 58 | 34 | **92** | **308** | **106** | **414** |
| Others in agroforestry | 7 | 97 | 38 | **135** | 56 | 37 | **93** | **153** | **75** | **228** |
| Others | 34 | 288 | 177 | **465** | 241 | 166 | **407** | **529** | **343** | **872** |
| **Total of agroforestry** | **103** | **1310** | **652** | **1962** | **610** | **383** | **993** | **1920** | **1035** | **2955** |
| **Grand total** | **6520** | **103887** | **59382** | **163269** | **40186** | **34648** | **74834** | **144073** | **94030** | **238103** |

### 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 1065 courses were organized for 33827 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 3.3.4).

**Table 3.3.4. 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 |
| Bee-keeping | 75 | 976 | 664 | 1640 | 445 | 260 | 705 | 1421 | 924 | 2345 |
| Cold water fisheries | 1 | 0 | 6 | 6 | 0 | 24 | 24 | 0 | 30 | 30 |
| Commercial fruit production | 16 | 241 | 114 | 355 | 96 | 59 | 155 | 337 | 173 | 510 |
| Composite fish culture | 13 | 128 | 89 | 217 | 144 | 58 | 202 | 272 | 147 | 419 |
| Dairying | 20 | 192 | 127 | 319 | 51 | 90 | 141 | 243 | 217 | 460 |
| Fish harvest and processing technology | 3 | 26 | 26 | 52 | 10 | 9 | 19 | 36 | 35 | 71 |
| Freshwater prawn culture | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fry and fingerling rearing | 1 | 15 | 5 | 20 | 3 | 2 | 5 | 18 | 7 | 25 |
| Integrated farming | 72 | 1343 | 657 | 2000 | 534 | 315 | 849 | 1877 | 972 | 2849 |
| Mushroom Production | 104 | 938 | 730 | 1668 | 439 | 349 | 788 | 1377 | 1079 | 2456 |
| Nursery Management of Horticulture crops | 80 | 1069 | 627 | 1696 | 409 | 254 | 663 | 1478 | 881 | 2359 |
| Ornamental fisheries | 4 | 33 | 39 | 72 | 15 | 24 | 39 | 48 | 63 | 111 |
| Pearl culture | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Piggery | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Planting material production | 25 | 376 | 168 | 544 | 84 | 70 | 154 | 460 | 238 | 698 |
| Post Harvest Technology | 26 | 276 | 299 | 575 | 75 | 117 | 192 | 351 | 416 | 767 |
| Poultry production | 34 | 420 | 302 | 722 | 207 | 163 | 370 | 627 | 465 | 1092 |
| Production of organic inputs | 58 | 986 | 683 | 1669 | 311 | 227 | 538 | 1297 | 910 | 2207 |
| Production of quality animal products | 6 | 64 | 23 | 87 | 17 | 15 | 32 | 81 | 38 | 119 |
| Protected cultivation of vegetable crops | 25 | 398 | 193 | 591 | 121 | 82 | 203 | 519 | 275 | 794 |
| Quail farming | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rabbit farming | 2 | 27 | 4 | 31 | 5 | 0 | 5 | 32 | 4 | 36 |
| Repair and maintenance of farm machinery and implements | 10 | 192 | 59 | 251 | 54 | 30 | 84 | 246 | 89 | 335 |
| Rural Crafts | 8 | 50 | 260 | 310 | 12 | 93 | 105 | 62 | 353 | 415 |
| Seed production | 39 | 766 | 290 | 1056 | 187 | 96 | 283 | 953 | 386 | 1339 |
| Sericulture | 12 | 223 | 141 | 364 | 52 | 65 | 117 | 275 | 206 | 481 |
| Sheep and goat rearing | 24 | 281 | 179 | 460 | 142 | 100 | 242 | 423 | 279 | 702 |
| Shrimp farming | 3 | 17 | 6 | 23 | 22 | 13 | 35 | 39 | 19 | 58 |
| Small scale processing | 3 | 22 | 60 | 82 | 13 | 36 | 49 | 35 | 96 | 131 |
| Tailoring and Stitching | 3 | 2 | 86 | 88 | 4 | 54 | 58 | 6 | 140 | 146 |
| Training and pruning of orchards | 14 | 345 | 84 | 429 | 103 | 31 | 134 | 448 | 115 | 563 |
| Value addition | 152 | 1260 | 2017 | 3277 | 468 | 1194 | 1662 | 1728 | 3211 | 4939 |
| Vermi-culture / Vermicomposting | 53 | 883 | 490 | 1373 | 365 | 226 | 591 | 1248 | 716 | 1964 |
| SRI production technologies | 1 | 23 | 0 | 23 | 0 | 0 | 0 | 23 | 0 | 23 |

| Area of training | No. of courses | Participants | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Others | | | SC/ST | | | Grand Total | | |
| | | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| Nutrient management in pandal cultivated crops | 17 | 319 | 173 | 492 | 88 | 53 | 141 | 407 | 226 | 633 |
| Bio-floc fish farming | 8 | 117 | 32 | 149 | 55 | 31 | 86 | 172 | 63 | 235 |
| Others | 153 | 1620 | 1362 | 2982 | 805 | 728 | 1533 | 2425 | 2090 | 4515 |
| Total | **1065** | **13628** | **9995** | **23623** | **5336** | **4868** | **10204** | **18964** | **14863** | **33827** |

### 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 857 training courses were conducted in which 41950 Extension Functionaries participated and benefited (Table 3.3.5). Among various areas of training, the highest number of 141 training courses were conducted on integrated pest management followed by integrated nutrient management (113).

**Table 3.3.5. 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 | 61 | 1361 | 729 | 2090 | 345 | 292 | 637 | 1706 | 1021 | 2727 |
| Care & maintenance of farm machinery & implements | 18 | 543 | 179 | 722 | 125 | 67 | 192 | 668 | 246 | 914 |
| Formation and Management of SHGs | 28 | 330 | 389 | 719 | 101 | 234 | 335 | 431 | 623 | 1054 |
| Gender mainstreaming through SHGs | 13 | 21 | 307 | 328 | 20 | 174 | 194 | 41 | 481 | 522 |
| Group Dynamics and farmers organization | 30 | 807 | 356 | 1163 | 170 | 113 | 283 | 977 | 469 | 1446 |
| Household and Food Security | 28 | 280 | 514 | 794 | 48 | 306 | 354 | 328 | 820 | 1148 |
| Information networking among farmers | 10 | 252 | 94 | 346 | 88 | 105 | 193 | 340 | 199 | 539 |
| Integrated Nutrient management | 113 | 4410 | 1990 | 6400 | 975 | 722 | 1697 | 5385 | 2712 | 8097 |
| Integrated Pest Management | 141 | 4390 | 1510 | 5900 | 1122 | 450 | 1572 | 5512 | 1960 | 7472 |
| Livestock feed and fodder production | 33 | 742 | 245 | 987 | 176 | 140 | 316 | 918 | 385 | 1303 |
| Low cost and nutrient efficient diet designing | 18 | 150 | 293 | 443 | 63 | 149 | 212 | 213 | 442 | 655 |
| Management in farm animals | 13 | 311 | 113 | 424 | 116 | 51 | 167 | 427 | 164 | 591 |
| Production and use of organic inputs | 49 | 1445 | 559 | 2004 | 340 | 281 | 621 | 1785 | 840 | 2625 |
| Productivity enhancement in field crops | 72 | 1405 | 698 | 2103 | 264 | 161 | 425 | 1669 | 859 | 2528 |
| Protected cultivation technology | 19 | 330 | 165 | 495 | 69 | 74 | 143 | 399 | 239 | 638 |
| Rejuvenation of old orchards | 13 | 574 | 161 | 735 | 89 | 40 | 129 | 663 | 201 | 864 |
| Women and Child care | 45 | 246 | 1349 | 1595 | 111 | 451 | 562 | 357 | 1800 | 2157 |
| Integrated farming system | 30 | 634 | 441 | 1075 | 201 | 189 | 390 | 835 | 630 | 1465 |

| Area of training | No. of courses | Participants | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Others | | | SC/ST | | | Grand Total | | |
| | | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| Preparation of bankable projects | 11 | 109 | 95 | 204 | 19 | 22 | 41 | 128 | 117 | 245 |
| Cage fish culture | 5 | 212 | 113 | 325 | 86 | 122 | 208 | 298 | 235 | 533 |
| Otthers | 107 | 2349 | 1250 | 3599 | 533 | 295 | 828 | 2882 | 1545 | 4427 |
| **Total** | **857** | **20901** | **11550** | **32451** | **5061** | **4438** | **9499** | **25962** | **15988** | **41950** |

### 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 676 sponsored training programmes were conducted for 47127 youth in Zone-X (Table 3.3.6). A maximum number of courses were conducted on crop production and management (350) followed by production and value addition (111), Livestock and fisheries (96), Home science (41), Post harvest technology (31) and Agricultural extension (28) (Table 3.3.7).

**Table 3.3.6. 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 | 419 | 7589 | 5233 | 12822 | 7443 | 11613 | 19056 | 15032 | 16846 | 31878 |
| Andhra Pradesh | 189 | 5358 | 2499 | 7857 | 2637 | 1588 | 4225 | 7995 | 4087 | 12082 |
| Telangana | 57 | 682 | 282 | 964 | 1215 | 623 | 1838 | 1897 | 905 | 2802 |
| Puducherry | 11 | 47 | 176 | 223 | 48 | 94 | 142 | 95 | 270 | 365 |
| **Total** | **676** | **13676** | **8190** | **21866** | **11343** | **13918** | **25261** | **25019** | **22108** | **47127** |

**Table 3.3.7. 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 | 13 | 353 | 129 | 482 | 140 | 61 | 201 | 493 | 190 | 683 |
| Increasing production and productivity of crops | 103 | 4485 | 1196 | 5681 | 1036 | 394 | 1430 | 5521 | 1590 | 7111 |
| Others | 234 | 3938 | 2979 | 6917 | 7086 | 10839 | 17925 | 11024 | 13818 | 24842 |
| **Total crop production trainings** | **350** | **8776** | **4304** | **13080** | **8262** | **11294** | **19556** | **17038** | **15598** | **32636** |
| **Production and value addition** | | | | | | | | | | |
| Fruit plants | 30 | 419 | 354 | 773 | 57 | 49 | 106 | 476 | 403 | 879 |
| Methods of protective cultivation | 9 | 145 | 61 | 206 | 20 | 24 | 44 | 165 | 85 | 250 |
| Ornamental plants | 1 | 15 | 6 | 21 | 1 | 3 | 4 | 16 | 9 | 25 |
| Production of Inputs at site | 7 | 170 | 57 | 227 | 49 | 23 | 72 | 219 | 80 | 299 |
| Soil health and fertility management | 37 | 725 | 308 | 1033 | 318 | 169 | 487 | 1043 | 477 | 1520 |
| Spices crops | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Others | 27 | 282 | 252 | 534 | 110 | 148 | 258 | 392 | 400 | 792 |
| **Total Production and value Addition Trainings** | **111** | **1756** | **1038** | **2794** | **555** | **416** | **971** | **2311** | **1454** | **3765** |

| 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 | 24 | 295 | 244 | 539 | 125 | 272 | 397 | 420 | 516 | 936 |
| Others | 7 | 3 | 19 | 22 | 156 | 134 | 290 | 159 | 153 | 312 |
| **Total PHT and VA** | **31** | **298** | **263** | **561** | **281** | **406** | **687** | **579** | **669** | **1248** |
| **Farm Machinery** | | | | | | | | | | |
| Farm machinery, tools and implements | 13 | 264 | 157 | 421 | 82 | 65 | 147 | 346 | 222 | 568 |
| Others | 6 | 130 | 76 | 206 | 22 | 11 | 33 | 152 | 87 | 239 |
| **Total FM** | **19** | **394** | **233** | **627** | **104** | **76** | **180** | **498** | **309** | **807** |
| **Livestock and fisheries** | | | | | | | | | | |
| Animal Disease Management | 15 | 232 | 92 | 324 | 92 | 165 | 257 | 324 | 257 | 581 |
| Animal Nutrition Management | 11 | 317 | 314 | 631 | 76 | 64 | 140 | 393 | 378 | 771 |
| Fisheries Management | 11 | 159 | 50 | 209 | 85 | 46 | 131 | 244 | 96 | 340 |
| Fisheries Nutrition | 2 | 24 | 33 | 57 | 5 | 12 | 17 | 29 | 45 | 74 |
| Livestock production and management | 19 | 224 | 276 | 500 | 63 | 152 | 215 | 287 | 428 | 715 |
| Integrated farming | 19 | 236 | 171 | 407 | 101 | 168 | 269 | 337 | 339 | 676 |
| Others | 19 | 282 | 78 | 360 | 119 | 121 | 240 | 401 | 199 | 600 |
| **Total LS and F** | **96** | **1474** | **1014** | **2488** | **541** | **728** | **1269** | **2015** | **1742** | **3757** |
| **Home Science** | | | | | | | | | | |
| Drudgery reduction of women | 4 | 37 | 43 | 80 | 4 | 11 | 15 | 41 | 54 | 95 |
| Economic empowerment of women | 6 | 48 | 101 | 149 | 35 | 67 | 102 | 83 | 168 | 251 |
| Household nutritional security | 9 | 86 | 543 | 629 | 140 | 200 | 340 | 226 | 743 | 969 |
| Others | 22 | 99 | 345 | 444 | 18 | 116 | 134 | 117 | 461 | 578 |
| **Total HS** | **41** | **270** | **1032** | **1302** | **197** | **394** | **591** | **467** | **1426** | **1893** |
| **Agricultural Extension** | | | | | | | | | | |
| Capacity Building and Group Dynamics | 17 | 440 | 171 | 611 | 74 | 37 | 111 | 514 | 208 | 722 |
| Others | 11 | 268 | 135 | 403 | 1329 | 567 | 1896 | 1597 | 702 | 2299 |
| **Total AE** | **28** | **708** | **306** | **1014** | **1403** | **604** | **2007** | **2111** | **910** | **3021** |
| **Grand Total** | **676** | **13676** | **8190** | **21866** | **11343** | **13918** | **25261** | **25019** | **22108** | **47127** |

### 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 **371** vocational training courses were conducted in which **9424** farmers, women, rural youth, and extension functionaries participated (Table 3.3.8) in Zone X. Maximum number of courses were conducted on income generation activities (**129**) followed by crop production and management (**113**), post-harvest technologies value addition (**81**), Livestock and fisheries (**46**), *etc.* (Table 3.3.9).

## Table 3.3.8. 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 | 149 | 1415 | 1277 | 2692 | 579 | 778 | 1357 | 1994 | 2055 | 4049 |
| Andhra Pradesh | 188 | 951 | 816 | 1767 | 827 | 1801 | 2628 | 1778 | 2617 | 4395 |
| Telangana | 27 | 225 | 111 | 336 | 210 | 238 | 448 | 435 | 349 | 784 |
| Puducherry | 7 | 59 | 7 | 66 | 37 | 93 | 130 | 96 | 100 | 196 |
| **Total** | **371** | **2650** | **2211** | **4861** | **1653** | **2910** | **4563** | **4303** | **5121** | **9424** |

## Table 3.3.9. 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 | 8 | 34 | 24 | 58 | 5 | 2 | 7 | 39 | 26 | 65 |
| Commercial fruit production | 12 | 39 | 88 | 127 | 8 | 9 | 17 | 47 | 97 | 144 |
| Commercial vegetable production | 10 | 96 | 82 | 178 | 74 | 64 | 138 | 170 | 146 | 316 |
| Integrated crop management | 10 | 140 | 70 | 210 | 33 | 27 | 60 | 173 | 97 | 270 |
| Organic farming | 24 | 150 | 92 | 242 | 105 | 87 | 192 | 255 | 179 | 434 |
| Others | 49 | 585 | 303 | 888 | 505 | 340 | 845 | 1090 | 643 | 1733 |
| **Total CPM** | **113** | **1044** | **659** | **1703** | **730** | **529** | **1259** | **1774** | **1188** | **2962** |
| **Post-harvest technology and value addition** | | | | | | | | | | |
| Value addition | 51 | 175 | 540 | 715 | 148 | 490 | 638 | 323 | 1030 | 1353 |
| Others | 30 | 0 | 180 | 180 | 87 | 1048 | 1135 | 87 | 1228 | 1315 |
| **Total PHT and VA** | **81** | **175** | **720** | **895** | **235** | **1538** | **1773** | **410** | **2258** | **2668** |
| **Livestock and fisheries** | | | | | | | | | | |
| Composite fish culture | 9 | 101 | 33 | 134 | 74 | 15 | 89 | 175 | 48 | 223 |
| Dairy farming | 8 | 185 | 86 | 271 | 12 | 46 | 58 | 197 | 132 | 329 |
| Piggery | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Poultry farming | 4 | 43 | 28 | 71 | 30 | 17 | 47 | 73 | 45 | 118 |
| Sheep and goat rearing | 6 | 57 | 22 | 79 | 22 | 40 | 62 | 79 | 62 | 141 |
| Others | 19 | 80 | 111 | 191 | 186 | 151 | 337 | 266 | 262 | 528 |
| **Total LS and F** | **46** | **466** | **280** | **746** | **324** | **269** | **593** | **790** | **549** | **1339** |
| **Income generation activities** | | | | | | | | | | |
| Agril. para-workers, para-vet training | 1 | 0 | 0 | 0 | 3 | 16 | 19 | 3 | 16 | 19 |
| Implements | 8 | 30 | 3 | 33 | 18 | 7 | 25 | 48 | 10 | 58 |
| Bio-fertilizers | 8 | 10 | 7 | 17 | 11 | 32 | 43 | 21 | 39 | 60 |
| Mushroom cultivation | 10 | 172 | 65 | 237 | 53 | 39 | 92 | 225 | 104 | 329 |

| Area of training | No. of courses | Participants | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Others | | | SC/ST | | | Grand Total | | |
| | | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| Nursery, grafting | 14 | 76 | 70 | 146 | 19 | 48 | 67 | 95 | 118 | 213 |
| Production of bio-agents, bio-pesticides | 13 | 139 | 47 | 186 | 37 | 17 | 54 | 176 | 64 | 240 |
| Repair and maintenance of farm machinery | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rural Crafts | 3 | 3 | 35 | 38 | 0 | 3 | 3 | 3 | 38 | 41 |
| Seed production | 5 | 42 | 79 | 121 | 10 | 21 | 31 | 52 | 100 | 152 |
| Sericulture | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tailoring, stitching, embroidery, dying | 4 | 24 | 32 | 56 | 8 | 115 | 123 | 32 | 147 | 179 |
| Vermicomposting | 15 | 98 | 88 | 186 | 85 | 85 | 170 | 183 | 173 | 356 |
| Others | 48 | 371 | 126 | 497 | 100 | 181 | 281 | 471 | 307 | 778 |
| **Total IGA** | **129** | **965** | **552** | **1517** | **344** | **564** | **908** | **1309** | **1116** | **2425** |
| **Agricultural Extension** | | | | | | | | | | |
| Capacity building and group dynamics | 2 | 0 | 0 | 0 | 20 | 10 | 30 | 20 | 10 | 30 |
| Others | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total AE** | **2** | **0** | **0** | **0** | **20** | **10** | **30** | **20** | **10** | **30** |
| **Grand Total** | **371** | **2650** | **2211** | **4861** | **1653** | **2910** | **4563** | **4303** | **5121** | **9424** |


**Demonstration on Banana Sakthi micro nutrients mixture- KVK, Thiruvarur, Tamil Nadu**


**Drone Seeding in paddy - KVK, Trichi , Tamil Nadu**

**Farmers Training on ICM in Coconut - KVK, Coiumbatore , Tamil Nadu**


**Fish cutlet preparation - KVK, Toothukkudi , Tamil Nadu**

**Off campus training on IPDM in Mango - KVK, Theni, Tamil Nadu**

**Off campus training on Usage of Organic inputs in Brinjal - KVK, Karaikal, Puducherry**

On campus Bee keeping training - KVK, Madurai, Tamil Nadu


On campus training on Mushroom cultivation - KVK, Cuddalore , Tamil Nadu

Training on goat rearing - KVK, Rangareddy, Tamil Nadu


**Training on drudgery reduction implements - KVK, Dindigul, Tamil Nadu**

**Training on natural farming input preparation - KVK, Medak (DDS), Telangana**

**Training on vegetable cultivation - KVK, Dindigul - Tamil Nadu**


**Value addition using solar dryer - KVK, Theni, Tamil Nadu**

**Vocational training on mushroom cultivation - KVK, Thiruvannamalai , Tamil Nadu**


**Vocational training on value addition to banana fibre - KVK, Theni, Tamil Nadu**

## 3.4. Extension Activities

KVKs organized 48804 extension activities for creating awareness about latest improved agricultural technologies in which 4154945 farmers and 60149 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 26773 extension activities for 1705770 farmers and Extension Personnel (Table 3.4.3). KVKs in Andhra Pradesh organized 9381 extension activities in which 491472 persons participated (Table 3.4.4). In Telangana, 12107 activities were organized for 1814853 participants (Table 3.4.5). In Puducherry 543 extension activities were organized for 142850 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 | 26773 | 1705770 | 26889 | 1732659 |
| Andhra Pradesh | 9381 | 491472 | 27266 | 518738 |
| Telangana | 12107 | 1814853 | 5198 | 1820051 |
| Puducherry | 543 | 142850 | 796 | 143646 |
| **Total** | **48804** | **4154945** | **60149** | **4215094** |

**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 | 21679 | 1938199 | 1760 | 6121 | 23439 | 1944320 |
| Attended as resource person | 3105 | 126068 | 408 | 9569 | 3513 | 135637 |
| Awareness programmes on PPV & FRA | 79 | 4562 | 20 | 350 | 99 | 4912 |
| Celebration of important days | 707 | 70182 | 82 | 1783 | 789 | 71965 |
| Diagnostic visits | 3530 | 28767 | 693 | 2463 | 4223 | 31230 |
| Exhibition | 459 | 431440 | 758 | 4454 | 1217 | 435894 |
| Exposure visits | 460 | 20229 | 54 | 970 | 514 | 21199 |
| Ex-trainees Sammelan | 16 | 548 | 1 | 20 | 17 | 568 |
| Farm Science Club | 105 | 3685 | 1 | 49 | 106 | 3734 |
| Farmers' seminar/workshop | 168 | 26362 | 96 | 1222 | 264 | 27584 |
| Field Day | 529 | 19600 | 319 | 2116 | 848 | 21716 |
| Film Show | 1022 | 119924 | 64 | 1028 | 1086 | 120952 |
| Group discussions | 1404 | 29360 | 443 | 2766 | 1847 | 32126 |
| Kisan Ghosthi | 162 | 12335 | 162 | 708 | 324 | 13043 |
| Kisan Mela | 165 | 157933 | 309 | 4092 | 474 | 162025 |
| Mana Telangana – Mana Vyavasayam | 4 | 153 | 0 | 15 | 4 | 168 |
| Method Demonstrations | 2297 | 70389 | 399 | 2400 | 2696 | 72789 |
| Plant/animal health camps | 220 | 34398 | 83 | 2287 | 303 | 36685 |
| Scientists' visit to farmers field | 7136 | 54980 | 416 | 2725 | 7552 | 57705 |
| Self -help groups | 319 | 7417 | 6 | 133 | 325 | 7550 |
| Special day celebration | 692 | 76104 | 216 | 1572 | 908 | 77676 |
| Others | 4546 | 922310 | 1011 | 13306 | 5557 | 935616 |
| **Total** | **48804** | **4154945** | **7301** | **60149** | **56105** | **4215094** |

### 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 | 12365 | 114676 | 160 | 1303 | 12525 | 115979 |
| Attended as resource person | 2209 | 73380 | 209 | 2950 | 2418 | 76330 |
| Awareness programmes on PPV & FRA | 26 | 3045 | 8 | 28 | 34 | 3073 |
| Celebration of important days | 239 | 33310 | 44 | 879 | 283 | 34189 |
| Diagnostic visits | 1438 | 8774 | 252 | 757 | 1690 | 9531 |
| Exhibition | 273 | 242576 | 82 | 1574 | 355 | 244150 |
| Exposure visits | 292 | 12240 | 15 | 179 | 307 | 12419 |
| Ex-trainees Sammelan | 12 | 366 | 1 | 20 | 13 | 386 |
| Farm Science Club | 61 | 1669 | 0 | 25 | 61 | 1694 |
| Farmers' seminar/workshop | 94 | 21018 | 9 | 362 | 103 | 21380 |
| Field Day | 229 | 7165 | 21 | 223 | 250 | 7388 |
| Film Show | 877 | 112488 | 43 | 402 | 920 | 112890 |
| Group discussions | 394 | 10640 | 78 | 1168 | 472 | 11808 |
| Kisan Ghosthi | 65 | 6817 | 20 | 185 | 85 | 7002 |
| Kisan Mela | 83 | 24912 | 18 | 283 | 101 | 25195 |
| Mana Telangana – Mana Vyavasayam | 1 | 110 | 0 | 15 | 1 | 125 |
| Method Demonstrations | 1299 | 49452 | 74 | 694 | 1373 | 50146 |
| Plant/animal health camps | 119 | 29070 | 14 | 1932 | 133 | 31002 |
| Scientists' visit to farmers field | 2818 | 19431 | 245 | 763 | 3063 | 20194 |
| Self -help groups | 181 | 3283 | 3 | 43 | 184 | 3326 |
| Special day celebration | 346 | 46946 | 64 | 387 | 410 | 47333 |
| Others | 3352 | 884402 | 982 | 12717 | 4334 | 897119 |
| **Total** | **26773** | **1705770** | **2342** | **26889** | **29115** | **1732659** |

### 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 | 1557 | 201601 | 1400 | 3641 | 2957 | 205242 |
| Attended as resource person | 392 | 23253 | 164 | 5156 | 556 | 28409 |
| Awareness programmes on PPV & FRA | 16 | 356 | 3 | 126 | 19 | 482 |
| Celebration of important days | 306 | 19577 | 34 | 787 | 340 | 20364 |
| Diagnostic visits | 1419 | 13387 | 376 | 1451 | 1795 | 14838 |
| Exhibition | 92 | 28125 | 666 | 2703 | 758 | 30828 |
| Exposure visits | 103 | 5936 | 29 | 499 | 132 | 6435 |
| Ex-trainees Sammelan | 0 | 0 | 0 | 0 | 0 | 0 |
| Farm Science Club | 42 | 1968 | 0 | 0 | 42 | 1968 |
| Farmers' seminar/workshop | 46 | 1520 | 82 | 808 | 128 | 2328 |
| Field Day | 191 | 6296 | 282 | 1695 | 473 | 7991 |
| Film Show | 62 | 3374 | 18 | 385 | 80 | 3759 |
| Group discussions | 566 | 8344 | 313 | 1381 | 879 | 9725 |
| Kisan Ghosthi | 69 | 1831 | 137 | 468 | 206 | 2299 |
| Kisan Mela | 34 | 118049 | 282 | 3307 | 316 | 121356 |
| Mana Telangana – Mana Vyavasayam | 2 | 21 | 0 | 0 | 2 | 21 |
| Method Demonstrations | 684 | 13640 | 310 | 1559 | 994 | 15199 |

| Activities | No. of programmes to Farmers | No. of farmers | No. of programmes to Extension Personnel | No. of Extension Personnel | Total Programmes | Total Participants |
|---|---|---|---|---|---|---|
| Plant/animal health camps | 78 | 3787 | 64 | 300 | 142 | 4087 |
| Scientists' visit to farmers field | 2414 | 17418 | 104 | 1735 | 2518 | 19153 |
| Self -help groups | 107 | 2745 | 3 | 90 | 110 | 2835 |
| Special day celebration | 196 | 9461 | 140 | 1086 | 336 | 10547 |
| Others | 1005 | 10783 | 19 | 89 | 1024 | 10872 |
| **Total** | **9381** | **491472** | **4426** | **27266** | **13807** | **518738** |

## 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 | 7667 | 1621683 | 199 | 1172 | 7866 | 1622855 |
| Attended as resource person | 401 | 24845 | 34 | 1413 | 435 | 26258 |
| Awareness programmes on PPV & FRA | 37 | 1161 | 9 | 196 | 46 | 1357 |
| Celebration of important days | 153 | 16783 | 4 | 117 | 157 | 16900 |
| Diagnostic visits | 650 | 6370 | 65 | 255 | 715 | 6625 |
| Exhibition | 79 | 49538 | 10 | 177 | 89 | 49715 |
| Exposure visits | 64 | 2003 | 10 | 292 | 74 | 2295 |
| Ex-trainees Sammelan | 4 | 182 | 0 | 0 | 4 | 182 |
| Farm Science Club | 2 | 48 | 1 | 24 | 3 | 72 |
| Farmers' seminar/workshop | 26 | 3577 | 5 | 52 | 31 | 3629 |
| Field Day | 101 | 5891 | 16 | 198 | 117 | 6089 |
| Film Show | 31 | 2248 | 0 | 0 | 31 | 2248 |
| Group discussions | 437 | 10260 | 52 | 217 | 489 | 10477 |
| Kisan Ghosthi | 26 | 3401 | 5 | 55 | 31 | 3456 |
| Kisan Mela | 48 | 14972 | 9 | 502 | 57 | 15474 |
| Mana Telangana – Mana Vyavasayam | 1 | 22 | 0 | 0 | 1 | 22 |
| Method Demonstrations | 269 | 6360 | 13 | 104 | 282 | 6464 |
| Plant/animal health camps | 23 | 1541 | 5 | 55 | 28 | 1596 |
| Scientists' visit to farmers field | 1784 | 17652 | 67 | 227 | 1851 | 17879 |
| Self -help groups | 28 | 1374 | 0 | 0 | 28 | 1374 |
| Special day celebration | 146 | 19552 | 12 | 99 | 158 | 19651 |
| Others | 130 | 5390 | 0 | 43 | 130 | 5433 |
| **Total** | **12107** | **1814853** | **516** | **5198** | **12623** | **1820051** |

## 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 | 90 | 239 | 1 | 5 | 91 | 244 |
| Attended as resource person | 103 | 4590 | 1 | 50 | 104 | 4640 |
| Awareness programmes on PPV & FRA | 0 | 0 | 0 | 0 | 0 | 0 |
| Celebration of important days | 9 | 512 | 0 | 0 | 9 | 512 |
| Diagnostic visits | 23 | 236 | 0 | 0 | 23 | 236 |

| Activities | No. of programmes to Farmers | No. of farmers | No. of programmes to Extension Personnel | No. of Extension Personnel | Total Programmes | Total Participants |
|---|---|---|---|---|---|---|
| Exhibition | 15 | 111201 | 0 | 0 | 15 | 111201 |
| Exposure visits | 1 | 50 | 0 | 0 | 1 | 50 |
| Ex-trainees Sammelan | 0 | 0 | 0 | 0 | 0 | 0 |
| Farm Science Club | 0 | 0 | 0 | 0 | 0 | 0 |
| Farmers' seminar/workshop | 2 | 247 | 0 | 0 | 2 | 247 |
| Field Day | 8 | 248 | 0 | 0 | 8 | 248 |
| Film Show | 52 | 1814 | 3 | 241 | 55 | 2055 |
| Group discussions | 7 | 116 | 0 | 0 | 7 | 116 |
| Kisan Goshthi | 2 | 286 | 0 | 0 | 2 | 286 |
| Kisan Mela | 0 | 0 | 0 | 0 | 0 | 0 |
| Mana Telangana – Mana Vyavasayam | 0 | 0 | 0 | 0 | 0 | 0 |
| Method Demonstrations | 45 | 937 | 2 | 43 | 47 | 980 |
| Plant/animal health camps | 0 | 0 | 0 | 0 | 0 | 0 |
| Scientists' visit to farmers field | 120 | 479 | 0 | 0 | 120 | 479 |
| Self -help groups | 3 | 15 | 0 | 0 | 3 | 15 |
| Special day celebration | 4 | 145 | 0 | 0 | 4 | 145 |
| Others | 59 | 21735 | 10 | 457 | 69 | 22192 |
| **Total** | **543** | **142850** | **17** | **796** | **560** | **143646** |

### 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) | 1092 |
| Bimonthly Newsletters (English, Tamil and Telugu) | 145 |
| Electronic Media (CD/DVD) | 62 |
| Exhibitions | 1217 |
| Extension Literature | 740 |
| Farmers visit to KVK | 25822 |
| Kisan melas | 474 |
| Lectures delivered as resource persons | 2929 |
| Newspaper coverage | 5687 |
| Popular articles | 1096 |
| Radio Talks | 559 |
| Registration of farmers through AKPS | 25899 |
| Research articles | 389 |
| Success stories | 464 |
| TV Talks | 672 |
| Others | 863 |
| **Total** | **68110** |

### 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) | 72 |
| Bimonthly Newsletters (English, Tamil and Telugu) | 62 |
| Electronic Media (CD/DVD) | 28 |
| Exhibitions | 355 |
| Extension Literature | 457 |
| Farmers visit to KVK | 11508 |
| Kisan melas | 101 |
| Lectures delivered as resource persons | 2024 |
| Newspaper coverage | 1277 |
| Popular articles | 466 |
| Radio Talks | 300 |
| Registration of farmers through AKPS | 287 |
| Research articles | 213 |
| Success stories | 256 |
| TV Talks | 257 |
| Others | 535 |
| **Total** | **18198** |

### 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) | 994 |
| Bimonthly Newsletters (English, Tamil and Telugu) | 57 |
| Electronic Media (CD/DVD) | 24 |
| Exhibitions | 758 |
| Extension Literature | 104 |
| Farmers visit to KVK | 12388 |
| Kisan melas | 316 |
| Lectures delivered as resource persons | 392 |
| Newspaper coverage | 2252 |
| Popular articles | 375 |
| Radio Talks | 126 |
| Registration of farmers through AKPS | 8763 |
| Research articles | 122 |
| Success stories | 122 |
| TV Talks | 184 |
| Others | 53 |
| **Total** | **27030** |

### 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) | 19 |
| Bimonthly Newsletters (English, Tamil and Telugu) | 25 |
| Electronic Media (CD/DVD) | 10 |
| Exhibitions | 89 |
| Extension Literature | 169 |
| Farmers visit to KVK | 1206 |
| Kisan melas | 57 |
| Lectures delivered as resource persons | 368 |
| Newspaper coverage | 2003 |
| Popular articles | 251 |
| Radio Talks | 116 |
| Registration of farmers through AKPS | 16849 |
| Research articles | 50 |
| Success stories | 79 |
| TV Talks | 225 |
| Others | 262 |
| **Total** | **21778** |

### 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) | 7 |
| Bimonthly Newsletters (English, Tamil and Telugu) | 1 |
| Electronic Media (CD/DVD) | 0 |
| Exhibitions | 15 |
| Extension Literature | 10 |
| Farmers visit to KVK | 720 |
| Kisan melas | 0 |
| Lectures delivered as resource persons | 145 |
| Newspaper coverage | 155 |
| Popular articles | 4 |
| Radio Talks | 17 |
| Registration of farmers through AKPS | 0 |
| Research articles | 4 |
| Success stories | 7 |
| TV Talks | 6 |
| Others | 13 |
| **Total** | **1104** |

## Technology Week

Technology week celebrations were organized by KVKs in which 276034 farmers participated (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 | 42 | 10114 | 26 | 3000 | 28 | 1278 | 0 | 0 | **96** | **14392** |
| Lectures organized | 345 | 11232 | 73 | 2906 | 47 | 1530 | 8 | 311 | **473** | **15979** |
| Exhibition | 113 | 17044 | 40 | 112182 | 27 | 3899 | 6 | 628 | **186** | **133753** |
| Film show | 184 | 6973 | 33 | 2423 | 6 | 692 | 1 | 76 | **224** | **10164** |
| Fair | 9 | 1052 | 2 | 471 | 2 | 438 | 0 | 0 | **13** | **1961** |
| Farm Visit | 371 | 4881 | 286 | 3812 | 223 | 2566 | 4 | 447 | **884** | **11706** |

| Types of Activities | Tamil Nadu | | Andhra Pradesh | | Telangana | | Puducherry | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No. | F | No. | F | No. | F | No. | F | No. | F |
| Diagnostic Practical | 205 | 2793 | 78 | 803 | 134 | 1734 | 1 | 74 | **418** | **5404** |
| Distribution of Literature (No.) | 1797 | 14913 | 1648 | 6554 | 40 | 4120 | 5 | 376 | **3490** | **25963** |
| Distribution of Seed (q) | 556 | 8775 | 1219 | 3634 | 95 | 666 | 1 | 104 | **1871** | **13179** |
| Distribution of Planting materials (No.) | 16788 | 3187 | 353828 | 1689 | 331091 | 380 | 1 | 100 | **701708** | **5356** |
| Bio Product distribution (Kg) | 152498 | 4525 | 3111 | 361 | 3026 | 151 | 0 | 0 | **158635** | **5037** |
| Bio Fertilizers (q) | 11092 | 1270 | 1492 | 2933 | 205 | 1049 | 0 | 0 | **12789** | **5252** |
| Distribution of fingerlings | 276671 | 201 | 0 | 0 | 0 | 0 | 0 | 0 | **276671** | **201** |
| Distribution of Livestock specimen (No.) | 2182 | 413 | 110 | 64 | 500 | 100 | 0 | 0 | **2792** | **577** |
| Total number of farmers visited the technology week | 1486 | 13604 | 1073 | 6420 | 286 | 4374 | 0 | 376 | **2845** | **24774** |
| Others | 802 | 2311 | 2 | 25 | 0 | 0 | 0 | 0 | **804** | **2336** |
| **Total** | **465141** | **103288** | **363021** | **147277** | **335710** | **22977** | **27** | **2492** | **1163899** | **276034** |

*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 80504 messages to 24065980 farmers (Table 3.4.8). Among them, 8414 messages were sent through Kisan Mobile portal to 12257619 farmers (Table 3.4.9) and 72090 messages were sent through other sources to 11808361 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 | 924 | 6128177 | 6812 | 1485577 | 678 | 4643865 | 0 | 0 | 8414 | 12257619 |
| Other Mobile Advisories | 31438 | 1520405 | 18650 | 4681530 | 21329 | 5572335 | 673 | 34091 | 72090 | 11808361 |
| **Total** | **32362** | **7648582** | **25462** | **6167107** | **22007** | **10216200** | **673** | **34091** | **80504** | **24065980** |

*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 | 410 | 3750017 | 2083 | 920021 | 540 | 3352716 | 0 | 0 | 3033 | 8022754 |
| Voice | 3 | 1272 | 162 | 26032 | 0 | 0 | 0 | 0 | 165 | 27304 |
| Text and Voice | 0 | 0 | 1743 | 27036 | 29 | 224242 | 0 | 0 | 1772 | 251278 |
| **Total** | 413 | 3751289 | 3988 | 973089 | 569 | 3576958 | 0 | 0 | 4970 | 8301336 |
| **Livestock** | | | | | | | | | | |
| Text | 81 | 892613 | 319 | 106384 | 62 | 43737 | 0 | 0 | 462 | 1042734 |
| Voice | 45 | 110 | 99 | 15258 | 0 | 0 | 0 | 0 | 144 | 15368 |
| Text and Voice | 12 | 145 | 387 | 15258 | 0 | 0 | 0 | 0 | 399 | 15403 |
| **Total** | 138 | 892868 | 805 | 136900 | 62 | 43737 | 0 | 0 | 1005 | 1073505 |
| **Agro Advisories** | | | | | | | | | | |
| Text | 54 | 257519 | 77 | 67224 | 7 | 3500 | 0 | 0 | 138 | 328243 |
| Voice | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Type of message | Tamil Nadu | | Andhra Pradesh | | Telangana | | PY | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | NM | NF | NM | NF | NM | NF | NM | NF | NM | NF |
| Text and Voice | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 5 | 0 |
| **Total** | 54 | 257519 | 77 | 67224 | 12 | 3500 | 0 | 0 | 143 | 328243 |
| **Critical Technology Inputs** | | | | | | | | | | |
| Text | 21 | 93478 | 0 | 19104 | 15 | 264726 | 0 | 0 | 36 | 377308 |
| 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** | 21 | 93478 | 0 | 19104 | 15 | 264726 | 0 | 0 | 36 | 377308 |
| **Farm Implements** | | | | | | | | | | |
| Text | 8 | 103693 | 3 | 19104 | 0 | 0 | 0 | 0 | 11 | 122797 |
| 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** | 8 | 103693 | 3 | 19104 | 0 | 0 | 0 | 0 | 11 | 122797 |
| **Awareness** | | | | | | | | | | |
| Text | 47 | 244670 | 33 | 61704 | 0 | 0 | 0 | 0 | 80 | 306374 |
| Voice | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Text and Voice | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total** | 47 | 244670 | 33 | 61704 | 0 | 0 | 0 | 0 | 80 | 306374 |
| **KVK-Programmes** | | | | | | | | | | |
| Text | 63 | 474181 | 78 | 54994 | 3 | 1250 | 0 | 0 | 144 | 530425 |
| Voice | 0 | 0 | 10 | 3000 | | | 0 | 0 | 10 | 3000 |
| Text and Voice | 0 | 0 | 10 | 3000 | 2 | 0 | 0 | 0 | 12 | 3000 |
| **Total** | 63 | 474181 | 100 | 59494 | 5 | 1250 | 0 | 0 | 168 | 534925 |
| **Weather** | | | | | | | | | | |
| Text | 91 | 183205 | 508 | 55080 | 11 | 376847 | 0 | 0 | 610 | 615132 |
| Voice | 0 | 0 | 44 | 5086 | 0 | 0 | 0 | 0 | 44 | 5086 |
| Text and Voice | 0 | 0 | 428 | 5086 | 2 | 112121 | 0 | 0 | 430 | 117207 |
| **Total** | 91 | 183205 | 980 | 65252 | 13 | 488968 | 0 | 0 | 1084 | 737425 |
| **Market** | | | | | | | | | | |
| Text | 20 | 88945 | 117 | 26886 | 2 | 264726 | 0 | 0 | 139 | 380557 |
| Voice | 0 | 0 | 44 | 5086 | 0 | 0 | 0 | 0 | 44 | 5086 |
| Text and Voice | 0 | 0 | 140 | 5086 | 0 | 0 | 0 | 0 | 140 | 5086 |
| **Total** | 20 | 88945 | 301 | 37058 | 2 | 264726 | 0 | 0 | 323 | 390729 |
| **Women and Children** | | | | | | | | | | |
| Text | 28 | 31464 | 53 | 36476 | 0 | 0 | 0 | 0 | 81 | 67940 |
| Voice | 0 | 0 | 44 | 5086 | 0 | 0 | 0 | 0 | 44 | 5086 |
| Text and Voice | 0 | 0 | 428 | 5086 | 0 | 0 | 0 | 0 | 428 | 5086 |
| **Total** | 28 | 31464 | 525 | 46648 | 0 | 0 | 0 | 0 | 553 | 78112 |
| **Others** | | | | | | | | | | |
| Text | 23 | 6719 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 6719 |
| 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** | 23 | 6719 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 6719 |
| **Grand Total** | | | | | | | | | | |
| Text | 846 | 6126504 | 3271 | 1366977 | 640 | 4307502 | 0 | 0 | 4757 | 11800983 |
| Voice | 59 | 1511 | 403 | 59548 | 0 | 0 | 0 | 0 | 462 | 61059 |
| Text and Voice | 19 | 162 | 3138 | 59052 | 38 | 336363 | 0 | 0 | 3195 | 395577 |
| **Total** | **924** | **6128177** | **6812** | **1485577** | **678** | **4643865** | **0** | **0** | **8414** | **12257619** |

*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 | 4362 | 408449 | 4943 | 1720180 | 8778 | 2999190 | 11 | 171 | 18094 | 5127990 |
| Voice | 408 | 15215 | 1121 | 52928 | 353 | 50410 | 0 | 0 | 1882 | 118553 |
| Text and Voice | 914 | 56558 | 548 | 524207 | 4446 | 289019 | 0 | 0 | 5908 | 869784 |
| **Total** | 5684 | 480222 | 6612 | 2297315 | 4446 | 289019 | 11 | 171 | 16753 | 3066727 |
| **Livestock** | | | | | | | | | | |
| Text | 11675 | 208153 | 1496 | 257510 | 1209 | 136204 | 2 | 28 | 14382 | 601895 |
| Voice | 1528 | 21652 | 324 | 1706 | 441 | 468 | 0 | 0 | 2293 | 23826 |
| Text and Voice | 387 | 36576 | 60 | 231457 | 302 | 31323 | 0 | 0 | 749 | 299356 |
| **Total** | 13590 | 266381 | 1880 | 490673 | 1952 | 167995 | 2 | 28 | 17424 | 925077 |
| **Agro Advisories** | | | | | | | | | | |
| Text | 3724 | 117807 | 608 | 65641 | 938 | 482851 | 328 | 15897 | 5598 | 682196 |
| Voice | 161 | 3721 | 1041 | 30682 | 150 | 150 | 0 | 0 | 1352 | 34553 |
| Text and Voice | 1644 | 60404 | 45 | 13397 | 83 | 2225 | 217 | 3943 | 1989 | 79969 |
| **Total** | 5529 | 181932 | 1694 | 109720 | 1171 | 485226 | 545 | 19840 | 8939 | 796718 |
| **Critical Technology Inputs** | | | | | | | | | | |
| Text | 78 | 15799 | 150 | 16000 | 79 | 41044 | 0 | 0 | 307 | 72843 |
| | 44 | 1973 | 23 | 7842 | 25 | 25 | 0 | 0 | 92 | 9840 |
| | 13 | 1624 | 12 | 13874 | 14 | 14 | 0 | 0 | 39 | 15512 |
| **Total** | 135 | 19396 | 185 | 37716 | 118 | 41083 | 0 | 0 | 438 | 98195 |
| **Farm Implements** | | | | | | | | | | |
| Text | 49 | 18888 | 46 | 17876 | 90 | 32667 | 0 | 0 | 185 | 69431 |
| Voice | 21 | 1098 | 41 | 8877 | 23 | 223 | 0 | 0 | 85 | 10198 |
| Text and Voice | 6 | 1054 | 10 | 14324 | 35 | 32240 | 0 | 0 | 51 | 47618 |
| **Total** | 76 | 21040 | 97 | 41077 | 148 | 65130 | 0 | 0 | 321 | 127247 |
| **Awareness** | | | | | | | | | | |
| Text | 340 | 105750 | 418 | 237797 | 296 | 396686 | 0 | 0 | 1054 | 740233 |
| Voice | 14 | 2190 | 75 | 31442 | 67 | 6888 | 0 | 0 | 156 | 40520 |
| Text and Voice | 26 | 69239 | 28 | 209195 | 45 | 39095 | 0 | 0 | 99 | 317529 |
| **Total** | 380 | 177179 | 521 | 478434 | 408 | 442669 | 0 | 0 | 1309 | 1098282 |
| **KVK-Programmes** | | | | | | | | | | |
| Text | 463 | 57818 | 237 | 54581 | 292 | 47056 | 8 | 2512 | 1000 | 161967 |
| Voice | 22 | 3290 | 1578 | 7121 | 54 | 6882 | 0 | 0 | 1654 | 17293 |
| Text and Voice | 16 | 1624 | 11 | 13546 | 40 | 16120 | 0 | 0 | 67 | 31290 |
| **Total** | 501 | 62732 | 1826 | 75248 | 386 | 70058 | 8 | 2512 | 2721 | 210550 |
| **Weather** | | | | | | | | | | |
| Text | 3303 | 127338 | 574 | 308208 | 1719 | 850456 | 0 | 0 | 5596 | 1286002 |
| Voice | 79 | 4130 | 592 | 5979 | 50 | 6860 | 0 | 0 | 721 | 16969 |
| Text and Voice | 1530 | 86459 | 150 | 206080 | 1282 | 39073 | 0 | 0 | 2962 | 331612 |
| **Total** | 4912 | 217927 | 1316 | 520267 | 3051 | 896389 | 0 | 0 | 9279 | 1634583 |
| **Market** | | | | | | | | | | |
| Text | 351 | 52025 | 603 | 77467 | 174 | 1000 | 107 | 11540 | 1235 | 142032 |
| Voice | 13 | 2321 | 52 | 53647 | 34 | 24 | 0 | 0 | 99 | 55992 |
| Text and Voice | 9 | 1909 | 19 | 63124 | 18 | 18 | 0 | 0 | 46 | 65051 |
| **Total** | 373 | 56255 | 674 | 194238 | 226 | 1042 | 107 | 11540 | 1380 | 263075 |
| **Women and Children** | | | | | | | | | | |
| Text | 36 | 14057 | 109 | 17289 | 144 | 24814 | 0 | 0 | 289 | 56160 |
| Voice | 137 | 1029 | 8 | 32545 | 45 | 35 | 0 | 0 | 190 | 33609 |
| Text and Voice | 7 | 1909 | 8 | 32545 | 12 | 12 | 0 | 0 | 27 | 34466 |
| **Total** | 180 | 16995 | 129 | 52179 | 201 | 24861 | 0 | 0 | 510 | 94035 |

| Type of message | Tamil Nadu | | Andhra Pradesh | | Telangana | | PY | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | NM | NF | NM | NF | NM | NF | NM | NF | NM | NF |
| **Others** | | | | | | | | | | |
| Text | 68 | 17496 | 3705 | 198345 | 62 | 29984 | 0 | 0 | 3835 | 245825 |
| Voice | 7 | 1995 | 6 | 564 | 11 | 11 | 0 | 0 | 24 | 2570 |
| Text and Voice | 3 | 855 | 5 | 185754 | 18 | 9268 | 0 | 0 | 26 | 195877 |
| **Total** | 78 | 20346 | 3716 | 384663 | 91 | 39263 | 0 | 0 | 3885 | 444272 |
| **Grand Total** | | | | | | | | | | |
| Text | 24449 | 1143580 | 12889 | 2970894 | 13781 | 5041952 | 456 | 30148 | 51575 | 9186574 |
| Voice | 2434 | 58614 | 4861 | 233333 | 1253 | 71976 | 0 | 0 | 8548 | 363923 |
| Text and Voice | 4555 | 318211 | 900 | 1477303 | 6295 | 458407 | 217 | 3943 | 11967 | 2257864 |
| **Total** | **31438** | **1520405** | **18650** | **4681530** | **21329** | **5572335** | **673** | **34091** | **72090** | **11808361** |

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

**Animal health awareness program - KVK, Kanyakumari , Tamil Nadu**

**Animal health camp - KVK, Ramnad, Tamil Nadu**

**Awareness on the use of drones- KVK, Mancherial , Telangana**

**Awareness to the School students on Importance of farming - KVK, Villuppuram, Tamil Nadu**

**Exhibition on genetic diversity - KVK, Kanyakumari , Tamil Nadu**

**Field day of Bajra - KVK, Cuddalore, Tamil Nadu**

**Field visit to Ridge gourd fields - KVK, Thiruvannamalai , Tamil Nadu**


**Information Center - KVK, West Godavari (Undi), AP**


**Millet mela - KVK, Erode, Tamil Nadu**


**Participation in Regional Millet Mela - KVK Tiruvannamalai , Tamil Nadu**

## 3.5. Publications

The KVKs of Zone-X brought out 7780 publications, which include 464 research papers, 1028 popular articles, 425 success stories, 897 technical bulletins, 411 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 | 288 | 135 | 38 | 3 | **464** |
| Popular Articles | 521 | 301 | 206 | 0 | **1028** |
| Books Chapters | 192 | 29 | 6 | 0 | **227** |
| Books | 371 | 22 | 13 | 5 | **411** |
| Conference Papers | 101 | 55 | 21 | 2 | **179** |
| Seminar Papers | 50 | 24 | 19 | 2 | **95** |
| Posters | 109 | 53 | 46 | 0 | **208** |
| Workshop presentations | 96 | 42 | 25 | 1 | **164** |
| Folders | 106 | 56 | 43 | 2 | **207** |
| Leaflets | 1004 | 84 | 41 | 25 | **1154** |
| Pamphlets | 1157 | 45 | 33 | 1 | **1236** |
| Brochures | 26 | 36 | 20 | 0 | **82** |
| Pocket Cards & Dairy | 8 | 1 | 0 | 0 | **9** |
| Success Stories | 215 | 129 | 76 | 5 | **425** |
| Technical Bulletins | 108 | 306 | 483 | 0 | **897** |
| Technical Reports | 147 | 136 | 109 | 0 | **392** |
| Training Manuals | 186 | 20 | 28 | 11 | **245** |
| Proceedings | 113 | 27 | 38 | 0 | **178** |
| Others | 111 | 42 | 26 | 0 | **179** |
| **Total** | **4909** | **1543** | **1271** | **57** | **7780** |

Twenty-two 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 |
|---|---|---|---|
| **Andhra Pradesh** | | | |
| Chittoor (RASS) | KVK Newsletter | Quarterly | 400 |
| East Godavari (Kalavacharla) | CTRI News Letter | Quarterly | 500 |
| Guntur (Lam) | SVVU Monthly reports | Monthly | 1200 |
| Guntur (Lam) | SVVU Quarterly Newsletter | Quarterly | 400 |
| Kadapa (Vonipenta) | Dr. YSRHU e-News letter | Fortnightly | 240 |
| Kurnool (Yagantipalle) | KVK Yagantipalle, E Newsletter | Half yearly | 200 |
| **Tamil Nadu** | | | |
| Ariyalur | Seithi Malar | Quarterly | 500 |
| Coimbatore | Kovai Velanmai | Quarterly | 500 |
| Cuddalore | Erkalam | Quarterly | 400 |
| Dharmapuri | Thagadoor Seithi Madal | Quarterly | 100 |
| Dindigul | KVK Newsletter | Quarterly | 400 |
| Erode | Uzhavar Malar | Quarterly | 1000 |
| Erode | KVK Reporter | Quarterly | 1000 |
| Karur | Karur Newsletter | Half Yearly | 200 |
| Krishnagiri | UZHAVAR THUNAIVAN | Quarterly | 100 |
| Madurai | TNAU NEWSLETTER | Half Yearly | 50 |
| Nilgiris | Neelamalai Saaral | Quarterly | 400 |
| Perambalur | KVK Newsletter | Half Yearly | 3000 |
| Pudukkottai | KVK Pudukkottai Newsletter | Quarterly | 120 |
| **Telangana** | | | |
| Kammam (Wyra) | PJTSAU Newsletter | Quarterly | 400 |
| Mahabubnagar (Palem) | KVK Palem E-News letter | Quarterly | 250 |
| Mahabubnagar (YFA) | YFA-KVK Newsletter | Quarterly | 400 |

## 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 8688 quintals of seed of cereals and millets, 903 quintals of oilseeds, 2999 quintals of pulses and supplied to 21078, 1838 and 12222 farmers, respectively. Also 98 quintals of vegetables, 367 quintals of fodder seeds, 5 quintals of commercial crops 54 quintals of green manures and 6 quintals of flowers seeds were produced and supplied to 14663 farmers. (Table 3.6.1).

### 3.6.2 Planting material

Planting materials including 7043722 vegetable seedlings, 1661979 fodder slips, 1314619 flowers and ornamental plants, 758343 fruit saplings, 844 special planting materials, 79980 forestry and plantation crops, 44922 medicinal plants, *etc*., totaling 11156049 were supplied to 52891 farmers in the Zone. (Table 3.6.2)

### 3.6.3 Bio-products and bio-agents

A total of 33182 kg of bio fertilizers, 41146 kg of bio pesticides and 876883 kgs of bio-inputs including vermicompost were produced supplied to 702502 farmers (Table 3.6.3).

### 3.6.4 Livestock Species

A total of 1044151 livestock species, comprising of 954226 fish spawn/seed, 77784 poultry chicks, 11421 dairy animals and 714 sheep and goat were produced and provided to 64527 farmers (Table 3.6.4).

### 3.6.5 Other inputs

A total of 80929 quintals of other inputs comprising 35708 quintals of crop inputs, 25697 quintals of animal feed and 6540 quintals of poultry feed. 4702 quintals of fish feed and 8282 quintals of other inputs have been produced and provided to 22850 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 | 1826 | 4219528 | 7334 | 3778 | 17518460 | 7793 | 2865 | 10036277 | 5491 | 220 | 722355 | 460 | **8688** | **32496620** | **21078** |
| Oil Seeds | 294 | 1519384 | 812 | 565 | 6025856 | 876 | 44 | 455000 | 150 | 0 | 0 | 0 | **903** | **8000240** | **1838** |
| Pulses | 350 | 3485540 | 1505 | 2150 | 25182262 | 8503 | 499 | 6188890 | 2214 | 0 | 0 | 0 | **2999** | **34856692** | **12222** |
| Vegetables | 91 | 709494 | 766 | 3 | 105500 | 2816 | 2 | 5250 | 3 | 2 | 144350 | 340 | **98** | **964594** | **3925** |
| Fruits | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **0** | **0** | **0** |
| Flowers | 0 | 0 | 0 | 6 | 6000 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | **6** | **6000** | **28** |
| Spices | 1 | 15950 | 202 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** | **15950** | **202** |
| Fodder | 299 | 11971293 | 9813 | 1 | 40250 | 78 | 68 | 182750 | 140 | 0 | 0 | 0 | **367** | **12194293** | **10031** |
| Special Planting Materials | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **0** | **0** | **0** |
| Green manure | 23 | 200880 | 86 | 14 | 46563 | 305 | 17 | 125625 | 50 | 0 | 0 | 0 | **54** | **373068** | **441** |
| Commercial crops | 5 | 45090 | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **5** | **45090** | **36** |
| **Total** | **2889** | **22167159** | **20554** | **6516** | **48924891** | **20399** | **3494** | **16993792** | **8048** | **222** | **866705** | **800** | **13120** | **88952547** | **49801** |

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

## 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 | 195145 | 202153 | 2404 | 4082237 | 3494596 | 8248 | 2707133 | 3089082 | 1225 | 59207 | 87228 | 441 | **7043722** | **6873059** | **12318** |
| Fruits | 670970 | 31116564 | 13383 | 58524 | 1227743 | 3606 | 27931 | 1940115 | 772 | 918 | 238140 | 812 | **758343** | **34522562** | **18573** |
| Flowers and ornamental plants | 758313 | 2563412 | 2695 | 365437 | 394982 | 1448 | 180517.2 | 462980 | 69 | 10352 | 220303 | 2157 | **1314619** | **3641677** | **6369** |
| Medicinal and aromatic plants | 12931 | 99039 | 1338 | 29407 | 735175 | 57 | 0 | 0 | 0 | 2584 | 25840 | 750 | **44922** | **860054** | **2145** |
| Forestry and plantation crops | 57455 | 2835361 | 5862 | 19052 | 573070 | 340 | 0 | 0 | 0 | 3473 | 51870 | 418 | **79980** | **3460301** | **6620** |
| Fodder slips | 1412679 | 1439683 | 1495 | 10800 | 2400 | 15 | 238500 | 130750 | 133 | 0 | 0 | 0 | **1661979** | **1572833** | **1643** |
| Spices | 239413 | 617567 | 694 | 400 | 8000 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | **239813** | **625567** | **697** |
| Special Planting materials | 307 | 51960 | 63 | 300 | 30000 | 10 | 125 | 25000 | 125 | 112 | 0 | 50 | **844** | **106960** | **248** |
| Others | 11827 | 217114 | 4278 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **11827** | **217114** | **4278** |
| **Total** | **3359040** | **39142853** | **32212** | **4566157** | **6465966** | **13727** | **3154206** | **5647927** | **2324** | **76646** | **623381** | **4628** | **11156049** | **51880127** | **52891** |

*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 | 23160 | 756858 | 4166 | 6088 | 647101 | 1457 | 3880 | 379330 | 2270 | 55 | 1135 | 21 | 33182 | 1784424 | 7914 |
| Bio-inputs | 225879 | 3408609 | 5454 | 335830 | 2827030 | 22276 | 308742 | 2961199 | 2064 | 6432 | 145678 | 1019 | 876883 | 9342516 | 30813 |
| Bio-pesticides | 20757 | 2308203 | 659525 | 6746 | 1624960 | 3230 | 8393 | 1945715 | 1020 | 5251 | 966309 | 0 | 41146 | 6845187 | 663775 |
| **Total** | **269795** | **6473670** | **669145** | **348664** | **5099091** | **26963** | **321015** | **5286244** | **5354** | **11737** | **1113122** | **1040** | **951212** | **17972127** | **702502** |

*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 | 10907 | 651284 | 664 | 13 | 189000 | 11 | 0 | 0 | 0 | 501 | 186684 | 291 | **11421** | **1026968** | **966** |
| Goat and Sheep | 402 | 2923193 | 211 | 195 | 1791488 | 96 | 99 | 715000 | 32 | 18 | 115530 | 14 | **714** | **5545211** | **353** |
| Poultry | 25706 | 2634703 | 3285 | 29645 | 2741138 | 1377 | 18872 | 1778850 | 1443 | 3561 | 107645 | 260 | **77784** | **7262336** | **6365** |
| Piggery | 6 | 72000 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **6** | **72000** | **6** |
| Fishery | 460226 | 989406 | 11722 | 195725 | 262045 | 45063 | 287162 | 230520 | 33 | 11113 | 90315 | 19 | **954226** | **1572286** | **56837** |
| **Total** | **497247** | **7270586** | **15888** | **225578** | **4983671** | **46547** | **306133** | **2724370** | **1508** | **15193** | **500174** | **584** | **1044151** | **15478801** | **64527** |

*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 | 34672 | 8394099 | 7504 | 886 | 310350 | 1808 | 150 | 183400 | 1592 | 0 | 0 | 0 | **35708** | **8887849** | **10904** |
| Animal feed | 20437 | 1814728 | 4899 | 3409 | 63870 | 277 | 1851 | 128989 | 315 | 0 | 0 | 0 | **25697** | **2007587** | **5491** |
| Poultry feed | 5000 | 193000 | 215 | 1040 | 0 | 42 | 500 | 16000 | 100 | 0 | 0 | 0 | **6540** | **209000** | **357** |
| Fish Feed | 2200 | 122000 | 66 | 2500 | 75000 | 12 | 2 | 0 | 5 | 0 | 0 | 0 | **4702** | **197000** | **83** |
| Others | 4566 | 708751 | 3781 | 1250 | 10150 | 34 | 100 | 0 | 200 | 2366 | 473153 | 2000 | **8282** | **1192054** | **6015** |
| **Total** | **66875** | **11232578** | **16465** | **9085** | **459370** | **2173** | **2603** | **328389** | **2212** | **2366** | **473153** | **2000** | **80929** | **12493490** | **22850** |

*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 52124 samples including soil (44892), water (6309), plant (661), manure (50) and 212 other samples were analyzed by the KVKs benefiting 45249 farmers of 8546 villages (Table 3.6.6.)

**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 | 4049 | 3608 | 1686 | 2459 | 2392 | 544 | 2948 | 2894 | 222 | 0 | 0 | 0 | **9456** | **8894** | **2452** |
| Soil Samples analyzed by traditional lab method | 10224 | 8122 | 2502 | 17159 | 16787 | 1207 | 7813 | 6124 | 242 | 240 | 143 | 84 | **35436** | **31176** | **4035** |
| **Total Soil Samples analyzed** | **14273** | **11730** | **4188** | **19618** | **19179** | **1751** | **10761** | **9018** | **464** | **240** | **143** | **84** | **44892** | **40070** | **6487** |
| Water samples analyzed | 4374 | 3158 | 1458 | 1392 | 1125 | 270 | 505 | 390 | 102 | 38 | 27 | 27 | **6309** | **4700** | **1857** |
| Plant Samples analyzed | 102 | 96 | 93 | 0 | 0 | 0 | 520 | 278 | 27 | 39 | 2 | 2 | **661** | **376** | **122** |
| Manure samples analyzed | 50 | 10 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **50** | **10** | **5** |
| Others | 212 | 93 | 75 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **212** | **93** | **75** |
| **Total** | **19011** | **15087** | **5819** | **21010** | **20304** | **2021** | **11786** | **9686** | **593** | **317** | **172** | **113** | **52124** | **45249** | **8546** |

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

I received 10 Rajasri birds (One Month old) for backyard poultry rearing from Dr.YSRHU-KVK, Periyavaram during the year 2023 under SC Sub plan There is a significant increase in family income of Rs. 14950/- per annum by sale of eggs and male birds and consumption of eggs for nutrition in the family.

**M.Adivaiah**
Petluru, Tirupati district

## 3.7. Rainwater Harvesting

A total of 81 training courses and 77 demonstrations were conducted on rainwater harvesting technologies benefiting 7193 farmers. A total of 456 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 | 5 | 5 | 675 | 20 |
| Dharmapuri | Rain harvesting pond and check dam | 2 | 2 | 500 | 12 |
| Dindigul | *In-situ* moisture conservation and storage of run-off through farm pond | 8 | 4 | 614 | 28 |
| Nagapattinam | Awareness creation and explained about the IFS technologies and demonstrations | 9 | 9 | 285 | 27 |
| Namakkal | Insitu moisture conservation | 6 | 9 | 120 | 12 |
| Perambalur | Awareness on water storage structure, In-situ moisture conservation practices | 1 | 1 | 15 | 5 |
| Perambalur | Methods of soil moisture conservation and benefits of soil moisture conservation | 1 | 1 | 78 | 7 |
| Ramanathapuram | Rain water storage technology | 1 | 1 | 55 | 45 |
| Salem | Establishment of farm ponds | 3 | 2 | 118 | 8 |
| Sivagangai | Establishments of water harvesting structures | 3 | 2 | 328 | 12 |
| Sivagangai | Rainwater harvesting in saline water areas | 3 | 0 | 126 | 2 |
| Tirunelveli | Rainwater harvesting in agricultural land | 1 | 1 | 30 | 5 |
| Villupuram II | Installed Drip fertigation in Maize and Sugarcane field for water saving and fertilizer use efficiency | 3 | 2 | 97 | 5 |
| Villupuram II | Installed Drip fertigation in Tapioca for water saving | 2 | 2 | 115 | 4 |
| Villupuram II | Compartmental bunding and summer ploughing for Soil moisture conservation in rainfed lands | 2 | 2 | 48 | 6 |
| **Andhra Pradesh** | | | | | |
| Ananthapuram (Kalyandurg) | Farm pond | 4 | 4 | 80 | 10 |
| Chittoor (RASS) | Soil and water conservation | 6 | 7 | 1664 | 55 |
| Kadapa (Utukur) | Method demonstrations on Deep ploughings with sub soiler | 1 | 3 | 15 | 0 |
| Prakasam (Kandukur) | Roof water collection and storage for life saving irrigation | 3 | 3 | 154 | 54 |
| Prakasam (Kandukur) | Rain water harvestings through farm ponds | 4 | 4 | 263 | 124 |
| Visakhapatnam (Kondempudi) | Role of rain water harvesting structures | 5 | 3 | 53 | 0 |
| **Telangana** | | | | | |
| Adilabad | Raised bed technology in cotton | 1 | 5 | 740 | 5 |
| Adilabad | Demonstration on raised bed technology in Cotton + Red gram (2:1) | 1 | 1 | 740 | 5 |
| Karimnagar (Jammikunta) | Constructions of Farm Pond | 1 | 1 | 25 | 8 |
| Mahabubnagar (YFA) | Watershed management practices, rain water harvesting structures and water budgeting | 1 | 1 | 55 | 15 |
| Medak (Tuniki) | Rainwater harvesting, rain water management etc. | 3 | 2 | 155 | 0 |
| Warangal (Malyal) | Rainwater harvesting and its efficient use 9n SCSP adopted village | 1 | 0 | 45 | 2 |
| | **Total** | **81** | **77** | **7193** | **456** |

## 3.8. Technological Backstopping

The Directorates of Extension of Universities (Agricultural, Horticultural, Veterinary and Fishery) of the Zone provides technological back stopping, capacity building and monitors and reviews of activities of KVKs along with ATARI. The Directorates of Extension of the Agricultural, Horticultural, Veterinary and Fisheries Universities in the Zone and ICAR-ATARI conducted 71 meetings with the participation of 5285 KVK staff.

**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 | 8 | 1225 |
| PJTSAU, Hyderabad | 21 | 1594 |
| SKLTSHU, Mulugu | 1 | 148 |
| Dr.YSRHU, V.R.Gudem | 8 | 367 |
| SVVU, Tirupati | 8 | 487 |
| PVNRTU, Hyderabad | 2 | 66 |
| TANUVAS, Chennai | 7 | 106 |
| TNAU, Coimbatore | 6 | 332 |
| ATARI, Hyderabad | 10 | 960 |
| **Total** | **71** | **5285** |

The Directors of Extension Education and their officials made 261 visits to 72 KVKs to coordinate and monitor the mandated activities, 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 | 10 | 8 |
| PJTSAU, Hyderabad | 12 | 12 |
| SKLTSHU, Mulugu | 5 | 1 |
| Dr.YSRHU, V.R.Gudem | 35 | 6 |
| SVVU, Tirupati | 4 | 4 |
| PVNRTU, Hyderabad | 9 | 1 |
| TANUVAS, Chennai | 9 | 4 |
| TNAU, Coimbatore | 43 | 18 |
| TNAU, Coimbatore | 43 | 18 |
| TANUVAS, Chennai | 9 | 4 |
| ATARI, Hyderabad | 82 | 68 |
| **Total** | **261** | **72** |

## 3.9. Agricultural Technology Information Centre (ATIC)

Agricultural Technology Information Centres (ATICs) are functioning in PJTSAU, TNAU and TANUVAS are single window delivery systems for 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 3377, 5545 and 3409 farmers respectively. Three books were sold to 524 farmers and 2 DVDs on crop production and livestock production technology were sold to 57236 farmers. Three Technical bulletins were sold to 11284 farmers.

**Table 3.9.1 Details of visit of farmers to ATICs**

| Nature of Visit | PJTSAU | TNAU | TANUVAS | Total |
|---|---|---|---|---|
| Technology Information | 615 | 2458 | 304 | **3377** |
| Technology Products | 42 | 5357 | 146 | **5545** |
| Agro-advisory | 220 | 2895 | 294 | **3409** |


I am KVK, V.R.Gudem, under ARYA, which played a transformative role in turning me into a beekeeping entrepreneur with Indian bees i.e.Apis cerana indica, known for specialty honey with medicinal values. Now, with about 15 bee colonies I am extracting 5 -10 Kgs honey every month and selling @ Rs. 2000/- per/kg. I have plans to increase the unit up to 50 colonies and to encourage fellow youth to take up this enterprise.

**Mr. Jashua**
Venkataramannagudem, Andhra Pradesh


# 3.10 Success Stories

## Natural farming in mango- Chittoor, Andhra Pradesh

Mr.K. Narasimhulu Guptha of Vengamvaaripalli village in Chittoor district cultivates mango in two hectares . His mango orchard is usually affected by biotic stresses like mango hoppers, fruit borers, fruit flies, leaf Webbers and anthracnose that are causing economical damage in mango orchards and ultimately causing reduction in quality and yield of mango fruits.

Under the guidance of KVK, Chittoor (Kalikiri), the farmer implemented the following natural farming practices in his mango orchard.

- Periodical raking of soil under tree basin at frequent intervals and field sanitation.
- Spraying of neem oil 1500 ppm @ 2 ml per liter of water at flowering stage
- Installation of fifteen methyl eugenol plywood traps per acre.
- Bagging of fruits at lemon size to avoid egg laying by fruit flies

### Performance of Natural farming in Mango

| Crop | Yield (kg/ha.) | Gross Cost of Cultivation (Rs./ha.) | Net returns (Rs./ha.) | B:C Ratio |
|---|---|---|---|---|
| Natural farming | 11235.8 | 112500 | 224575 | 3.0 |
| Farmer practice | 8681.6 | 137500 | 166358 | 2.2 |

The quality of the fruit was very good by using fruit covers and methyl eugenol traps which fetched higher price in the market.

**Bagging of mango for better quality**

## Sericulture secures livelihood – Chittoor, Andhra Pradesh

Sri V. Kannivelu Reddy from Chittoor district of Andhra Pradesh is cultivating mulberry and has taken up silk worm rearing in his 1.75 acres land. KVK, Chittoor (RASS) conducted demonstrations, capacity building programmes and Awareness programmes on various aspects of mulberry farming and silk worm rearing under Village adoption programme. After attending the programmes conducted by RASS KVK, Sri Kannevelu Reddy adopted improved package of practices of Mulberry cultivation and Silk worm rearing i.e. High yielding G-4 improved mulberry variety, rearing Bivoltine breed, application of bio control agents, application of waste decomposer, Multi nutrient spray, Seri boost and Poshan Seri boost Plus, utilization of effective disinfectants like Serifit, Seriswachh, Integrated Pest and Disease Management practices, management of micro climatic conditions by using foggers and heaters etc,. By following thee practices he could grow 10 crops, brush 1650 DFLs, and harvest 1350 kilograms of cocoons per year.

**Year wise Income and expenditure statement of Sri Kannevelu Reddy in sericulture**

| Year | No of crops / year | No of DFLs | Cocoon Yield (kg) | Expenditure (Rs.) | Gross Income (Rs.) | Net Returns (Rs.) |
|---|---|---|---|---|---|---|
| 2019 | 5 | 650 | 290 | 52350 | 115000 | 49150 |
| 2020 | 10 | 1600 | 1248 | 116420 | 458000 | 363580 |
| 2021 | 11 | 1800 | 1470 | 107280 | 367500 | 260450 |
| 2022 | 11 | 1700 | 1420 | 128950 | 656120 | 527170 |
| 2023 | 10 | 1575 | 1202 | 109560 | 399430 | 289870 |

Through the adoption of Integrated Nutrient Management Practices , he is harvesting nearly 24 t/ year of mulberry leaf per acre which is 33.3% more than that obtained by other farmers in the village. Mr. Reddy got 21.60% more cocoon yield (78 Kg/100 DFLs) than other farmers and could earn Rs 300000 to 350000 per year by taking up of 10-11 crops with 1650 DFLs per year. Inspired by the success of this farmer, 13 farmers from Kondalacheruvu village and more than 50 framers from nearby villages in Narayanavanam mandal have adopted and are practicing improved technologies in mulberry cultivation and silk worm rearing. He is also providing continuous employment for 4 members through his enterprise. Sri V. Kannivelu Reddy has received best farmers award during the year 2020-2021 from the department of sericulture

**Mr. Kannivelu Reddy in his mulberry field**

**Use of tricho cards for IPM**

## Entrepreneurship development through millets

Krishi Vigyan Kendra, Kurnool (Banavasi) has been training farmers, farm women, rural youth and Women Self Help Groups in the area of processing and value addition of millets. Trainings were conducted on value addition to millets to the farm women of KVK adopted villages. Further training was also imparted to the farm women on nutrition education, importance of value added food products, maintaining health and hygiene practices while handling food products, labeling, packing and financial management. The women were also sensitized on establishment of market linkages.

After acquainting with processing, preparation of value added products and packing, one women from Kurnool district, V. Vasavi came forward to take up value addition of millets as an entrepreneur activity under the technical support of KVK, Kurnool (Banavasi). She prepares snacks with millets like ragi, jowar, korra etc., and is supplying to the staff of KVK Banavasi and earning good profits. ***VASAVI FOODS*** came into existence with a vision to provide 100% natural products to meet specific daily nutritional requirements of every individual. It was started in the year 2023 at Kurnool District with the technical support of Krishi Vigyan Kendra, Banavasi. KVK, Banavasi has been continuously supporting the women entrepreneurs by creating marketing facilities and by establishing stalls and exhibition sales counters wherever required for enhancing their economic status.

***Vasavi*** **millet based products on exhibition cum sale**

## Successful entrepreneurship through vermicomposting

An effective means of recycling agricultural wastes is vermicomposting. *It* helps to maintain a healthy environment for *farm* animals and can reduce the *need* for commercial fertilizers while providing high value Vermicompost. Sri A. Hari was a graduate from YSR district, AP used to cultivate groundnut, sesame, betel vine and flower crops and get annual returns of Rs.39,350 from 2 acres of land. KVK created interest towards entrepreneurship through training programme and supported for establishment of vermicompost unit in through ARYA 2019-20. KVK, Kadapa (Utukuru) supported in establishment of vermicompost unit by providing construction material, watering system, weighing machine and earthworms and provided technical assistance in production though frequent monitoring . At present, Mr. Hari is producing 30 tonnes of vermicompost by recycling of farm wastes in 200 sq ft area throughout the year in four cycles. His annual income rose to Rs.1,56,000 with a B:C ratio or 2.16.

**Vermicompost unit of Mr. A. Hari, Kadapa – Andhra Pradesh**

## Soil Test Crop Response (STCR) equation based fertilizer application in rice in Nandyal , Andhra Pradesh brings down injudicious N fertilizer use

Soil tests help in quantifying the nutrients that are expected to be available to the crop plants throughout its life cycle and in identifying the possible nutrients that might limit the crop growth and yield. Hence, success of any soil testing programme, as a diagnostic tool to quantify the kind and amount of nutrients that need to be applied in order to get the desired yield level, depends how precisely calibration is done. Soil test based fertilizer application indeed avoids wasteful expenditure on nutrient(s) that need not be applied and in rationalizing the apportionment of different nutrient quantities that need to be applied to reap maximum returns from the investment on fertilization.

The Demonstrations were organized in the KVK, Kurnool (Yagantipalli) adopted villages of, Allagadda, Gospadu, Dornipadu, Nandyal and Sirivella mandals of Nandyal district. The villages were selected based on PRA conducted in major crops in that particular village. All the farmers of the village along with farm women, and youth were involved in awareness meetings and campaigns on ill effects of excess usage of chemical fertilizers. Selected groups of farmers, women and youth were given training on soil sampling procedure and nutrient management in rice before starting of the season at village level. The successful farmers who adopted the STCR recommendation were utilized for capacity building of new farmers. Demonstrations were conducted in farmers' fields to practically show them effectiveness of STCR technologies in reduction of cost of chemical fertilizers. Demonstrations were conducted in consultation with target group of adopted villages, local Water User Associations (WUAs) and Adharsa Rythus. STCR technology could be replicated in neighboring villages through awareness campaigns, trainings, exposure visits , mass media coverage, field visits, farmer's interaction meetings, field days etc. The Local agriculture extension personnel were involved in technology spread and adoption through trainings , field visits, field days etc.

By using STCR formula, the KVK, Yagantipalle conducted 300 demonstrations on Nutrient management in rice @0.4 ha unit area at different villages of Dornipadu, Gospadu, Sirivella, Koilkuntla,Allagadda, Nandyal and Bandi Atmakur mandals of Kurnool district under KC canal and TBLLC since Kharif-2007 with a target yield of 75q/ha. As per the soil test reports, the N content in all soils was low, P and K were medium to high. In STCR based fertilizer application in demonstrations, the use of N and P was significantly reduced and K was given at a higher dose contrary to farmers practice.

**Crop cut in the demonstration fields of rice**


**Field day on STCR based fertilizer use**

There is no significant difference in the yields recorded in STCR demonstrations and Farmer's practice (Check).However numerical increase in yield by 2.61 percent (3years average was observed in STCR over check due to more number of effective tillers/sq.mt and number of grains/panicle.

**Yields recorded in STCR demonstrations and farmers practice**

| Sl.No | Season &Year | No .of demos. | Yield (Kg./ha) | | % increase over check |
|---|---|---|---|---|---|
| | | | Demo (STCR) | Check (FP) | |
| 1 | Kharif 2019 | 100 | 6880 | 6783 | 1.43 |
| 2 | Kharif 2020 | 100 | 7138 | 7122 | 0.22 |
| 3 | Kharif 2021 | 100 | 7399 | 6968 | 6.19 |
| **Total/Mean** | | **300** | **7139** | **6958** | **2.61** |

The cost of production was less in demonstration (Rs.62392/ha) as compared to check (Rs.68672/ ha) and net difference in cost of production was Rs.6279-00 /ha (3 years average) due to judicious application of chemical fertilizers (STCR based recommendation) and pesticides.

**Comparison of Cost of Production in STCR demonstrations and farmers practice (Check)**

| Sl. No | Season &Year | No .of demos. | Cost of production(Rs./ha) | |
|---|---|---|---|---|
| | | | Demo (STCR) | Check(FP) |
| 1 | Kharif 2019 | 100 | 60168 | 67222 |
| 2 | Kharif 2020 | 100 | 62975 | 68250 |
| 3 | Kharif 2021 | 100 | 64035 | 70544 |
| **Total/Mean** | | **300** | **62392** | **68672** |

So far, STCR based nutrient management has been adopted by 300 farmers of KC Canal ayacut villages covering 415 ha .The reduction in cost of fertilizers is around Rs.31 lakhs and an amount of Rs.45 lakhs as additional income to farmers was ensured due to adoption of soil test based nutrient management in Rice.

## Redgram/ foxtail millet intercropping system mitigates drought in rainfed Kurnool areas

Small millets are grown on marginal lands with poor management practices. Pulses in general and redgram in particular provide more stability and ensure better monetary returns. However to provide stability in the returns, it is always advisable that a cereal or short duration pulse crop is introduced as a component crop with pigeon pea without any considerable reduction in the yield of main crop. Intercropping is an age old practice being followed by subsistence farmers to meet their domestic needs. The main advantage of the intercropping is that the component crops are able to use the growth resources differently and make better overall use of growth resources than grown separately. Pigeon pea is a late maturing, tall growing, wide spaced crop with deep root system can accommodate rapidly growing, short duration and short statured crops like millets and would prove to be a viable intercropping system.

To develop climate resilient alternative crop management systems and to insure against crop failure due to drought during crop growth, KVK adopted, Redgram + foxtail millet based intercropping systems. This practice has emerged as a significant drought coping strategy and resulted in higher yields per unit area through better use of the bi-model distribution of rainfall.

**Redgram intercropped with foxtail millet- Kurnool, Andhra Pradesh**

| Treatments | Crop | Yield kg/ha | Cost of Cultivation (Rs./ha) | Net Returns (Rs./ha) | BC ratio | Redgram equivalent Yield (kg/ha) |
|---|---|---|---|---|---|---|
| Farmers Practice | Redgram (Sole) | 937 | 21250 | 37781 | 1:2.77 | 937 |
| | Foxtail millet (sole) | 1875 | 16250 | 30625 | 1:2.8 | 744 |
| Improved Practice | Pigeon pea + foxtail millet Inter cropping(1:5) | 607 (Redgram) 1605 ( FT millet ) | 25250 | 53122 | 1:3.10 | 1242 |

## Livelihood and nutritional security through backyard poultry with Rajashri breed

Rajasri, a dual-purpose bird, developed for backyard farming has a great potential due to its versatile capacity to adapt to various climatic conditions. These birds are exclusively raised in the backyards with a capacity of 160-170 eggs/ year. Dr.YSRHU-KVK, Nellore-2 (Periyavaram) popularized rearing of dual purpose Rajashri birds which are highly acclimatized to the jurisdiction of KVK as backyard poultry by providing training on backyard poultry rearing and supplying 5weeks old chicks to SC farmers under SC Sub Plan for enhancement of their income and livelihood in rural areas.

### Performance of Rajasri birds in comparison with desi birds

| S. No. | Practice | Egg Production (Egg/Bird/Year) | COC (Rs.) | Gross Income (Rs./bird/Year) | Net Income (Rs./bird/Year) | B:C ratio |
|---|---|---|---|---|---|---|
| 1 | **Rajasri** | 156 | 670 | 2320 | 1650 | 3.46:1 |
| 2 | **Desi birds** | 54 | 780 | 1530 | 750 | 1.96:1 |

It was also noticed that there was significant increase in consumption of eggs and meat among beneficiary families. Besides the sale of eggs and meat, the farmers were also generating income by continuing the enterprise by reproducing the chicks by using automatic egg incubator which was installed at Dr.YSRHU-KVK, Periyavaram. After witnessing the performance of these Rajasri poultry birds, most of the farmers of Venkatagiri division showed interest in rearing of Rajasri birds as backyard poultry. At present, a total of 20 farmers other than SC farmers from Yathaluru, Bangarupeta, Petluru and Mannuru villages of venkatagiri and Balayapalle mandals have adopted rearing of Rajasri poultry birds as backyard poultry.

**Beneficiaries of Backyard Poultry intervention- Nellore, Andhra Pradesh**

## Transforming turmeric farming in tribal areas – ASR district, Andhra Pradesh

In the Alluri Seetharama Raju (ASR) district of Andhra Pradesh, tribal communities heavily rely on turmeric cultivation as a major source of livelihood. However, traditional post-harvesting methods, including boiling, drying, and polishing, result in high labor costs and low-quality turmeric. These methods are labor-intensive, time-consuming, and inefficient, hindering optimal returns for farmers. Additionally, the use of age-old processing technologies further exacerbates these challenges, limiting economic benefits and quality of the final product. The need for modernization and mechanization in the post-harvest management of turmeric is evident to enhance productivity, reduce costs, and improve quality.

Krishi Vigyan Kendra (BCT) initiated Front Line Demonstrations (FLDs) on Post Harvest Mechanization funded by TSP funds. The plan involved introducing mechanized turmeric boiling and polishing technologies to tribal farmers in the ASR district. This included the demonstration of mini boilers for boiling and motor-mounted turmeric polishers for efficient polishing. The implementation was conducted in three villages, focusing on practical solutions to address the challenges faced by farmers in traditional post-harvesting methods.

Through the implementation of mechanized post-harvest management technologies, significant improvements were achieved in turmeric curing and polishing methods. Boiling time was reduced from 12 to 6 days, and polishing time decreased from 4 to 1 day. Labor costs were substantially reduced, and the quality of turmeric improved, leading to higher market value for the product.

The demonstrations resulted in a 57% decrease in labor for boiling and an 80% reduction in labor costs for polishing. This led to a substantial cost reduction per acre of turmeric cultivation. Additionally, the improved quality of turmeric fetched higher prices in the market, providing farmers with increased incomes. Scaling up these mechanization efforts could lead to significant economic gains, reducing cultivation costs and enhancing efficiency for farmers in the ASR district.

**Demonstration of TNAU model mini boiler**

### Performance of mechanization in turmeric processing

| Results | | | | |
|---|---|---|---|---|
| **Information/acre** | **Demo (Mini Boiler)** | **Farmer's practice (Industrial iron drums)** | **Demo (Motor polisher)** | **Farmer's (Manual polishing)** |
| No. of days required | 06 | 12 | 01 | 04 |
| No. of Labours required | 18 | 36 | 02 | 12 |
| Quantity/day (8hr/day) | 10 q | 6 q | 20 q | 3 q |
| Quality | High | Low | High | Low |
| Price enhancement/kg | -- | -- | 3-5/- | -- |
| Drudgery | Low | High | Very low | High |
| Cost/ acre (Rs.) | 7200 | 12600 | 900 | 4800 |
| Reduction in cost/acre | 57% | -- | 80% | -- |

## Millets fetch millions : Arogya Millet Producing Company

Absence of suitable post harvest processing equipments and value addition technologies are the major constraints for low production and consumption of small millets. Small millets are dehulled manually by women in the tribal areas which include lot of drudgery and hence they usually exchange unprocessed millet grains for paddy with middle men for low prices.

KVK, Vizianagaram established one mega processing millet automated unit worth of 5 crores with the help of A.P Food processing society. Supplied pulverizes, Dal mills, Oil expellers to farmer groups under tribal sub plan. Supplied millet dehulling machine (capacity; 200 kg of seed per hour) in Thumakapalli village of Kothavalasa mandal under TSP. With the support of KVK, they have been preparing 20 types of various millet products and generating 25 tones of foundation seed every year. Conducted trainings on Value addition on locally available produces and entrepreneurship development in convergence with NGO's to improve the quality and commercialization of farmer's produces. Created awareness on improving mother and child nutritional health of tribals in association with Integrated Tribal Development Agency (ITDA).

Nearly 6200 women's were empowered in millet Value addition and Marketing. About fourteen thousand biscuits per day to different governmental organizations like anganwadi centres and social welfare hostels are supplied regularly. A "Millet Canteen" was established in the district collector office to popularize the use of millets among the urban society. The NGO, Sabala established one mega millet processing unit and earning a turnover around One crore rupees.

For the exhaustive work done in revival of millets in tribal areas and also for promotion of millet consumption among women, Smt K Saraswathi has received many appreciations from different organizations like "JayahoMahila Award" from Vizianagaram District Police Department for 2018 & 2019, One MP-One idea contest, got cash award of Rs.1,00,000/- from Shri.Venkaiah Naidu, The Vice President of India and Vijaya Laxmi Das FRIOF women award from Access Development Services, New Delhi. Hon'ble Chief Minister of Andhra Pradesh Shri. Jagan Mohan Reddy inaugurated millets processing unit of worth 5 crores and Ginger, sesamum oil extraction unit of worth 2 crores and she delivered a talk at International Conference held at Kenya from 18.2.24 to 24.4.24 about millets in that conference.

## Raised beds avert damage to cotton from inundation

In Adilabad district, most of the farmers are facing the challenges of excess rainfall, inundation and low cotton yields under rainfed farming in black cotton soils. The traditional flat bed method of cultivation was proving to be inefficient and unsustainable during excess rainfall years. KVK Adilabad demonstrated the raised bed method of cotton cultivation at instructional farm and also at farmers' fields in the year 2022-23. Due to the advantage of this technology many farmers came forward to adopt this technology. More than 100 acres of area has been demonstrated using bed maker. Mr. Laxman is one among the farmers who decided to adopt the Raised Bed method of cotton cultivation with the guidance and recommended practices from the scientists at KVK Adilabad. This technology has advantages such as good crop stand, good aeration, protection from high rainfall and inundation, and less pest and diseases.

The implementation of the Raised Bed method resulted in a significant increase in Laxman's cotton yield. He recorded a yield of 2500 kg per hectare, which is 21.36 percent over the yield from the conventional flat bed method. Laxman's success story serves as an inspiration to other farmers in the district. His net returns of Rs. 108025 per hectare highlight the economic benefits of the Raised Bed method. This method is viable solution to the challenges faced by cotton farmers in the Adilabad district.


**Raised bed method of cultivation**

## Skill training transforms Orchard management in mango – Wanaparthy, Telangana

Sri Peddabavi Shekhar is a farmer from Thirumalaipalle village, Wanaparthy District of Telangana

participated in one week skill based training program conducted under STRY, the component implemented under SMAE by the Ministry of Agriculture . He was introduced to different aspects of 'Orchard management and maintenance" at KVK (ICAR-YFA), Madanapuram, Wanaparthy .

The Skill based training program helped Sri Peddabavi Shekhar to acquire knowledge and skill required for Mango crop Production which encouraged him to cultivate Mango under Ultra High Density Planting(UHDP). He planted Mango

**High Density Planting of Mango – Wanaparthy, Telangana**

var. Baneshan (Banganapalli) in Ultra-high density plantation (UHDP)( 600 trees in an acre), which is a new proven technology, combined with other sustainable agricultural techniques, has the potential to yield 200% more produce than that of the traditional method. Accommodation of the maximum possible number of the plants per unit area to get the maximum possible profit per unit of the tree volume without impairing the soil fertility status is called the high-density planting. Before training, he was able to generate an income of not more than Rs. 1.5 lakhs annually. The implementation of various skills acquired during the training helped him to generate an income of more than Rs 3.6 lakhs per year.

Skills learnt during the training program helped him understand the importance of spacing, growth regulation by the training and pruning, canopy management, use of the mechanical devices, Fertilizer dose, Integrated Nutrient Management, water management, Integrated Pest and Disease Management, vegetative growth and flower management etc., coupled with other crop management practices helped him for a successful cultivation.Sri Peddabavi Shekhar had awarded by “KVK best farmer Award” on account of his overall achievement and accomplishment in the field of Agriculture & Allied Sciences on occasion of Kisan diwas held at Krishi Vigyan Kendra, Madanapuram.

## Integrated nutrient management in Jasmine – Dindigal , Tamil Nadu

A total of 23% of micronutrient deficiencies were noticed in jasmine. These multi-micronutrient deficiencies are responsible for low flower yield of jasmine. These deficiencies have emerged due to the usage of high-analysis fertilizers like urea, DAP, muriate of potash fertilizers, etc., which cause other nutrients to become deficient in the soil and also pose groundwater and environmental pollution.

Diagnostic field visit was made to the farmer’s field where jasmine crop is affected by the micronutrient deficiency. To confirm the problem, soil sample was collected from jasmine’s field for soil testing. Soil sample was analyzed for iron and zinc status. Collected soil was deficient in available Fe and Zn. A soil health card was distributed to the farmers after soil testing for applying balanced fertilizers to enrich the soil fertility with various technologies, such as the application of biofertilizers, namely Azospirillum and Phosphobacteria, each @ 2 kg/ha, the application of neem cake @ 500 g/plant, and vermicompost @ 100 g/plant. Foliar sprays of micronutrients such as ferrous sulphate @ 0.5% and zinc sulphate @ 0.5% at a monthly interval were recommended. Foliar application of panchagavya @ 3% and humic acid @ 0.5% at a monthly interval was recommended. FLD on integrated nutrient management practices in jasmine for higher yield was conducted in the T. Pudhupatty village to alleviate the above problems. Besides, regular field visits and advisory services were given to the farmers for growing jasmine.

The multi-micronutrient deficiencies such as iron and zinc were reduced to 6% in the demo plot from 23%. The percent increase in net income of demo over the check plot was 27.2%. An additional income of Rs. 160208 was earned from the demo plot through the adaptation of INM technologies. 65 farmers have been utilising this technology for cultivating jasmine in the district.

**Advisory on INM to Jasmine farmers – Dindigul, Tamil Nadu**

## Ornamental fish farming as a tool for alternative livelihood- Namakkal, Tamil Nadu

Ornamental fish keeping is the most popular hobby in the world and it is considered to be easy and stress relieving. Mrs. Mahalakhsmi a farmer from Bhimanayakkanur village in Erumapaati block of Namakkal district came in contact with Krishi Vigyan Kendra, Namakkal to get knowledge of ornamental fish culture. After gaining knowledge she started the ornamental fish farming and fish seed production business to fulfill her passion in fish farming. She earns seventy five thousand per annum from this activity. Ornamental fish farming, culture and seed production are included as different activities of self-help groups and also play an important role in maintaining the livelihoods of poor people.

She is also providing permanent employment to many from his her farming business and provides seasonal employment to 7 to 8 people. Most of the entrepreneurs prefer to grow live bearers like guppy, sword tail, platy and mollies. It is mainly due to the reasons such as; easier to grow, heavy demand in the market, fetch more prices, etc.

**Ornamental fish farming – Namakkal, Tamil Nadu**

I achieved hgher yields in chilli through crop diversification and integrated pest control techniques recommended by KVK, Palem. I was able to efficiently control black thrips and obtained 28.2% higher yields than fellow farmers, with an additional net return of Rs. 1,00,650.

**Balakrishna Reddy**
Nagarkurnool, Telangana

# 4. Special Projects

## 4.1. Farmer FIRST Programme (FFP)

Farmer First Programme (FFP) has been implemented by Four ICAR institutes (IIMR, IIOPR, IIOR and CRIDA) and one University (TANUVAS, Chennai) under ATARI, Hyderabad. This project was introduced to involve the practicing farmers for research problem identification, prioritization and to conduct experiments in farmers field utilizing the resources available with the farmers. Main focus of this project is on farmer's Farm, Innovations, Resources, Science and Technology (FIRST). 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.

### Enhancing Farmer-Scientist Interface

FFP centres organized 119 programmes involving 4,708 farmers to enhance Farmer-Scientist Interface, which include trainings programmes, awareness campaigns, exposure visits, animal health camps, field days, interface meetings, and other extension activities. Through these initiatives, the centres aimed to enhance farmer-scientist interaction, disseminate knowledge on improved agricultural practices, and address key challenges faced by farmers. During these interactions, scientists will identify farm innovators and groom them as technology agents for farmer-to-farmer technology dissemination, up-scaling and out scaling.


**Fig 1. ICAR-IIOPR Scientists interacting with farmers**

### Technology Assemblage, Application and Feedback

FFP centres demonstrated 69 technologies covering 2327 ha area and 6589 households in the operational villages. 34 crop-based technologies were demonstrated in 1735 ha area, five horticultural interventions were demonstrated in 75 ha and 9 NRM technologies were demonstrated in 517 ha. In livestock module, 6 technologies were demonstrated involving 978 animals. Five enterprises were established for the benefit of 322 households. Some of the successful technologies were presented below.

Under crop production module FFP centres successfully demonstrated the yield advantage of improved genotypes of sorghum, foxtail millet, finger millet, pearl millet, barnyard millet, kodo millet, little millet, redgram, Safflower Chickpea Groundnut. Among the millets sorghum hybrid CSH 41 gave highest yield advantage of 16 percent over the farmers practice which increased income by 27 percent. CSH 41 is a high yielding recently released hybrid (2018) which has bigger size panicles with good quality grain and fodder. It is tolerant to foliar diseases, shoot fly, stem borer and mites and resistant to midge compared to other cultivars. During *kharif* 2023, ICAR-IIMR organized 17 demonstrated in five villages. Similarly redgram variety WRGE 97 was demonstrated in 60 trials in six villages covering 24 ha. This variety gave 12.75 q/ha yield which was 66 percent higher than the farmers practice. ICAR-IIMR also demonstrated redgram as an intercrop in sorghum and pearl millet with 2:2 ratio and in foxtail with 2:1 ratio. Sorghum+ redgram intercropping was found to be more profitable (Rs. 1,28,410/ ha) when compared with, pearl millet+ redgram and foxtail millet+ redgram

**Fig 2. Field view of CSH 41**

Renovation of community based Check dam was taken up by ICAR-CRIDA in Gangupally village enhanced the water harvesting capacity benefitting of 30 acres of 40 farmers. Conserved water was used for supplemental irrigation in redgram which enhanced the yield of redgram by 25 percent.

**Fig 3. Check dam renovated by ICAR-CRIDA**

ICAR-IIOPR demonstrated intercropping in Coconut and Oil Palm plantations with cocoa/ pepper/bush pepper/ heliconia/ red ginger in 16 ha for getting additional income through better utilization of horizontal and vertical space.

ICAR-IIOPR demonstrated Weather based irrigation scheduling in oil palm which Saved irrigation by 50-60% , fertilizer quantity (50%) and cent percent labour cost and obtained higher yield. Electricity consumption was also reduced. Saved irrigation and power was used to extend irrigation to other crops which generated an additional income.


**Fig 4. Awareness programme on weather based irrigation scheduling in oil palm by ICAR-IIOPR**

Ridge and furrow method was demonstrated by ICAR-IIOR in in 7.5 hectares. This method realized an additional net income of Rs. 9,089 per hectare with a productivity enhancement of 18.06%.

Improved strains of backyard poultry (Aseel, Siruvidai, Peruvidai, Nandanam 4 and Kadaknath) was introduced in the project area by TANUVAS along with feed management. A total of 22 farm women adopted the rearing improved strains of backyard poultry birds households, thereby improving their nutritional enrichment of their children and subsidiary source of income.

**Backyard poultry promoted by TANUVAS**

TANUVAS successfully demonstrated Teat Protect Spray to prevent Mastitis in cattle with the motto of “Prevention is better than cure”. 250 animals were treated with Teat Protect Spray. Treated dairy cattle showed zero Mastitis incidence thereby avoiding the economic loss due to Mastitis. Thus, the intervention assisted in improved milk production and promoted clean milk production.

**Woman farmer treating the cow with Teat Protect Spray**

Establishing partnerships and institutions were carried out by the project centres to get technology, critical inputs, for marketing of produce and dissemination of information. Linkages were established with technology providers such as SAUs, ICAR research institutes, state departments of agriculture, horticulture, veterinary, Marketings Federations NABARD private and public input suppliers, village level institutions such as gram panchayats, producer organizations, cooperatives etc.

## Enterprise module

ICAR-IIMR trained two women groups roti and papad making with power-operated *roti* making machine and linked with an entrepreneur to promote their business. of *roti* selling in and around Hyderabad city. Each unit is earning about Rs. 21,350 per month as net profit.

A primary processing unit (PPU) was also established in Gangapur village of Sangareddy district in collaboration with an NGO-based enterprise (SS Bhavani Foods Pvt. Ltd.)

ICAR-IIOR initiated Value addition and marketing of redgram and groundnut through primary process and marketing with 17 farm families which resulted in additions net income increased income.

## Content Mobilization

Under Content Mobilization component FFP centres identified available transferrable technologies with different institutions and establishment of content management platform enabling off and online access. Seven whatsapp groups were created and the information was exchanged by means of messages. Similarly Ten leaflets/booklets/bulletins were prepared and distributed to the farmers. Millets FIRST android app app was developed by ICAR-IIMR on production technologies of millets, their processing, including market information for millet producers and stakeholders. ICAR-IIOR also established a content management platform to provide access to offline and online resources in the local language


**Millet first app developed by ICAR-ICAR-IIMR**

**Leaflet on soil and water conservation: ICAR-IIOR**

## 4.2. National Initiative on Climate Resilient Agriculture (NICRA)

The technology demonstration component (TDC) of the project National Initiative on Climate Resilience Agriculture (NICRA) is the second major component of the project that has been implemented since 2011 to demonstrate the ability of available and newly developed technologies to impart resilience to Indian agriculture and to enhance the coping capacity of the farmers to climatic variabilities in 151 climatically vulnerable districts . During the year 2023, 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 ( Table.4.2.1). The adopted villages under TDC- NICRA were divided into farming system typologies and technology packages from NRM, crop and livestock production modules were chosen to address the soil, water , crop and weather related constraints faced by each of the farming system typology. The technology packages were demonstrated at household level and the impact of the same was recorded against a baseline collected earlier. Amond the eight KVKs, 6 addressed drought and one each addressed floods and cyclones as the major climatic vulnerability of the district. The KVKs conducted 364, 875,940 and 448 demonstrations benefitting 680, 1310, 1000 and 807 farmers under NRM, crop, livestock and institutional interventions modules respectively. A total of 45.33 t of seed and 194564 numbers of fodder slips were supplied to the needy farmers through seed and fodder bank respectively. The KVKs also conducted 85 capacity building programs and 64 extension activities benefitting 3481 and 4285 farmers respectively for bringing awareness on climate resilient technologies and for enhancing the climate literacy of the clientele. During 2023-24, Kurnool and Perambalur experience drought situation and Srikakulam, Ramnad, Villuppuram and Karaikal had excess rainfall compared to decennial average.

**Table 4.2.1. List of KVKs implementing TDC-NICRA in Zone X**

| S. No | Name of the KVK | Long term average of Rf (mm) | Rf during 2023-24 (mm) | % Deviation | Major climatic vulnerability |
|---|---|---|---|---|---|
| **Andhra Pradesh** | | | | | |
| 1 | Anantapur (Reddipalli) | 489.3 | 491.2 | **0.39** | Drought |
| 2 | Kurnool(Yagantipalli) | 633 | 429.5 | -32.15 | Drought |
| 3 | Srikakulam (Amadalavalasa) | 1202.75 | 1461.2 | 21.49 | Floods |
| **Telangana** | | | | | |
| 4 | Adilabad | 1157 | 1122.3 | -3.00 | Drought and heavy rains |
| **Tamil Nadu** | | | | | |
| 5 | Perambalur | 887 | 768.28 | -13.38 | Drought |
| 6 | Ramanathapuram | 827 | 1089.3 | 31.71 | Drought |
| 7 | Villupuram-1 | 1238.7 | 1606.35 | 29.68 | Drought |
| **Puducherry** | | | | | |
| 8 | Karaikal | 1354.64 | 1755.1 | 29.56 | Cyclones |

**Table 4.2.2. Natural Resource Management Interventions taken up during the year 2023-24**

| Name of the KVK | No. of Demonstrations/ Interventions | Farmers covered | Area covered (ha) |
|---|---|---|---|
| Anantapur (Reddipalli) | 47 | 195 | 78 |
| Kurnool (Yagantipalli) | 20 | 15 | 20 |
| Srikakulam | 2 | 40 | 20 |
| Adilabad | 135 | 135 | 18 |
| Ramanathapuram | 76 | 175 | 78 |

| Name of the KVK | No. of Demonstrations/ Interventions | Farmers covered | Area covered (ha) |
|---|---|---|---|
| Villuppuram | 20 | 20 | 8 |
| Perambalur | 4 | 40 | 16 |
| Karaikal | 60 | 60 | 60 |
| **Total** | **364** | **680** | **298** |

### Table 4.2.3. Crop Production Interventions taken up during the year 2023-24

| Name of the KVK | No. of Demonstrations/ Interventions | Farmers covered | Area covered (ha) |
|---|---|---|---|
| Anantapur (Reddipalli) | 118 | 118 | 37.2 |
| Kurnool (Yagantipalli) | 125 | 147 | 96.8 |
| Srikakulam | 43 | 456 | 180.8 |
| Adilabad | 146 | 146 | 58.4 |
| Ramanathapuram | 176 | 176 | 58 |
| Villuppuram | 107 | 107 | 46 |
| Perambalur | 10 | 10 | 4 |
| Karaikal | 150 | 150 | 49.5 |
| **Total** | **875** | **1310** | **477.5** |

### Table 4.2.4. Livestock and Fisheries Interventions taken up during the year 2023-24

| Name of the KVK | No. of Demonstrations/ Interventions | Farmers covered | No. of animals covered | Area covered (ha) |
|---|---|---|---|---|
| Anantapur (Reddipalli) | 187 | 187 | 915 | 4 |
| Kurnool (Yagantipalli) | 220 | 220 | 620 | 0.8 |
| Srikakulam | 38 | 81 | 195 | 0.15 |
| Adilabad | 113 | 200 | 440 | 24 |
| Ramanathapuram | 135 | 135 | 1000 | 9 |
| Villuppuram | 60 | 60 | 280 | 3 |
| Karaikal | 117 | 117 | 1170 | 2 |
| **Total** | **940** | **1000** | **4620** | **42.95** |

### Table 4.2.5. Institutional interventions taken up during 2023-24

| Name of the KVK | Performance of custom hiring centre | | Performance of seed bank | | Performance of fodder bank | |
|---|---|---|---|---|---|---|
| | Farmers (No.) | Area (ha) | Farmers (No.) | Qty of seed(t) | Farmers (No.) | fodder slips supplied (No.) |
| Anantapur (Reddipalli) | 13 | 25 | 4 | 2.26 | 20 | 1,60,000 |
| Kurnool (Yagantipalli) | 26 | 46 | 7 | 6.15 | 20 | 34 |
| Srikakulam | 120 | 50 | 15 | 35 | 25 | 15013 |
| Adilabad | 146 | 880 | 90 | 1 | 0 | 0 |
| Ramnad | 90 | 30 | 0 | 0 | 20 | 10000 |
| Villuppuram | 0 | 0 | 2 | 0.92 | 0 | 0 |
| Peramblur | 20 | 10 | 0 | 0 | 0 | 0 |
| Karaikal | 33 | 15 | 0 | 0 | 117 | 9517 |
| **Total** | **448** | **1056** | **118** | **45.33** | **202** | **194564** |

**Table 4.2.6. Capacity Building (HRD) activities taken up during the year 2023-24**

| Name of the KVK | No. of training programmes | No. of beneficiaries |
|---|---|---|
| Anantapur (Reddipalli) | 1 | 406 |
| Kurnool (Yagantipalli) | 8 | 269 |
| Srikakulam | 31 | 1360 |
| Adilabad | 6 | 180 |
| Ramnad | 12 | 510 |
| Villuppuram | 6 | 235 |
| Peramblur | 4 | 95 |
| Karaikal | 17 | 426 |
| **Total** | **85** | **3481** |

**Table 4.2.7. Extension activities taken up during 2023-24**

| Name of the KVK | No. of training programmes | No. of beneficiaries |
|---|---|---|
| Anantapur (Reddipalli) | 7 | 748 |
| Kurnool (Yagantipalli) | 13 | 581 |
| Srikakulam | 5 | 790 |
| Adilabad | 7 | 205 |
| Ramnad | 7 | 1200 |
| Villuppuram | 5 | 372 |
| Peramblur | 16 | 204 |
| Karaikal | 4 | 185 |
| **Total** | **64** | **4285** |

### Evidences of resilience built through demonstrations during 2023-24

The following is an account of performance of select impactful climate resilient technologies under NRM, Crop, Livestock and institutional interventions modules during 2023-24

### NRM interventions

Several *Ex-situ* and *In-situ* water harvesting and conservation interventions were demonstrated in NICRA villages during 2023-24. The benefits accrued through some of the impactful demonstrations have been presented in the following tables.

**Table 4.2.8. Supplemental irrigation to Sesame during rabi with harvest water – Srikakulam**

| Treatments | Seed yield (kg/ha) | Cost of cultivation (Rs./ha) | Gross income (Rs./ha) | Net income (Rs./ha) | B:C ratio |
|---|---|---|---|---|---|
| Farmers practice | 375 | 17,800 | 41,250 | 23,450 | 2.31 |
| Supplemental irrigation with harvested water | 470 (25.33 % increase) | 18,500 | 54,050 | 35,550 (12100 additional) | 2.92 |

**Table 4.2.9. Zero tillage cultivation in rice fallows- Srikakulam**

| Treatments | Seed yield (kg/ha) | Cost of cultivation (Rs/ha) | Gross Income (Rs/ha) | Net income (Rs/ha) | B:C ratio |
|---|---|---|---|---|---|
| Farmers practice | 6520 | 58,750 | 1,36,920 | 78,170 | 2.33 |
| Water saving technology | 7530 (15.49 % increase) | 53,750 | 1,58,130 | 1,04,380 (26210 additional) | 2.94 |


Upscaling of zero tillage in maize – Srikakulam, Andhra Pradesh

### Table 4.2.10. Performance of raised bed method of cotton cultivation- Adilabad, Telangana

| Treatments | Seed yield (kg/ha) | Cost of cultivation (Rs./ha) | Gross income (Rs./ha) | Net income (Rs./ha) | B:C ratio |
|---|---|---|---|---|---|
| Farmer's practice (Flat bed) | 1550 | 61250 | 108810 | 47560 | 1.78 |
| Raised Bed (Demonstration) | 1875 | 57500 | 131625 | 74125 | 2.3 |

## Crop interventions

### Table 4.2.11. Performance of drought tolerant Bengal gram variety, NBeG-452 - Kurnool

| Treatments | Seed yield (kg/ha) | Cost of cultivation (Rs/ha) | Gross income (Rs/ha) | Net income (Rs/ha) | B:C ratio |
|---|---|---|---|---|---|
| Farmers practice (JG-11) | 812 | 28750 | 44660 | 15910 | 1:1.55 |
| Improved varieties (NBeG-452) | 962 | 29450 | 52910 | 23460 | 1:1.79 |


Drought tolerant Bengal gram variety, NBEG-452 – Kurnool, Andhra Pradesh

## Livestock interventions

### Table 4.2.12. Influence of mineral mixture on productivity of livestock – Srikakulam

| Treatments | Average milk yield/ animal (L/day) | Total milk yield per animal (L/60days) | Cost of feeding (Rs/animal) | Gross Returns (Rs/animal) | Net returns (Rs/animal) |
|---|---|---|---|---|---|
| Farmers practice | 6.4 | 384 | 4800 | 17280 | 12480 |
| FP + Mineral mixture | 8.2 | 492 | 5500 | 22140 | 15940 |

### Table 4.2.13. Production and economics of rearing fish in farm pond

| Treatments | Yield in kg/unit size of pond | Cost of production/unit size of pond | Gross income (Rs/unit) | Net income (Rs/unit) | B:C ratio |
|---|---|---|---|---|---|
| Local species | 1265 | 60000 | 94930 | 34930 | 1.58 |
| Improved species | 1500 | 68000 | 133000 | 65000 | 1.95 |

**Field day at a fishpond – Srikakulam, Andhra Pradesh**

## Institutional interventions

### Table 4.2.14. Performance of fodder bank in the village – Anantapur

| Fodder variety | Number of farmers benefitted | Area under fodder (ha) | Quantity fodder slips procured for fodder bank (Kg) | Quantity of fodder produced during deficit period (t) | Quantity of fodder sold to the needy members (t) | Amount realized due to sale of fodder from the bank (Rs.) |
|---|---|---|---|---|---|---|
| Super napier | 5 | 2 | 50,000 | 120 | 30 | 66000 |
| Co Fs -31 | 5 | 2 | 30,000 | 94 | 12 | 24000 |


**Fodder bank – Anantapur , Andhra Pradesh**

## Convergence efforts for scaling up

The KVKs of the zone attempted to upscale the promising climate resilient technologies demonstrated over years through convergence with line departments with an aim to share the benefit of the demonstrations to a large number of clienteles. One such example of upscaling achieved by KVK, Srikakulam is presented in Table 4.2.15.

**Table 4.2.15. Upscaling of technologies achieved by KVK, Srikakulam through convergence**

| Village name | Technology scaling up/out | No. of farmers reached | Convergence with the programme | Approx. amount mobilised from department (lakhs) |
|---|---|---|---|---|
| Sirusuwada, V N puram, Kondavalasa, Isukalapalem | Upscaling of flood tolerant paddy varieties | 150 | Department of Agriculture | 2,36,250 |
| | Real time contingency in paddy field | 100 | Department of Agriculture | 1,98,800 |
| | Weed management | 80 | Department of Agriculture | 2,25,000 |
| | ICM in Zero Tillage Mize | 60 | Department of Agriculture | 1,94,700 |
| | ICM in Rice fallow pulses | 40 | Department of Agriculture | 93,600 |
| | ICM in Sesamum | 20 | Department of Agriculture | 41,800 |
| | Introduction of improved perennial fodder varieties | 20 | Department of veterinary | 25,000 |

## Success story on mitigation of green fodder scarcity under NICRA project – KVK, Kurnool

**Domain of the study:**

The project was implemented in Charlakothuru villages of Banaganapalli since 2017. The livestock population of the village during 2017 was 420 which include buffaloes and their off springs.

**Problem:**

The buffaloes were allowed to graze entire day in the available barren land where there was not much of grass to meet their requirement. The fodder area was only 1.5 acres with APBN-1 hybrid napier variety during 2017. Dry fodder like paddy straw and sorghum straw were majorly fed to the animals in little quantity. There was shortage of 86% green fodder and 47.7% dry fodder in the village during 2011.

**Activities implemented:**

To overcome the problem of green fodder scarcity, the following activities were taken up in the village. Awareness programmes were conducted and emphasized about the importance of green fodder.

**Establishment of fodder bank:**

Fodder bank was established in the village under NICRA project in an area of 3.0 acres with high yielding hybrid Napier varieties *viz.,* Super Napier during 2017. Fodder stem cuttings were supplied to the farmers from this fodder bank in the village. The fodder was also shared by 10 land less poor farmers. Further, stem cuttings from this fodder bank were supplied to individual farmers for cultivation of green fodder at their own farm.

**Fodder bank in the NICRA village – Kurnool, Andhra Pradesh**

**Outcome of the intervention**

With this effort, the fodder area in the village h increased from 3.0 acres in 2017 to 26.0 acres in 2023. The green fodder shortage was reduced from 86.16% to 36.36% within six years of NICRA project.

**Visit of Zonal monitoring Committee to KVK, Perambalur, Tamil Nadu**

The Zonal Monitoring Committee of TDC-NICRA of Zone X Chaired by Dr. P.Gidda Reddy visited Krishi Vigyan Kendra ("Farm Science Centre") Perambalur under the administrative control of the NGO, Hans Rover . The committee visited the NICRA adopted villages of the KVK to monitor the progress of interventions in NRM, Crop and livestock modules in different farming system typologies of the villages. The committee also interacted with the VCRMC of the 4 cluster adopted villages and also examined the status and functioning of the Custom Hiring Centre of the project. This was followed by the visit to the KVK, where the committee attended a presentation by the head of the KVK, Dr. Netaji Mariappan on the progress of the KVK since the inception of NICRA project in the KVK. Feed back and suggestions were given by the committee during field visits, VCRMC meeting and also during the presentation by the head of the KVK.


**Field visit by ZMC to interventions in a NICRA adopted village**

## 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 endeavour 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 81 trainings were conducted on various enterprises viz., Apiary, Bio Inputs Production, Drone pilot license programme, Fishery, Goat and sheep farming, Integrated Farming System, Mushroom production, Nursery management, Poultry, Value Addition and Vermicompost production by ARYA KVKs in which 2210 youth were trained (Table 4.3.1). Out of them, 727 youth have established 421 enterprise units. State, KVK and enterprise wise trainings conducted, youth trained, and enterprises established are furnished in Table 4.3.2. Maximum number of 446 youth were trained in Value addition followed by 443 youth in poultry, 347 in mushroom production and 344 in Nursery management. A total of 189 youth has established 87 enterprises in Nursery.

**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 | 6 | 144 | 13 | 13 |
| Bio Inputs Production | 2 | 78 | 7 | 1 |
| Dairy | 5 | 65 | 25 | 25 |
| Fishery | 3 | 90 | 63 | 46 |
| Goat and sheep farming | 2 | 49 | 32 | 23 |
| IFS | 8 | 187 | 69 | 20 |
| Mushroom production | 8 | 347 | 48 | 45 |
| Nursery management | 13 | 344 | 189 | 87 |
| Poultry | 17 | 443 | 162 | 61 |
| Value Addition | 16 | 446 | 116 | 97 |
| Vermicompost production | 1 | 17 | 3 | 3 |
| **Total** | **81** | **2210** | **727** | **421** |

**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 | 50 | 2 | 2 |
| Nursery management | 1 | 30 | 1 | 1 |
| Value addition | 2 | 63 | 4 | 4 |
| Vermicompost production | 2 | 60 | 26 | 26 |
| **Total** | **7** | **203** | **33** | **33** |
| **West Godavari (VR Gudem)** | | | | |
| Apiary | 1 | 25 | 2 | 4 |
| IFS | 1 | 19 | 19 | 10 |
| Poultry | 2 | 60 | 60 | 20 |
| Value addition | 6 | 141 | 2 | 2 |
| **Total** | **10** | **245** | **83** | **36** |
| **Kadapa (Utukur)** | | | | |
| Mushroom production | 2 | 32 | 15 | 14 |
| Nursery management | 2 | 144 | 6 | 3 |
| Value addition | 2 | 61 | 45 | 3 |
| Vermicompost production | 2 | 91 | 13 | 13 |
| **Total** | **8** | **328** | **79** | **33** |
| **Total (AP)** | **25** | **776** | **195** | **102** |
| **Telangana** | | | | |
| **Nalgonda (Kampasagar)** | | | | |
| IFS | 1 | 30 | 13 | 13 |
| Nursery management | 1 | 30 | 0 | 0 |
| Value addition | 1 | 30 | 11 | 11 |
| Vermicompost production | 1 | 30 | 3 | 3 |
| **Total** | **4** | **120** | **27** | **27** |
| **Warangal (Malyal)** | | | | |
| Nursery management | 1 | 30 | 0 | 0 |
| Poultry | 1 | 30 | 0 | 0 |
| Value addition | 1 | 28 | 28 | 28 |
| Vermicompost production | 1 | 30 | 0 | 0 |
| **Total** | **4** | **118** | **28** | **28** |
| **Total (TS)** | **8** | **238** | **55** | **55** |
| **Tamil Nadu** | | | | |
| **Dharmapuri** | | | | |
| Goat and sheep farming | 3 | 90 | 63 | 46 |
| Mushroom production | 2 | 60 | 50 | 2 |
| Vermicompost production | 1 | 30 | 20 | 1 |
| **Total** | **6** | **180** | **133** | **49** |
| **Sivagangai** | | | | |
| Fishery | 5 | 65 | 25 | 25 |
| Nursery management | 3 | 113 | 41 | 41 |
| Poultry | 5 | 144 | 62 | 62 |
| Vermicompost production | 6 | 103 | 44 | 44 |
| **Total** | **19** | **425** | **172** | **172** |
| **Kanyakumari** | | | | |
| Apiary | 2 | 44 | 3 | 1 |

| State/KVK/Enterprise | No. of Trainings | No. of Youth trained | No of Youth established units | No. of enterprises established |
|---|---|---|---|---|
| Mushroom production | 2 | 45 | 2 | 2 |
| Poultry | 1 | 25 | 2 | 2 |
| Value Addition in Banana | 1 | 23 | 6 | 6 |
| Value Addition in Coconut | 1 | 25 | 4 | 4 |
| Vermicompost production | 1 | 23 | 5 | 5 |
| **Total** | **8** | **185** | **22** | **20** |
| **Erode** | | | | |
| Apiary | 3 | 75 | 8 | 8 |
| Bio Inputs Production | 2 | 78 | 7 | 1 |
| Poultry | 4 | 85 | 65 | 3 |
| Value Addition | 3 | 72 | 62 | 3 |
| Vermicompost production | 2 | 79 | 5 | 5 |
| **Total** | **14** | **389** | **147** | **20** |
| **Total (TN)** | **47** | **1179** | **474** | **261** |
| **Puducherry** | | | | |
| **Puducherry** | | | | |
| Drone pilot license programme | 1 | 17 | 3 | 3 |
| **Total** | **1** | **17** | **3** | **3** |
| **Grand Total** | **81** | **2210** | **727** | **421** |

**Commercial shade-net vegetable nursery – KVK Nalgonda, Kampasagar, TS**

**Backyard poultry enterprise – KVK West Godavari (VR Gudem), AP**


**Vermicompost sieving machine – KVK Sivagangai, TN**


**Handicrafts from Banana fibre – KVK Kanyakumari TN**

**Mushroom production enterprise – KVK Kanyakumari TN**


## 4.4. Cluster Frontline Demonstrations on Pulses under NFSM

CFLDs on pulses programme was implemented by 63 KVKs in the Zone during 2023-24 *kharif*, *rabi* and summer seasons in Tamil Nadu, Andhra Pradesh, Telangana and Puducherry. A total of 7699 demonstrations were conducted in 3582.2 ha on blackgram and redgram (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 711 demonstrations on blackgram (450), and redgram (261) in *kharif*, blackgram (1612 demonstrations) in *rabi*; blackgram (281 demonstrations) in summer seasons in 1100.40 ha area. KVKs in Andhra Pradesh conducted 1989, 1186 and 25 demonstrations in 1012, 559.6 and 10 ha, during *kharif* and *rabi* and summer seasons, respectively. KVKs of Telangana conducted 1516, 244 and 60 demonstrations in 740, 99.2 and 30 ha area during *kharif*, *rabi* and summer seasons, respectively while KVKs in Puducherry conducted 75 demonstrations on blackgram during *rabi* season in 30 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 2023-24**

| 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 | 190 | 180 | 450 | 90 | 83.2 | 157 | 40 | 40 | 100 | | | | 320 | 303.2 | 707 |
| Redgram | 110 | 104.4 | 261 | 930 | 928.8 | 1832 | 730 | 700 | 1416 | | | | 1770 | 1733.2 | 3509 |
| **Total *Kharif*** | **300** | **284.4** | **711** | **1020** | **1012** | **1989** | **770** | **740** | **1516** | | | | **2090** | **2036.4** | **4216** |
| ***Rabi*** | | | | | | | | | | | | | | | |
| Blackgram | 720 | 680 | 1612 | 580 | 559.6 | 1186 | 120 | 99.2 | 244 | 30 | 30 | 75 | 1450 | 1368.4 | 3117 |
| **Total *Rabi*** | **720** | **680** | **1612** | **580** | **559.6** | **1186** | **120** | **99.2** | **244** | **30** | **30** | **75** | **1450** | **1368.4** | **3117** |
| **Summer** | | | | | | | | | | | | | | | |
| Blackgram | 150 | 136 | 281 | 10 | 10 | 25 | 30 | 31 | 60 | | | | 190 | 177 | 366 |
| **Total Summer** | **150** | **136** | **281** | **10** | **10** | **25** | **30** | **31** | **60** | | | | **190** | **176** | **85** |
| **Grand Total** | **1170** | **1100.4** | **2604** | **1610** | **1581.6** | **3200** | **920** | **870.2** | **1820** | **30** | **30** | **75** | **3730** | **3582.2** | **7699** |

*(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 ADT 6, VBN 8, VBN 10 and VBN 11 were demonstrated during *kharif, rabi* and summer seasons (Table 4.4.2). In summer 8.51 q/ha was recorded by VBN 11 and 8.33 q/ha by variety ADT 6 and VBN 8 recorded 6.90 q/ha wherein the increase in yield over check varieties were 21.23, 25.26 and 15.19 per cent, respectively.

In *kharif, rabi* and summer seasons variety VBN 11 showed average yields of 20.43, 25.29 and 21.23 percent over check varieties, respectively. Variety VBN 10 recorded 8.50 q/ha in *kharif* and 8.48 in *rabi* over 7.55 and 7.47 q/ha in check variety.

Among the varieties, VBN 11 gave the highest yield of 9.88 q/ha in Namakkal district (Table 4.4.3).

### Redgram

Redgram variety CO 8 and LRG 52 were demonstrated during *kharif* season. LRG 52 gave an average yield of 12.57 q/ha as against 10.97 q/ha in check. The highest yield of 19.2 q/ha was recorded by variety LRG 52 in Theni district.

### Andhra Pradesh

### Blackgram

Varieties VBN 8 and LBG 884 were demonstrated during *kharif* with an average yield of 12.52 and 6.71 q/ha as against 10.02 and 5.40 q/ha in check varieties. In *rabi* season, GBG 01, LBG 752, LBG 787, LBG 884, LBG 904, VBN 8 and TBG 104 were demonstrated. Among the varieties, TBG 104 gave the highest average yield of 27.0 q/ha in Kurnool (Banavasi).

### Redgram

Redgram varieties LRG 52, LRG 105, TRG 59 and PRG 176 were demonstrated during *kharif* season where in the yields were 7.46, 9.09, 9.08 and 4.13 q/ha as against 6.08, 7.69, 7.26 and 3.91 q/ha in check varieties, respectively. Among the varieties the highest yield of 22.10 q/ha was recorded by TRG 59 in Kurnool (Yagantipalle).

### Telangana

### Blackgram

During *kharif* season, varieties GBG 1 and MBF 1080 were demonstrated where in the yields were 5.24 and 49.04 per cent higher than check varieties. In *rabi* season, varieties TBG 104, PU 31, GBG 1 and MBG 1080 were demonstrated where in the yields were 11.11, 49.01, 43.05 and 52.94 per cent higher than check varieties. The highest yields recorded by the four varieties were 13.75, 15.82, 23.11 and 14.60 q/ha. During summer season, varieties PU 31 was demonstrated with an average yield of 20.48 q/ha as against 15.48 q/ha.

### Redgram

Redgram varieties TDRG 4, WRG 93, PRG 176 and WRGe 97 were demonstrated by KVKs in Telangana where the average yields in demonstrations were 12.15, 6.19, 13.97 and 11.96 q/ha as against 10.27, 5.95, 11.52 and 9.10 q/ha. Among the varieties TDRG 4, and WRGe 97 gave the highest yields of 22.50 and 23.0 q/ha.

### Puducherry

In Puducherry, blackgram variety VBN 11 was demonstrated during *rabi* season by KVK Karaikal where the average yield was 6.07 q/ha as against 5.12 q/ha in check.

**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 10 | Erode | 8.50 | 7.55 | 12.58 |
| Blackgram | VBN 11 | Dharmapuri, Dindigul, Madurai, Namakkal | 8.37 | 6.95 | 20.43 |
| Blackgram | VBN 8 | Theni, Tiruvannamalai | 7.87 | 6.98 | 12.75 |
| Redgram | LRG 52 | Dharmapuri, Krishnagiri, Salem, Theni | 12.57 | 10.97 | 14.59 |
| Redgram | CO 8 | Karur | 5.24 | 4.15 | 26.27 |
| ***Rabi*** | | | | | |
| Blackgram | VBN 10 | Erode | 8.48 | 7.47 | 13.52 |
| Blackgram | VBN 11 | Dindigul, Kancheepuram, Madurai, Salem, Tirunelveli, Villupuram, Villupuram-II, Virudhunagar | 7.58 | 6.05 | 25.29 |
| Blackgram | VBN 8 | Ariyalur, Cuddalore, Krishnagiri, Nagapattinam, Pudukkottai, Theni, Tiruvallur, Tiruvannamalai, Thiruvarur, Vellore | 7.77 | 6.18 | 25.73 |

| State/ Season/ Crop | Variety | KVKs | Average Yield (q/ha) | | % Increase |
|---|---|---|---|---|---|
| | | | Demo | Check | |
| **Summer** | | | | | |
| Blackgram | ADT 6 | Cuddalore | 8.33 | 6.65 | 25.26 |
| Blackgram | VBN 11 | Madurai, Perambalur | 8.51 | 7.02 | 21.23 |
| Blackgram | VBN 8 | Tiruchirappalli | 6.90 | 5.99 | 15.19 |
| **Andhra Pradesh** | | | | | |
| ***Kharif*** | | | | | |
| Redgram | LRG 105 | Anantapur (Reddipalli), Chittoor (RASS), Chittoor (Kalikiri), Guntur (Lam), Kadapa (Utukur) | 9.09 | 7.69 | 18.23 |
| Redgram | PRG 176 | Anantapur (Kalyandurg) | 4.13 | 3.91 | 5.63 |
| Redgram | LRG 52 | Krishna (Garikapadu), Visakhapatnam (BCT), Visakhapatnam (Kondempudi), Vizianagaram | 7.46 | 6.08 | 22.70 |
| Redgram | TRG 59 | Kurnool (Yagantipalli), Kurnool (Banavasi) | 9.08 | 7.26 | 25.07 |
| Blackgram | VBN 8 | Kurnool (Yagantipalli) | 12.52 | 10.02 | 24.95 |
| Blackgram | LBG 884 | Anantapur (Reddipalli), Vizianagaram | 6.71 | 5.40 | 24.26 |
| ***Rabi*** | | | | | |
| Blackgram | GBG 01 | Kadapa (Utukur) | 5.93 | 5.38 | 10.22 |
| Blackgram | LBG 752 | Krishna (Ghantasala) | 14.39 | 10.72 | 34.24 |
| Blackgram | LBG 787 | Srikakulam, Vizianagaram | 9.75 | 6.44 | 51.32 |
| Blackgram | LBG 904 | Anantapur (Reddipalli), East Godavari (Pandirimamidi), West Godavari (Undi) | 10.45 | 9.22 | 13.34 |
| Blackgram | LBG 884 | Krishna (Garikapadu), Visakhapatnam (Kondempudi), West Godavari (VR Gudem) | 12.84 | 10.19 | 26.01 |
| Blackgram | TBG 104 | Kurnool (Banavasi), Nellore, Nellore (Periyavaram), Visakhapatnam (BCT) | 11.00 | 9.55 | 15.18 |
| Blackgram | VBN 8 | Kurnool (Yagantipalli) | 21.61 | 17.63 | 22.58 |
| **Telangana** | | | | | |
| ***Kharif*** | | | | | |
| Redgram | PRG 176 | Mahabubnagar (Palem), Nalgonda (Kampasagar) | 13.97 | 11.52 | 21.27 |
| Redgram | TDRG 4 | Mancherial (Bellampalli), Medak (DDS), Medak (Tuniki) | 12.15 | 10.27 | 18.31 |
| Redgram | WRG 93 | Warangal (Mamnoor) | 6.19 | 5.95 | 4.03 |
| Redgram | WRGe 97 | Adilabad, Khammam (Wyra), Khammam (Kothagudem), Karimnagar (Jammikunta), Karimnagar (Ramagirikhilla), Mahabubnagar (YFA), Nalgonda (Gaddipally), Warangal (Malyal) | 11.96 | 9.10 | 31.43 |
| Blackgram | GBG 1 | Medak (DDS) | 7.03 | 6.68 | 5.24 |
| Blackgram | MBG 1080 | Warangal (Malyal) | 11.64 | 7.81 | 49.04 |
| ***Rabi*** | | | | | |
| Blackgram | TBG 104 | Khammam (Wyra) | 12.50 | 11.25 | 11.11 |
| Blackgram | PU 31 | Karimnagar (Ramagirikhilla) | 15.08 | 10.12 | 49.01 |
| Blackgram | GBG 1 | Mahabubnagar (YFA), Mahabubnagar (Palem) | 15.95 | 11.15 | 43.05 |
| Blackgram | MBG 1080 | Warangal (Malyal) | 11.96 | 7.82 | 52.94 |
| **Summer** | | | | | |
| Blackgram | PU 31 | Khammam (Kothagudem) | 20.41 | 15.48 | 31.85 |
| **Puducherry** | | | | | |
| ***Rabi*** | | | | | |
| Blackgram | VBN 11 | Karaikal | 6.07 | 5.12 | 18.40 |

## 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 10 | 8.62 | Erode |
| Blackgram | VBN 11 | 9.88 | Namakkal |
| Blackgram | VBN 8 | 8.89 | Tiruvannamalai |
| Redgram | LRG 52 | 19.2 | Theni |
| Redgram | CO 8 | 7.10 | Karur |
| ***Rabi*** | | | |
| Blackgram | VBN 10 | 8.59 | Erode |
| Blackgram | VBN 11 | 9.62 | Villupuram-II |
| Blackgram | VBN 8 | 9.85 | Tiruvallur |
| **Summer** | | | |
| Blackgram | ADT 6 | 8.95 | Cuddalore |
| Blackgram | VBN 11 | 9.12 | Perambalur |
| Blackgram | VBN 8 | 7.20 | Tiruchirappalli |
| **Andhra Pradesh** | | | |
| ***Kharif*** | | | |
| Blackgram | LBG 884 | 9.30 | Vizianagaram |
| Blackgram | VBN 8 | 13.50 | Kurnool (Yagantipalli) |
| Redgram | LRG 105 | 21.60 | Guntur (LAM) |
| Redgram | LRG 52 | 16.30 | Krishna (Garikapadu) |
| Redgram | PRG 176 | 13.25 | Anantapur (Kalyandurg) |
| Redgram | TRG 59 | 22.10 | Kurnool (Yagantipalli) |
| ***Rabi*** | | | |
| Blackgram | GBG 01 | 6.12 | Kadapa (Utukur) |
| Blackgram | LBG 752 | 16.00 | Krishna (Ghantasala) |
| Blackgram | LBG 787 | 13.80 | Vizianagaram |
| Blackgram | LBG 884 | 22.50 | West Godavari (VR Gudem) |
| Blackgram | LBG 904 | 18.50 | East Godavari (Pandirimamidi) |
| Blackgram | TBG 104 | 27.00 | Kurnool (Banavasi) |
| Blackgram | VBN 8 | 22.55 | Kurnool (Yagantipalli) |
| **Telangana** | | | |
| ***Kharif*** | | | |
| Blackgram | GBG 1 | 7.63 | Medak (DDS) |
| Blackgram | MBG 1080 | 14.60 | Warangal (Malyal) |
| Redgram | PRG 176 | 18.50 | Nalgonda (Kampasagar) |
| Redgram | TDRG 4 | 22.50 | Mancherial (Bellampalli) |
| Redgram | WRG 93 | 6.80 | Warangal (Mamnoor) |
| Redgram | WRGe 97 | 23.00 | Warangal (Malyal) |
| ***Rabi*** | | | |
| Blackgram | GBG 1 | 23.11 | Mahabubnagar (YFA) |
| Blackgram | MBG 1080 | 14.60 | Warangal (Malyal) |
| Blackgram | PU 31 | 15.82 | Karimnagar (Ramagirikhilla) |
| Blackgram | TBG 104 | 13.75 | Khammam (Wyra) |
| **Summer** | | | |
| Blackgram | PU 31 | 22.48 | Khammam (Kothagudem) |
| **Puducherry** | | | |
| ***Rabi*** | | | |
| Blackgram | VBN 11 | 6.80 | Karaikal |

**CFLD on redgram Variety PRG 1- KVK Nalgonda (Kampasagar)**

**CFLD on redgram variety LRG 105 - KVK Chittoor (RASS)**


**CFLD on blackgram variety VBN 8 - KVK Thiruvannamalai**

CFLD on blackgram variety VBN 8 – KVK Ariyalur


CFLD on blackgram variety VBN 11 - KVK Virudhunagar

CFLD on redgram variety WRGe 97 - KVK Adilabad

CFLD on blackgram variety VBN 11 - KVK Villupuram II


## 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 2023-2024 during *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 2540 hectares area was allotted to 56 KVKs in Andhra Pradesh, Tamil Nadu, Telangana states and union territory Puducherry. The programme was implemented in 2156 ha by organizing 5389 demonstrations in 52 KVKs.

**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 | 170 | 170 | 425 | 425 |
| | Tamil Nadu | 120 | 100 | 300 | 250 |
| | **Sub total** | **290** | **270** | **725** | **625** |
| Castor | Andhra Pradesh | 90 | 70 | 225 | 175 |
| | Telangana | 30 | 30 | 75 | 75 |
| | Tamil Nadu | 90 | 50 | 225 | 125 |
| | **Sub total** | **210** | **150** | **525** | **200** |
| Sunflower | Tamil Nadu | 72 | 36 | 180 | 90 |
| Niger | Andhra Pradesh | 60 | 60 | 150 | 150 |
| **Total Kharif season** | | **632** | **516** | **1580** | **1290** |
| ***Rabi and Summer*** | | | | | |
| Groundnut | Andhra Pradesh | 310 | 300.8 | 775 | 752 |
| | Telangana | 250 | 225 | 625 | 562 |
| | Tamil Nadu | 378 | 338 | 945 | 845 |
| | **Sub total** | **938** | **863.8** | **2345** | **2159** |
| Sesame | Andhra Pradesh | 310 | 260 | 775 | 650 |
| | Telangana | 130 | 100 | 325 | 250 |
| | Tamil Nadu | 130 | 126.2 | 325 | 315 |
| | Puducherry | 20 | 20 | 50 | 50 |
| | **Sub total** | **590** | **506.2** | **1475** | **1265** |
| Sunflower | Andhra Pradesh | 60 | 60 | 150 | 150 |
| | Tamil Nadu | 80 | 50 | 200 | 125 |
| | **Sub total** | **140** | **110** | **350** | **275** |
| Castor | Andhra Pradesh | 50 | 50 | 125 | 125 |
| | Telangana | 80 | 40 | 200 | 100 |
| | **Sub total** | **130** | **90** | **325** | **225** |
| Safflower | Andhra Pradesh | 80 | 40 | 200 | 100 |
| | Telangana | 30 | 30 | 75 | 75 |
| | **Sub total** | **110** | **70** | **275** | **175** |
| **Total Rabi & Summer Season** | | **1908** | **1640** | **4770** | **4099** |
| **Grand Total** | | **2540** | **2156** | **6350** | **5389** |

### Andhra Pradesh

A total of 2527 Cluster frontline demonstrations on oilseeds were implemented by 18 KVKs in Andhra Pradesh during 2023-2024 in groundnut, sesame, sunflower, castor, safflower and niger crops in an area of 1010.8 ha.

**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 | Demo | |
| ***Kharif*** | | | | | |
| Groundnut | TCGS-1694 | Kurnool | 9.84 | 8.38 | 17.42 |
| Groundnut | Kadiri Lepakshi | Anantapur, Vizianagaram | 10.16 | 8.46 | 20.09 |
| Groundnut | Vishishta | Chittoor, Kurnool, Krishna, Anantapur, Kadapa | 21.98 | 18.9 | 16.29 |
| Castor | ICH-66 | Kurnool | 9.71 | 7.5 | 29.46 |
| Castor | ICH-5 | Kurnool, Anantapur | 9.5 | 7.74 | 22.73 |
| Niger | Utkal niger 150 | Visakhapatnam, Vizianagaram | 4.84 | 2.85 | 69.82 |
| ***Rabi and Summer*** | | | | | |
| Groundnut | TCGS-1694 | Kurnool, Visakhapatnam, Vizianagaram | 28.24 | 23.57 | 19.81 |
| Groundnut | Kadiri Lepakshi | Anantapur, East Godavari | 5.72 | 2.13 | 12.2 |
| Groundnut | Vishishta | Chittoor, Kurnool, Krishna, Anantapur, Kadapa, Srikakulam, Nellore | 29.86 | 25.07 | 19.10 |
| Groundnut | K-Chitravathi | Anantapur | 7.89 | 6.33 | 24.6 |
| Sesame | YLM-66 | Anantapur, Nellore, Srikakulam, Visakhapatnam, Vizianagaram, Krishna, Kadapa, Chittoor, West Godavari, East Godavari, Srikakulam, Kurnool, Prakasam, East Godavari, West Godavari | 5.18 | 3.55 | 45.91 |
| Sesame | JCS-2454 | Kurnool | 5.33 | 4.12 | 29.36 |
| Sunflower | Prabhat | Anantapur, Kurnool | 7.22 | 5.98 | 20.73 |
| Sunflower | KBSH-53 | Chittoor | 26.25 | 18.7 | 40.4 |
| Safflower | ISF-764 | Kurnool | 11.8 | 9.36 | 26.06 |

**Groundnut:** KVKs of Andhra Pradesh conducted 1177 Cluster FLDs on groundnut covering an area of 470.8 ha in *kharif, rabi* and *summer* seasons. Technology demonstrated included improved variety with integrated crop management practices. During *kharif*, improved variety Vishishta increased the yields by 16.29% compared to check plot with 21.98q/ha. During *rabi*, groundnut variety Vishishta recorded 19.1% increase over the farmers yield with 29.86q/ha average yield and improved variety TCGS-1694 recorded average yield of 28.24q/ha in demonstrations.

**Sesame:** A total of 650 Cluster frontline demonstrations on sesame were taken up in 260 ha in rabi and summer seasons together. In *rabi*, improved variety JCS-2454 along with other technological interventions resulted in average demonstration yield of 5.33q/ha which is 29.36% higher than the average check yield of 4.12q/ha in Kurnool districts. During *rabi* and *summer* season varietal demonstration of YLM-66 with recommended package of practices resulted in 45.91% increase in yields compared to check yield.

**Castor:** A total of 300 cluster frontline demonstrations were conducted in 120 ha by KVKs of Kurnool and Anantapur districts on castor during *kharif* season. Technology demonstrated included improved hybrid with integrated crop management practices. ICH-66 hybrid resulted in average demonstration yield of 9.71q/ha with 29.46% increase against check yield of 7.5q/ha in *kharif* season.

**Sunflower:** A total of 150 Cluster frontline demonstrations in 60 ha were conducted on sunflower by KVKs in Chittoor and Kurnool districts during *rabi* season. The technology demonstrated was improved hybrid with integrated crop management practices. Improved hybrid KBSH-53 resulted in average yield of 26.25q/ha of demo yield with 40.4% increase against check plot yields of 18.7q/ha in Chittoor district. Prabhat resulted in 20.73% increase in yield over the check plot.

**Safflower:** A total of 100 CFLDs in 40 ha were organized in Safflower in Kurnool districts during *rabi* season under irrigated situation. Safflower hybrid ISF-764 recorded highest average yield of 11.8q/ha against check yield of 9.36q/ha with 26.06% increase in yield over check plot.

**Niger:** 150 Cluster frontline demonstrations were organized on niger crop in 60 ha on niger crop by KVKs of Vizianagaram and Visakhapatnam districts during *kharif* season. The technology demonstrated was varietal demonstration along with integrated crop management practices. The variety Utkal niger 150 resulted in average yield of 4.84q/ha against check yield of 2.85q/ha with 69.82% increase in yield over check plot.

**Field visit in Sesame crop**

**Fertilizer spraying in Groundnut crop**

**Field day in Niger crop**

**Field visit to groundnut demos**


**Field visit in Sunflower crop**

## Tamil Nadu

A total of 1750 Cluster frontline demonstrations on oilseeds were implemented by 21 KVKs in Tamil Nadu and one KVK in Puducherry during 2023-24 in groundnut, sesame, sunflower and castor crops in an area of 700.2 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 | TCGS-1694 | Tiruvannamalai | 22.03 | 17.5 | 25 |
| Groundnut | Kadiri Lepakshi | Dindigul, Erode, Salem, Theni, Vellore | 23.41 | 19.39 | 20.73 |
| Castor | YRCH-2 | Vellore | 15.04 | 11.32 | 13.86 |
| Castor | YRCH-1 | Salem, Theni, Dharmapuri, Virudhunagar | 23.2 | 15.99 | 45.09 |
| Sunflower | KSFH 666 | Ariyalur | 18.12 | 15.7 | 15 |
| Sunflower | RSFH 700 | Tirunelveli | 17.12 | 14 | 22.28 |
| Sunflower | KBSH 44 | Tiruvannamalai | 14.8 | 12.9 | 15 |
| Sunflower | CoSFV 5 | Virudhunagar | 15.08 | 10.89 | 38.47 |
| ***Rabi and Summer*** | | | | | |
| Groundnut | Dharani | Krishnagiri | 27.2 | 22.6 | 18.47 |
| Groundnut | Kadiri Lepakshi | Nagapattinam, Perambalur, Dindigul, Dharmapuri, Ariyalur, Coimbatore, Tirunelveli, Tuticorin | 24.25 | 19.15 | 26.63 |
| Groundnut | VRI-8 | Tiruvannamalai | 22.5 | 15.09 | 32.8 |
| Groundnut | VRI-10 | Villupuram, Virudhunagar, Tiruvallur | 31.78 | 21.45 | 48.15 |
| Groundnut | CO-7 | Karur | 24 | 18 | 25 |
| Groundnut | Vishishta | Villupuram | 19.54 | 15.2 | 28.55 |
| Sunflower | RSFH 700 | Tirunelveli | 17.12 | 14 | 22.28 |
| Sesame | VRI-4 | Perambalur, Tuticorin, Theni, Villupuram, Virudhunagar, Cuddalore | 6.9 | 5.8 | 18.96 |

**Groundnut:** A total of 1095 Cluster FLDs on groundnut were conducted by the KVKs of Tamil Nadu covering an area of 438 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 TCGS-1694 and Kadiri Lepakshi. Highest average demonstration yield of 23.41 q/ha was recorded with Kadiri Lepakshi variety with 20.73% increase in yield compared to check yield. During *rabi*, groundnut demonstrations were conducted with improved variety Dharani, Kadiri Lepakshi, CO-7, VRI-9 and VRI-10 following integrated crop management practices. VRI-10 variety recorded highest average demonstration yield of 31.78q/ha, resulting in 48.15% increased yield compared to check yield of 21.45q/ha.

**Sesame:** A total of 315 cluster frontline demonstrations in 126.2 ha were conducted on sesame in *rabi* season. Varietal demonstration of VRI-4 with recommended package of practices under irrigated conditions resulted in 18.96% increase in yields compared to local check during *rabi* season with the average demo yield of 6.9q/ha.

**Castor:** A total of 125 cluster frontline demonstrations on castor in 50 ha area during *kharif* season. The technology demonstrated was improved hybrid with integrated crop management practices. In *kharif,* hybrid YRCH-1 resulted in average yield of 23.2q/ha against 19.39q/ha of check yield with 20.73% increase in yield. In *Kharif the* hybrid YRCH-2 resulted in average yield of 15.04q/ha against 11.32q/ha of check yield with 13.86% increase in yield.

**Sunflower:** 215 Cluster frontline demonstrations in 86 ha on sunflower were conducted during kharif and *summer* seasons. Technology demonstrated included improved hybrid with integrated crop management practices. The hybrid KSFH 666 recorded highest average yield of 18.12q/ha in Ariyalur district and hybrid RSFH 700 recorded 17.12q/ha in Tirunelveli district.

**Field visit in Groundnut crop**

**Diagnostic visit in Sesame crop**


**Field day in Groundnut crop**

**Demonstration on soil application of *P.flueroscence* in Groundnut field**

**Demonstration on Foliar spray of groundnut rich in Groundnut field**

### Telangana

A total of 1062 Cluster frontline demonstrations on oilseeds were implemented by 12 KVKs in Telangana during *kharif, rabi* and *summer* seasons in groundnut, sesame, safflower, sunflower and castor crops in an area of 425ha.

**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 | Wanaparthy | 7.87 | 5.01 | 96.25 |
| Castor | PCH-111 | Nagarkurnool | 12.5 | 9.7 | 28.86 |
| ***Rabi and Summer*** | | | | | |
| Groundnut | Kadiri Lepakshi | Mancherial, Peddapalli, Karimnagar | 26.3 | 21 | 25.38 |
| Groundnut | Dharani | Warangal, Bhadradri Kothagudem | 31.4 | 22 | 42.72 |
| Groundnut | Vishishta | Suryapet | 26.5 | 23.2 | 14.22 |
| Safflower | ISF-764 | Sangareddy | 25.1 | 21.5 | 16.74 |
| Sesame | JCS-1020 | Peddapalli, Suryapet, Nagarkurnool | 7.54 | 4.85 | 55.46 |
| Sesame | JCS-2454 | Nizamabad, Karimnagar, Mancherial | 8.77 | 6.67 | 31.48 |
| Castor | PCH-111 | Nagarkurnool | 13.5 | 9.8 | 37.75 |

**Groundnut:** 562 Cluster FLDs on groundnut were conducted covering an area of 225 ha in *rabi* and *summer* seasons in Telangana. The varieties demonstrated were Kadiri Lepakshi, Dharani and Vishishta. Kadiri Lepakshi along with integrated crop management practices resulted in 25.38% increase in yields over check yield in Karimnagar, Peddapalli and Mancherial districts with average demonstration yield of 26.3q/ha. Vishishta resulted in average yield of 26.5q/ha in demo plots against the check plots with average yield of 23.2q/ha in Suryapet district. Demonstration of Dharani variety resulted in 25.81% increase in yield over the check plot in Suryapet district.

**Sesame:** A total of 250 cluster frontline demonstrations on sesame in 100 ha were taken up in *rabi* and *summer* season with other technological interventions. The improved variety JCS-2454 resulted in 31.48% increase in yield over

check plot with 8.77q/ha of Demo plot yield. JCS-1020 resulted in 55.46% increase in yields with a demonstration yield of 7.54q/ha over the check yield of 4.85q/ha.

**Castor:** 175 Cluster frontline demonstrations on castor were conducted in 70 ha by KVK, Mahabubnagar during *Kharif* season. The technology demonstrated was improved hybrid with integrated crop management practices. During *kharif* the hybrid ICH-66 resulted in an average yield of 7.87q/ha against 5.01q/ha of check with 96.25% increase in yields. During *Kharif,* the hybrid PCH-111 resulted in yield of 12.5q/ha against 9.7q/ha of check with 28.86% increase in yields.

**Safflower:** 75 Cluster frontline demonstrations on safflower were conducted in 30 ha by KVK, Sangareddy during *rabi* season. The technology demonstrated was improved hybrid with integrated crop management practices. The hybrid ISF-764 resulted in average yield of 25.1q/ha with 16.74% increase in yield over the check plot.


**Field day in Groundnut crop**

**Field visit in Sesame crop**

I adopted IFS model with the help of KVK, Erode and also developed an innovative formula for masala powder preparation. Started "Aara traders Co." and I am marketing value added products with the brand name " Aara". I have a parental stock breeding unit for desi birds to support Back Yard Poultry units in the area. I patented an organic seed coating formulation for agri and horticultural crops.

**E. Kavitha**
Erode, Tamil Nadu



## 4.6. Seed Hubs

Twelve KVKs of the zone, 6 from Tamil Nadu, 2 from Telangana and 4 from Andhra Pradesh produced 3266.42 q of quality seed of pulses to augment the demand from farmers and government agencies (Table 4.6.1). Among the crops, 1950.53 q of blackgram followed by 687.02 q of redgram, 107.02 q of greengram, 510.65 q Bengal gram and 11.20 q of cowpea were produced. A total of 1166.88 q of seeds were certified seeds, 1486.69 q were FS I seeds, and 662.85 q were FS II seeds (Table 4.6.2).

### 4.6.1 Crop wise quantity of seed produced and sold in 2023-24

| Crop Name | Quantity produced (q) | | | Production/ Procurement cost (Rs./q) | Processing cost (Rs./q) | Quantity Sold (q) | | | Sale price (Rs./q) | Quantity remained unsold |
|---|---|---|---|---|---|---|---|---|---|---|
| | KVK Farm | Farmers Fields | Total | | | Farmers | Govt agencies | Others | | |
| Bengal gram | | 510.65 | 510.65 | 7950.00 | 62.50 | | | | 10875 | 510.65 |
| Blackgram | | 1950.53 | 1950.53 | 9318.00 | 171.00 | 10041.71 | 23110.88 | 15967.73 | 9970 | 971.33 |
| Cowpea | | 11.20 | 11.20 | 9150.00 | | | 7.37 | | 11400 | 2.40 |
| Greengram | 0.68 | 106.34 | 107.02 | 9662.50 | 443.75 | 335.05 | 592.23 | 2.68 | 11203 | 22.70 |
| Redgram | 24.17 | 662.85 | 687.02 | 11100.00 | 1970.00 | 1.50 | | | 15000 | 685.52 |
| **Total** | **24.85** | **3241.57** | **3266.42** | **47180.50** | **2647.25** | **10378.26** | **23710.48** | **15970.41** | | **2192.60** |

### 4.6.2 Seed Class wise quantity produced and sold in 2023-24

| Seed Class | Quantity Produced | | |
|---|---|---|---|
| | KVK farm (q) | Farmers' fields (q) | Total (q) |
| Certified seeds | | 1166.88 | 1166.88 |
| Foundation seeds I | 24.85 | 1461.84 | 1486.69 |
| Foundation seeds II | | 662.85 | 662.85 |
| **Total** | **24.85** | **3241.57** | **3266.42** |

**Seed hub - KVK Kurnool Yagantipalli Dr. Shaik N Meera, Director ATARI inspecting the seed godown**

**Seed hub – processing and storage facility of KVK Mahabubnagar Palem**

**Seed hub of KVK Tiruchirappalli - District collector inspecting the seed godown**

**Seed Hub of KVK Villupuram – Dr.Shaik N Meera, Director ATARI and Dr. P.P. Murugan DEE, TNAU inspecting the seed production unit and seed godown**

## 4.7 Gramina Krishi Mousam Seva (GKMS) Project : District Agro Meteorological Units (DAMU)

District AgroMet Units (DAMUs) are mandated to prepare and disseminate sub-district (block) level weather based agro-advisories to the farmers. DAMUs were established in 28 Krishi Vigya Kendras of the zone with the assistance of Indian Meteorological Department (IMD) Under Gramin Krishi Mausam Sewa (GKMS). 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 Agrometeorologyand 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.

### 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 18838 block level bulletins and 8106 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, KisanSarathi, mKisan, KVK Websites, Display boards at KVKs, radio and other apps. During the year 341562 farmers got these maessages.

### Agromet Advisory Messages:

A total of 17013 weather based agro advisories were sent to the farmers related to crops and livestock during the year 2022-23. Out of these, 13674messages were related to crops and **3339** were related to livestock. Messages related to crop protection accounted for 40.93% of the total messages related to crops followed by Crop production (23.92%). About 11% messages related to each of seeds & sowing as well as harvesting (12.44%). In case of messages related to livestock, 41.27% each was about dairy animals, 29.02% was about sheep and goat, 24.47% was about poultry and the remaining 5.24% was about fisheries. These messages were sent to the beneficiaries through various means such as different means through which messages were sent to farmers. WhatsApp groups and 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.

### 4.7.1 Details of various types of messages sent related to crops

| Type of message | No of Messages | Percentage |
|---|---|---|
| Seed/ Sowing /variety | 1471 | 10.76 |
| Crop production | 3271 | 23.92 |
| Crop protection | 5597 | 40.93 |
| Harvesting | 1451 | 10.61 |
| Others | 560 | 4.10 |
| **Total** | **13674** | **100.00** |

### 4.7.2 Details of various types of messages sent related livestock

| Livestock | Diseases | Nutrition / fodder/feed | Others | Total |
|---|---|---|---|---|
| Fisheries | 61 | 109 | 5 | 175 (5.24) |
| Poultry | 317 | 322 | 178 | 817 (24.47) |
| Sheep & Goat | 402 | 401 | 166 | 969 (29.02) |
| Dairy animals | 551 | 576 | 251 | 1378 (41.27) |
| **Grand Total** | **1331** (39.86) | **1408** (42.17) | **600** (17.97) | **3339** (100.00) |

### Farmers awareness programmes and Feedback studies

Various Programmes such as trainings, kisan gosthis etc will be conducted to create awareness about weather forecast and weather based agro advisories, benefits and avoiding probable loss due to unexpected events. About 385 such programmes were organized with the participation of about 21740 farmers and farm women during the year 2023-24 in Zone X. DAMU centres conduct feedback and impact studies to assess the accuracy and usefulness of the agro advisories sent to the farmers. About 43 feedback studies and 37 impact studies were conducted by the KVKs of zone X.

**Farmers awareness programme on Agromet Advisory services at KVK Adilabad**

**KVK Vellore: women farmers attending awareness programme on weather based agro advisories**

**KVK Banavasi: Awareness programme on weather based agro advisories and weather-based apps.**

## 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) , hitherto known as Tribal Sub Plan (TSP) has been implemented by 19 KVKs of the zone (Table 4.8.1) that have operational mandals with predominant tribal population.

**Table 4.8.1. List of KVKs implementing DAPST in Zone X**

| S.No | State | Name of the district | Name of the KVK |
|---|---|---|---|
| 1 | Andhra Pradesh | Vizianagaram | Rastakuntubai |
| 2 | Andhra Pradesh | Srikakulam | Amudalavalasa |
| 3 | Andhra Pradesh | Visakhapatnam | BCT |
| 4 | Andhra Pradesh | Visakhapatnam | Kondempudi |
| 5 | Andhra Pradesh | East Godavari | Pandirimamidi |
| 6 | Andhra Pradesh | West Godavari | Venkataramannagudem |
| 7 | Andhra Pradesh | Prakasam | Darsi |
| 8 | Telangana | Adilabad | Adilabad |
| 9 | Telangana | Mancherial | Bellampalli |
| 10 | Telangana | Khammam | Wyra |
| 11 | Telangana | Bhadradri Kothagudem | Kothagudem |
| 12 | Telangana | Nizamabad | Rudrur |
| 13 | Telangana | Nalgonda | Gaddipalli |
| 14 | Telangana | Nalgonda | Kampasagar |
| 15 | Telangana | Warangal | Malyal |
| 16 | Telangana | Warangal | Mamnoor |
| 17 | Tamil Nadu | Namakkal | Namakkal |
| 18 | Tamil Nadu | Salem | Salem |
| 19 | Tamil Nadu | Nilgiris | Ooty |

The KVK implementing DAPST aim to raise income of the beneficiaries through better agricultural operations, skilling related to agriculture, allied sectors and secondary agricultural activities and also through creation of income generating activities. The objective of achieving higher productivity of crop and livestock production systems is achieved through major mandated activities of the KVK like on farm testing, frontline demonstrations, capacity building, awareness programs, supply of critical inputs and extending services ( soil testing, diagnostic services and issue of time critical advisory) in the adopted villages of tribal mandals ensuring that the population of tribal people is above 50 per cent in the tribal village / hamlet and that the benefit is realized by tribal people directly. The achievement of the 19 KVKs that implemented DAPST during 2023-24 is presented in the following table in terms of the inputs and services supplied / rendered to the tribal beneficiaries.

## Table 4.8.2. Achievements of interventions of KVKs under DAPST during 2023-2024

| Activity | Andhra Pradesh | | Telangana | | Tamil Nadu | | Total | |
|---|---|---|---|---|---|---|---|---|
| | Value | Farmers (No.) | Value | Farmers (No.) | Value | Farmers (No.) | Value | Farmers (No.) |
| On -farm trails(No.) | 256 | 305 | 61 | 102 | 43 | 50 | 360 | 457 |
| Frontline demonstrations (No.) | 521 | 603 | 82 | 474 | 175 | 221 | 778 | 1298 |
| Farmers training (No.) | 189 | 5630 | 59 | 1923 | 38 | 1199 | 286 | 8752 |
| Training of Rural Youth (No.) | 90 | 1727 | 26 | 806 | 18 | 488 | 134 | 3021 |
| Training of Extension Personnel (Nos) | 48 | 1618 | 6 | 300 | 3 | 55 | 57 | 1973 |
| Skill Training (No.) | 83 | 1304 | 63 | 428 | 18 | 154 | 164 | 1886 |
| Extension Activities (No.) | 1332 | 3507 | 277 | 6244 | 70 | 3568 | 1679 | 13319 |
| Production of Seed(q) | 299.525 | 4801 | 463.6 | 2364 | 8.56 | 235 | 771.685 | 7400 |
| Planting supplied (No.) | 188355 | 261 | 165250 | 4447 | 9500 | 650 | 363105 | 5358 |
| Live -stock strains and fish fingerlings (No.) | 142964 | 509 | 75765 | 493 | 91000 | 140 | 309729 | 1142 |
| Soil samples tested (No.) | 1011 | 1011 | 1375 | 1375 | 342 | 342 | 2728 | 2728 |
| Mobile agro advisories (No.) | 3577 | 51338 | 3054 | 44457 | 670 | 21650 | 7301 | 117445 |
| Micro enterprises/assets supplied (No.) | 1065 | 2100 | 1281 | 1165 | 30562 | 1577 | 32908 | 4842 |

**FLD on IPDM of cashew – West Godavari , Andhra Pradesh**

**Distribution of rosemary planting material – Nilgiris , Tamil Nadu**

**Organic cultivation of turmeric – Vizianagaram, Andhra Pradesh**

A total of 50 skill training programmes of varying duration from 1- 5 days were implemented by KVKs during 2023-24 for the benefit of 1194 tribal people. These trainings helped them in establishing income generating units with the supply of critical inputs and hand holding support given by the KVKs under the project. The details of the skill training programmes are given in Table 4.8.3.

**Table 4.8.3. Skill training Programmes conducted during 2023-24 under DAPST**

| Details of the training programmes | Duration | No .of trainees |
|---|---|---|
| **Andhra Pradesh** | | |
| **East Godavari(Pandirimamidi)** | | |
| Cashew nut processing | 3 | 15 |
| Value addition practices in Rough Lemon | 2 | 16 |
| Honeybee keeping | 5 | 24 |
| **Prakasam (Darsi)** | | |
| Mushroom production | 3 | 42 |
| Preparation of fish and prawn pickles | 3 | 34 |
| Azolla cultivation methods | 3 | 30 |
| **Visakhapatnam (Kondempudi)** | | |
| Vermi composting | 3 | 30 |
| Raising of seedlings through Protray technology | 3 | 30 |
| Training on processing using Dhal mill and oil mill | 3 | 30 |
| **Visakhapatnam(BCT)** | | |
| Skill training program on cashew orchard management - Pruning and training, fertilizer application | 3 | 40 |
| Training program on millet value addition | 3 | 48 |
| Skill development on backyard poultry farming for improved livelihood in tribal communities | 3 | 40 |
| skill training on Natural Farming | 3 | 40 |
| **Vizianagaram (Rastakuntubai)** | | |
| Raising of seedlings through Protray technology | 3 | 40 |
| Vermicompost | 3 | 30 |
| Apiculture | 3 | 30 |
| Value additions to millets | 3 | 385 |
| Value addition to vegetables and green leafy vegetables | 2 | 30 |
| Cashew grafting techniques | 3 | 40 |
| Mushroom production technology | 3 | 40 |

| Details of the training programmes | Duration | No .of trainees |
|---|---|---|
| Mass multiplication of bio-agents and their application / usage in different crops | 2 | 50 |
| **Srikakulam** | | |
| Identification of stem borer in Cashew | 1 | 20 |
| Use of biofertilizers | 1 | 20 |
| **West Godavari (VR Gudem)** | | |
| Skill Training on "Horti – Millet Products" | 2 | 15 |
| Soil sampling techniques; do's and don'ts during soil sampling | 1 | 20 |
| Value addition in banana | 1 | 20 |
| Beekeeping | 3 | 35 |
| **Total Andhra Pradesh** | | **1194** |
| **Telangana** | | |
| **Adilabad** | | |
| Operation and maintenance of drip irrigation system | 2 | 30 |
| **Khammam-Kothagudem** | | |
| Training programme on INM Practices in Rabi groundnut cultivation | 1 | 30 |
| Safe handling of pesticides and pesticide residues and its impact on environment | 1 | 30 |
| Precautions to be used while spraying pesticides | 1 | 30 |
| Training programme on terrace gardening | 1 | 30 |
| Use of Mobile & ICT tools for accessing Agriculture information | 1 | 30 |
| **Warangal (Malyal)** | | |
| Tailoring | 4 | 25 |
| **Mamnoor** | | |
| Vermicompost production technology | 3 | 25 |
| **Nalgonda (Gaddipally)** | | |
| Good Practices in organic agriculture | 2 | 30 |
| Bio-inoculants uses and its application ST Farmers under TSP | 2 | 30 |
| Scientific Beekeeping | 3 | 25 |
| Value addition to millet products | 3 | 25 |
| **Nalgonda (Kampasagar)** | | |
| Skill training programme on raising of vegetable nurseries under shade nets | 3 | 30 |
| **Mancherial (Bellampalli)** | | |
| Skill training programme on Honeybee rearing | 3 | 28 |
| **Khammam (Wyra)** | | |
| Homestead technologies for sustainable income generation | 3 | 30 |
| **Total Telangana** | | **428** |
| **Tamil Nadu** | | |
| **Namakal** | | |
| Production of organic inputs | 5 | 10 |
| Banana Shakthi preparation and nutrient management in spices and plantation crops | 3 | 15 |
| Genetically Improved Farmed Tilapia (GIFT) Farming | 5 | 25 |
| Silage making | 1 | 19 |
| **Salem** | | |
| Nursery Technologies in horticultural crops | 1 | 30 |
| Nursery Technologies in horticultural crops | 1 | 30 |
| **Nilgiris** | | |
| Cultivation of Azolla as animal feed supplement | 1 | 15 |
| Backyard Poultry farming | 1 | 10 |
| **Total Tamil Nadu** | | **154** |
| **Grand Total** | | **1776** |

**Skill training on apiary – Kothagudem, Telangana**

The KVKs implementing DAPST created physical assets and helped establish micro-enterprises in tribal households for productivity enhancement and income generation. A total of 2359 assets were created during the year 2023 for the benefit of 4285 tribal youth, the details of which are given below.

**Table 4.8.4. Physical assets/micro-enterprises established in tribal areas during 2023-24**

| State, KVK and enterprise | No. of units | No. of beneficiaries |
|---|---|---|
| **Andhra Pradesh** | | |
| **East Godavari (Pandirimamidi)** | | |
| Smoke chamber | 1 | 160 |
| Waterproof tarpaulins | 60 | 60 |
| Rubber processing equipment and tools | 1 | 320 |
| Poultry birds | 125 | 125 |
| Goats | 2 | 2 |
| Sprayers | 10 | 10 |
| Mini rice mill | 2 | 40 |
| Storage bins | 20 | 20 |
| Multipurpose trays | 40 | 40 |
| Oil palm Ab1ation tools | 25 | 25 |
| Monkey guns | 50 | 50 |
| Solar fence | 03 | 03 |
| Monofilament nylon Fishing nets | 10 | 10 |
| Azolla beds | 10 | 10 |

| State, KVK and enterprise | No. of units | No. of beneficiaries |
|---|---|---|
| **Visakhapatnam (BCT)** | | |
| Turmeric boilers | 4 | 60 |
| Turmeric Polishers | 4 | 60 |
| Black pepper ladders | 4 | 20 |
| Sub soiler | 1 | 30 |
| Dryer | 1 | 25 |
| Juice extractor | 1 | 25 |
| **Prakasam (Darsi)** | | |
| Poultry | 25 | 25 |
| Small farm implements | 2 | 10 |
| Farm produce cleaning / drying equipment | 50 | 50 |
| Battery Sprayers | 15 | 15 |
| **Vizianagaram (Rastakuntubai)** | | |
| Duplex poultry units | 12 | 10 |
| Battery sprayers | 50 | 50 |
| Tarpaulins | 40 | 40 |
| **Srikakulam** | | |
| Sticky traps machine | 1 | 200 |
| Leveller | 1 | 10 |
| CAE Aero Towers | 1 | 10 |
| Puddler | 1 | 10 |
| NFT Linear model | 1 | 10 |
| **West Godavari (VR Gudem)** | | |
| Chaff cutter for green fodder | 1 | 5 |
| Vermi compost beds | 5 | 5 |
| Goat enterprise | 4 | 4 |
| Poultry birds | 31 | 31 |
| **Total Andhra Pradesh** | **706** | **1639** |
| **Telangana** | | |
| **Adilabad** | | |
| Battery sprayers | 27 | 27 |
| Manual hand push seed drills | 11 | 11 |
| Tarpaulins | 38 | 38 |
| Irrigation pipes | 100 | 100 |
| Bullock drawn seed drill | 07 | 50 |
| **Khammam- Kothagudem** | | |
| Tarpaulins | 20 | 20 |
| Sprayers | 4 | 4 |
| **Warangal (Malyal)** | | |
| Stitching/sewing machine | 25 | 25 |
| **Nalgonda (Kampasagar)** | | |
| Promotion of poultry chicks | 26 | 26 |
| Vermibeds | 15 | 30 |
| Shade nets | 10 | 50 |
| **Nalgonda Gaddipally** | | |
| Sericulture | 1 | 1 |
| Vermicomposting | 10 | 10 |
| Grain storage units | 200 | 200 |

| State, KVK and enterprise | No. of units | No. of beneficiaries |
|---|---|---|
| Small farm implements | 20 | 20 |
| **Mancherial** | | |
| Farm produce cleaning / drying equipment (tarpaulins) | 35 | 35 |
| Battery sprayers | 40 | 40 |
| Goat tray | 12 | 4 |
| **Nizamabad** | | |
| Tarpaulins | 30 | 30 |
| Vermicomposting | 10 | 20 |
| Manual push seed drill | 6 | 60 |
| Crop weeders | 15 | 15 |
| Hand khurpis | 12 | 12 |
| Vegetable crates | 150 | 30 |
| Crop covers | 1 | 1 |
| **Khammam (Wyra)** | | |
| Cotton stem applicators | 125 | 125 |
| Vermi beds | 10 | 10 |
| Battery sprayers | 20 | 20 |
| Tarpaulins | 11 | 11 |
| Sickles | 100 | 50 |
| **Total Telangana** | **1091** | **1075** |
| **Tamil Nadu** | | |
| **Namakal** | | |
| Apiary unit –EDP activities+ Face mask + Hand cloves Smoker +Honey extractor | 10 | 10 |
| Handmade cast net | 5 | 5 |
| Desi bird shelters | 11 | 11 |
| Coffee pulper machine | 01 | 20 |
| Millet pulverizer | 01 | 20 |
| Paneer pressing Device | 05 | 10 |
| Fruit Juicer | 02 | 20 |
| **Salem** | | |
| Coffee pulper | 1 | 100 |
| Seed drill | 4 | 40 |
| Pepper Ladder | 7 | 70 |
| Oven | 1 | 20 |
| Shredder cum pulverizer | 1 | 200 |
| Sprayer | 2 | 20 |
| Rotary tiller | 1 | 100 |
| Sub soiler | 1 | 100 |
| **Nilgiris** | | |
| Nursery Production Unit (100 Sq. ft) | 1 | 300 |
| Goatery (6 units) | 1 . | 100 |
| Honeybee processing unit | 6 | 25 |
| Backyard Poultry | 1 | 100 |
| Value addition in medicinal plants | 500 | 300 |
| **Total Tamil Nadu** | **562** | **1571** |
| **Grand Total** | **2359** | **4285** |

**Backyard poultry unit in a tribal village – West Godavari, Andhra Pradesh**


**Supply of portable vermibeds to tribal youth – Warangal (Mamnoor), Telangana**


**Promotion of sericulture in tribal villages – Nalgonda (Gaddipalli), Telangana**

## Development Action Plan for Schedule Castes (DAPSC)

This programme was implemented by all the KVKs of the zone for achieving enhanced income and livelihood security of scheduled caste communities in the adopted villages. Interventions have been taken up by KVKs that would directly benefit schedule caste farmers or youth. Besides implementing core mandated activities, KVKs organised skill imparting training and also provided physical assets for creating income generating opportunities. Training, demonstrations and awareness programmes were also organised for promoting natural farming among scheduled caste farmers. The achievements of DAPSC during 2023-24 are presented in Table 4.8.5.

**Table 4.8.5. Achievements of DAPSC during 2023-24**

| S.No | Items/ Activities | | Units | No. of. Activities | | No .of beneficiaries | |
|---|---|---|---|---|---|---|---|
| | | | | Annual Targets | Achievements | Annual Targets | Achievements |
| 1 | **Trainings (capacity building/skill Develop. etc.)** | | No. | 708 | 447 | 15458 | 9455 |
| | 1.1 | 1-3 days | No. | 1248 | 1568 | 30968 | 36683 |
| | 1.2 | 4-10 days | No. | 50 | 52 | 1068 | 1050 |
| | 1.3 | 2-4 weeks | No. | 4 | 42 | 117 | 210 |
| | 1.4 | More than 4weeks | No. | 2 | 4 | 45 | 160 |
| 2 | **On Farm Trials (OFTs)** | | No. | 528 | 596 | 1741 | 2046 |
| 3 | **Frontline Demonstrations (FLDs) and other demonstrations** | | No. | 826 | 958 | 4452 | 6901 |
| 4 | **Awareness camps, exposure visits etc.** | | No. | 1483 | 1692 | 69062 | 68712 |
| 5 | **Input Distribution** | | | | | | |
| | 5.1 | Seeds (field crops) | Tonnes | 489.6955 | 6,663.85 | 6379.1 | 8081 |
| | 5.2 | Seeds (High value crop spices etc) | Kg | 6237.623 | 4047.377 | 408 | 659 |
| | 5.3 | Seeds (Roots &Tuber crops) | Tonnes | 1004.4 | 97.45 | 93 | 313 |
| | 5.4 | Nursery plants | No. | 1609556 | 1334877 | 15744 | 18244 |
| | 5.5 | Cuttings , slips , suckers etc | No. | 337900 | 246496 | 1074 | 8096 |
| | 5.6 | Mushroom spawns / Bio-fertilizers | Packets | 6431 | 6321 | 3294 | 2558 |
| | 5.7 | Honeybee colonies | No. | 139 | 213 | 90 | 191 |
| | 5.8 | Animals- small (Pig , sheep , Goat etc) | No. | 3025 | 1847 | 293 | 377 |
| | 5.9 | Animals- Large (Cattle/Buffalo/camel/Horse/ Donkey/ Mithun/Yak etc | No. | 0 | 3 | 0 | 28 |
| | 5.1 | Poultry chicks / Ducklings etc | No. | 38995 | 37124 | 7705 | 4401 |
| | 5.11 | Fish spawns / Fingerlings | No. | 106625 | 73722 | 151 | 286 |
| | 5.12 | Small Equipment's (up to Rs.2000) | No. | 563 | 1241 | 544 | 1813 |
| | 5.13 | Medium Equipment's/ Machinery (≤ Rs. 25000 ) | No. | 5825 | 100,522 | 1402 | 2613 |
| | 5.14 | Large Equipment's/ Machinery (> Rs. 25000 ) | No. | 81 | 34,535 | 367 | 1236 |
| | 5.15 | Infrastructure / Civil work / Ponds etc | No. | 101 | 288 | 241 | 352 |
| | 5.16 | Setting up plant nursery / Seed farm / Hatchery | No. | 217 | 1598 | 1349 | 2304 |
| | 5.17 | Land development / Reclamation / Conservation | Hectares | 10 | 24 | 15 | 10 |
| | 5.18 | Fertilizers ( NPK ) /Secondary fertilizers | Tonnes | 1.104 | 18.702 | 17 | 23 |
| | 5.19 | Micronutrients | Tonnes | 1.64 | 147.557 | 144 | 307 |
| | 5.2 | FYM / Vermi compost | Tonnes | 64.35 | 1,096.80 | 769 | 2712 |
| | 5.21 | Soil amendments( Gypsum , Lime etc ) | Tonnes | 0.1 | 0.6 | 10 | 20 |
| | 5.22 | Plant protection chemicals | Kg | 1394.802 | 121.6 | 496 | 1712 |
| | 5.23 | Plant growth promoters etc | Kg | 616 | 1718 | 431 | 3487 |
| | 5.24 | Animal Feed | Tonnes | 0.965 | 848.2 | 43 | 131 |
| | 5.25 | Animal Fodder | Tonnes | 15.01 | 12486.35 | 402 | 743 |
| | 5.26 | Animal medicines | Doses | 5038 | 9064 | 5028 | 1198 |
| | 5.27 | Any others (Specify) | | 20771.55 | 25880.64 | 3002 | 8447 |

| S.No | Items/ Activities | | Units | No. of. Activities | | No .of beneficiaries | |
|---|---|---|---|---|---|---|---|
| | | | | Annual Targets | Achievements | Annual Targets | Achievements |
| 6 | **Services/ facilitation** | | | | | | |
| | 6.1 | Animal Health Camps | No. | 90 | 3702 | 3522 | 7566 |
| | 6.2 | Artificial insemination / Vaccination | No. | 1169 | 2158 | 1243 | 2376 |
| | 6.3 | Veterinary Services ( Hospitalization , on-site treatment , PD, Surgery etc) ) | No. | 60 | 945 | 725 | 971 |
| | 6.4 | Testing samples of soil , plant , water , feed, fodder and livestock | No. | 10112 | 17822 | 10129 | 11996 |
| | 6.5 | Promotion of Agri - entrepreneurship | No. | 759 | 4703 | 4300 | 3548 |
| | 6.6 | Promotion of IFS, IOFS, Natural Farming, Nutri-garden, kitchen garden, orchards etc. | No. | 645 | 7545 | 6776 | 8151 |
| | 6.7 | Creation of market links of farm produces | No. | 12 | 351 | 283 | 323 |
| | 6.8 | Use of institute facilities (Processing etc.) | Hours | 12 | 167 | 91 | 59 |
| | 6.9 | Subsidies / Assistance ( 50% of project cost, Max. Rs.10000 / beneficiary ) | No. | 12 | 5 | 12 | 55 |
| 7 | Distribution of literature | | No. | 30492 | 38725 | 28090 | 50791 |
| 8 | Employment generation for livelihood | | Man-Months | 37 | 9407 | 36 | 50791 |


**Frontline Demonstration on Chrysanthemum – KVK, Kurnool (Yagantipalli), Andhra Pradesh**

**Establishment of Goatery units with SC farmers – KVK, Villuppuram, Tamil Nadu**

## 4.9. Formation and Promotion of 10000 Farmer Producer Organisations

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. No of shareholders in each FPO ranges from 354 to 960. On an average, these FPOs have about Rs. 10.48 lakh equity amount. Ten FPOs have owned office building and two are functioning in rented offices. Eight FPOs have owned/hired storage facilities. Eight FPOs have license for marketing of seeds, fertilizers and pesticides. Two FPOs have FSSAI licence and the process of getting FSSAI licence was initiated by another two FPOs. Eight FPOs have eNAM registration and three FPOs are involved in paddy procurement. Only two FPOs have custom hiring centres. All the FPOs have linkages with Markfed, APMAS, ICRISAT-IFDC, NABARD, IFFCO, FMC, KRIBCO etc.

### 4.9.1 Details of FPOs established in zone 10

| S. No | Name of CBBO | Name of State | Name of District | Name of Block | Date of Registration | No. of share holders | Equity Amount Collected (Rs.) |
|---|---|---|---|---|---|---|---|
| 1 | KVK East Godavari (Kalavacharla) | Andhra Pradesh | East Godavari | Karapa | 20.12.2021 | 386 | 7,72,000 |
| 2 | KVK East Godavari (Kalavacharla) | Andhra Pradesh | East Godavari | Panduru | 20.12.2021 | 414 | 828000 |
| 3 | KVK Kurnool (Banavasi) | Andhra Pradesh | Kurnool | Maddikera | 20.12.2021 | 750 | 15,00,000 |
| 4 | KVK Kurnool (Banavasi) | Andhra Pradesh | Kurnool | Pattikonda | 20.12.2021 | 750 | 15,00,000 |
| 5 | KVK Karimnagar (Jammikunta) | Telangana | Karimnagar | Jammikunta | 22.11.2021 | 620 | 682000 |
| 6 | KVK Karimnagar (Jammikunta) | Telangana | Karimnagar | Manakondur | 03.11.2021 | 740 | 814000 |
| 7 | KVK Medak (Tuniki) | Telangana | Medak | Medak | 27.10.2021 | 354 | 6,28,000 |
| 8 | KVK Medak (Tuniki) | Telangana | Medak | Nizampet | 04.10.2021 | 750 | 12,75,000 |
| 9 | ICAR -IIMR, Hyderabad | Telangana | Medak | Tekmal | 22.10.2021 | 750 | 1500000 |
| 10 | ICAR -IIMR, Hyderabad | Telangana | Medak | Yeldurthy | 21.10.2021 | 675 | 675000 |
| 11 | ICAR-IIOR, Hyderabad | Telangana | Siddipet | Naryanraopet | 09.11.2021 | 470 | 920000 |
| 12 | ICAR-IIOR, Hyderabad | Telangana | Siddipet | Chinnakodur | 01.09.2021 | 960 | 1920000 |
| | Average | | | | | 635 | 1048429 |

All the CBBOs completed the identification of trainingneedsandtrainingmodulesweredeveloped for 10 FPOs. Preliminary awareness programmes / trainings were undertaken for BoDs/members of 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 implemented by 10 FPOs. On an average 72 percent of the businesses plans implemented by the CBBOs. Statutory clearances obtained to carry out business activities were oblained for 9 FPOs. Equity grant was availed by all the FPOs. Ten FPOs were Registered in e-NAM or other electronic platforms. Marketing linkages were established for 10 FPOs.

## 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 the 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:

All the 32 drones sanctioned were purchased by different centres. Of these 20 drones belong to IoTech World Avigation Pvt.Ltd., Model: Agribot, 6 belong to Garuda Aerospace; Model GA-AD, 3 belong to Marut drone Pvt ltd. 2 belong to TREE-D HUBS LLP THBs-E6-01, 2023 model, and one belong Vyomic Innovations Pvt Ltd., 2023, Hexacopter and The cost of the drone ranges from Rs. 5.81 lakh to 10.00 lakh.

### Demonstrations conducted:

A total of 1641 demonstrations were conducted during 2023-24 in the zone covering 1330.3 ha area with the participation of 5210 farmers. Among these 989 demonstrations were insecticide sprays, 318 were Micronutrient sprays and 88 were weedicide sprays, 69 were fungicidal sprays. Among the crops 686 demonstrations were conducted in rice, 225 in maize, 219 in groundnut, 152 in sugarcane.

**Table 4.10.1: Details of drone demonstrations conducted during the 2023-24**

| Row Labels | No. of demos | Area (ha) | No. of farmers participated |
|---|---|---|---|
| Insecticide spray | 989 | 685.4 | 1748 |
| Micronutrient spray | 381 | 302.1 | 2284 |
| Weedicide spray | 88 | 35 | 50 |
| Other demos | 114 | 182.6 | 288 |
| Fungicide spray | 69 | 125.2 | 840 |
| Grand Total | 1641 | 1330.3 | 5210 |

### Comparison of drone technology with manual/tractor spraying

Spraying with drones require about 0.64 hours per ha while manual spraying requires 6.83 hours while tractor spraying require 4.86 hours. Thus, about 87 to 90 percent time is saved if drones are used for spraying agricultural chemicals. Similarly cost reduction ranges from 30 to 38 percent with this technology in spraying operations. 90-95 percent of Water is also saved through drone spraying.

**Table 4.10.2: Comparison of drone spraying with manual/tractor spraying**

| Particulars | Spraying with Drone | Manual spraying | Tractor spraying | % reduction over manual | % reduction over tractor |
|---|---|---|---|---|---|
| Time required (hr) /ha | 0.64 | 6.83 | 4.86 | 90.63 | 86.83 |
| Cost of operation /ha | 1471.67 | 2101.79 | 2375.00 | 29.98 | 38.03 |
| Water required / ha | 37.83 | 473.86 | 819.23 | 92.02 | 95.38 |


**Fig 1. Demonstration of drone spraying in rice field by KVK VR Gudem**

**Fig 2. Spraying of fish feed in fish tank by ICAR-CIBA**

**Fig 3. KVK, Adilabad demonstrating the drone technology in Sorghum**

## 4.11. Targeting technologies to agro-ecological zones- large scale demonstrations of best practices to enhance cotton productivity

Special Project on Cotton was implemented by ICAR-CICR supported by Min of textiles, Government of India to demonstrate technological options available with ICAR-CICR and other relevant research organisations including private industries to overcome productivity bottlenecks in cotton production in the identified agro-ecological domains. This project is planned in a cluster based and value chain approach to boost cotton productivity in Public Private Partnership (PPP) mode with the participation of ICAR-CICR, Nagpur; CITI & SIMA; Seed Industry Associations (NSAI and FSII); Extension partners (Cotton Development and Research Associations of CITI and SIMA; Agricultural Technology Application Research Institutes & their Krishi Vigyan Kendras); State Departments of Agriculture-ATMA) and Textile partners and Cotton Corporation of India (CCI).

The pilot project comprises of three components viz, High density planting system (HDPS) in low productivity areas with shallow soils with canopy, nutrient, soil health management, Closer Spacing planting system in medium productivity areas with medium deep soils under rainfed cotton ecosystem with canopy, nutrient and soil health management and Production technology for ELS cotton in niche areas under rained/irrigated farming situation.

ICAR-ATARI Zone-X has implemented Special Project on Cotton in 21 KVKs of 3 States namely Andhra Pradesh, Telangana, Tamilnadu. HDPS technology was demonstrated in 1459 ha area conducting 1485 demos. Closer Spacing planting system was demonstrated in 1152 ha area conducting 1052 demos. While Production technology for ELS cotton was demonstrated in 46 ha area conducting 106 demos.

**Table 4.11.1. details of technologies demonstrated under special project on cotton**

| State | Details of Interventions | | | | | |
|---|---|---|---|---|---|---|
| | HDPS | | Closur Spacing | | Extra Lond Staple (ELS) cotton | |
| | No. Demos | Area (ha) | No. Demos | Area (ha) | No. Demos | Area (ha) |
| Andhra Pradesh | 66 | 90 | 719 | 864 | 0 | 0 |
| Telangana | 1336 | 1326 | 333 | 288 | 0 | 0 |
| Tamil Nadu | 83 | 43 | 0 | 0 | 106 | 46 |
| Total | 1485 | 1459 | 1052 | 1152 | 106 | 46 |

### Activities undertaken from June 2023 to January 2024

Different activities have been conducted by ATARI ZONE-X KVKs to increase awareness among farming society about different cotton production technologies like Farmers trainings, Field days, Workshops, Kisan mela, Social media advisories, Distribution of Leaflets, Brochures etc., A total of 59 Farmers training, 56 Feildday , 8 Workshop and 10 Kisanmela activities are undertaken during the year with the participation of total 15,193 beneficiaries. 134 Young Professionals are recruited under this project.

**Table 4.11.2. Details of activities conducted by KVKs**

| S.No | Particulars | No of activities | No of Participants |
|---|---|---|---|
| 1. | Farmers trainings | 61 | 7671 |
| 2. | Field days | 70 | 8062 |
| 3. | Workshops | 11 | 1294 |
| 4. | Kisan Mela | 13 | 7495 |
| 5. | Number of Monitoring visits by KVK YPs/ DNO | 1411 | 5392 |
| 6. | Number of Monitoring visits by external officials of State dept./ ICAR/ Univ./others | 149 | 1708 |
| 7. | No. of farmer demonstrations identified / eligible for success stories | 116 | 141 |
| 8. | No. of Leaflets/ brochures/folders developed by KVKs | 31 | 5430 |
| 9. | Total | 1862 | 37193 |

## Sub Project 1. High Density Planting System (HDPS)

High Density Planting System includes planting of recommended hybrids/varieties at a spacing of 90x15 cm with the help of pneumatic planter or manual sowing and management of Plant architecture with : Mepiquat chloride (Chamatkar) along with other recommended package of practices.

Nine recommended cotton hybrids were demonstrated by conducting 1485 demonstrations in 1459.60 ha area under HDPS. RCH 971 BG II (Rasi Swift) was demonstrated in 451 ha followed by Armitha (NCS-2778) and Siri (NCS-927) which were demonstrated in about 328 ha. Highest yield in HDPS demos (31.50q/ha) was recorded by RCH 578 BG II (Rasi Neo) followed by Armitha (NCS-2778). All other hybrids performed equally by giving a yield of about 25 q/ha. Highest yield increase was observed in the demonstrations of RCH-930 hybrid followed by BB 7 Nano and Armitha (NCS-2778) hybrids. On an average, cotton yield in HDPS demonstrations was 25.29 q/ha which was 40.55 percent higher than the yield when compared with farmers practice.

**Table 4.11.3. Performance of HDPS technology in demonstrations**

| S. No | Hybrid/variety | No of demos | Area (ha) | Average yield in demo (Q/ha) | Average yield in control | Average of % yield increase |
|---|---|---|---|---|---|---|
| 1. | Armitha (NCS-2778) | 351 | 327.96 | 26.39 | 17.38 | 53.43 |
| 2. | BB 7 Nano | 3 | 1.20 | 13.30 | 8.42 | 57.96 |
| 3. | RCH 578 BG II (Rasi Neo) | 4 | 4.40 | 31.50 | 22.00 | 43.18 |
| 4. | RCH 929 BG - II | 154 | 112.06 | 25.08 | 18.56 | 36.68 |
| 5. | RCH 971 BG II ( Rasi swift ) | 556 | 451.13 | 25.97 | 19.45 | 35.73 |
| 6. | RCH-578 | 4 | 4.40 | 25.75 | 18.75 | 37.33 |
| 7. | RCH-930 | 29 | 11.60 | 16.50 | 9.20 | 79.35 |
| 8. | Siri (NCS-927) | 199 | 328.85 | 24.93 | 18.15 | 37.41 |
| 9. | Winner | 185 | 218.00 | 25.36 | 19.05 | 34.24 |
| | **Total/average** | **1485** | **1459.60** | **25.29** | **18.30** | **40.55** |

### Closer Spacing Planting System

In this system sowing will be done at a spacing of 90 x 30 cm spacing and with Canopy Management. These demonstrations were conducted in 1152 ha area by conduction 1050 demonstrations. On an average yield in demos was 21.83 q/ha which was 23.13 percent higher than the farmers practice (17.99q/ha). Highest average yield of 30.25 q/ha was recorded by the hybrid Bouncer followed by Bahubali and Siri (NCS-927). Highest yield increase over farmers practice was observed with CCH-03 followed by Winner.

**Table 4.11.4. Performance of Closer Spacing technology in demonstrations**

| Row Labels | No of demos | Area (ha) | Average yield in demo (Q/ha) | Average yield in control | Average of % yield increase |
|---|---|---|---|---|---|
| Aatish | 56 | 42.40 | 17.50 | 12.90 | 35.66 |
| Armitha (NCS-2778) | 221 | 301.64 | 25.26 | 20.77 | 20.71 |
| Bahubali | 2 | 1.60 | 29.25 | 25.50 | 14.71 |
| Bouncer | 5 | 6.80 | 30.25 | 25.60 | 18.16 |
| CCH 369 BG II | 92 | 73.85 | 21.25 | 16.10 | 31.44 |
| CCH-03 | 8 | 6.40 | 23.50 | 17.00 | 38.24 |
| Dr. Brint Gold | 23 | 16.62 | 25.92 | 23.33 | 10.53 |
| RCH 929 BG - II | 14 | 13.39 | 14.19 | 10.94 | 27.39 |
| RCH 971B II( Rasi swift ) | 354 | 305.50 | 17.58 | 15.00 | 20.34 |
| Siri (NCS-927) | 254 | 365.80 | 26.88 | 21.35 | 29.57 |
| Winner | 21 | 18.00 | 11.00 | 8.00 | 37.50 |
| **Total/average** | **1050** | **1152.00** | **21.83** | **17.99** | **23.13** |

## Extra Long Staple (ELS) production technologies for niche areas

ELS cotton production technology standardized by ICAR-CICR was demonstrated in 46.50 ha by conducting 106 demonstrations in Tamil Nadu. Els cotton hybrid Dels (MC5516) and variety Suraksha was demonstrated with improved production technology. Dels (MC5516) gave 21.83 q/ha yield which was 16.61 percent higher than the farmers practice. Yield in the demos of ELS cotton variety Suraksha was 17.51 q/ha which was 40.23% higher than the farmers practice.

**Table 4.11.5. Performance of ELS technology in demonstrations**

| Row Labels | No of demos | Area (ha) | Average yield in demo (Q/ha) | Average yield in control | Average of % yield increase |
|---|---|---|---|---|---|
| Dels MC5516) (Rallis) | 49 | 22 | 21.83 | 18.72 | 16.61 |
| Suraksha | 57 | 24 | 17.51 | 12.85 | 40.23 |
| **Total/average** | **106** | **46** | **18.59** | **14.32** | **34.32** |

## Costs and returns in cotton demonstrations

All the three technologies gave higher income when compared to farmers practice. Though there is an increase 16.20% in the cost of cultivation in HDPS demonstrations gave higher net income due to the increased gross income. On an average HDPS demos gave 16000 higher net income over the farmers practice which was about 80% higher. Similarly, there was 6.6% increase in the cost of cultivation in closer spacing demonstrations whin compared with farmers practice. Gross income and net increased by 22.23 and 40.55 percent respectively in these demonstration. There was a marginal reduction (3.98%) in cost of cultivation of ELS cotton demonstrations. Due to higher yield and better prices about 42 % higher gross income was recorded in ELS demonstrations.

**4.11.6. Table Costs and returns in cotton demonstrations.**

| Particulars | Cost of Cultivation | Gross Income | Net Income |
|---|---|---|---|
| **HDPS** | | | |
| Demonstrated Plots | 35903 | 72248 | 36349 |
| Control Plots (Farmers Practice) | 30899 | 50869 | 20218 |
| % increase/decrease | 16.20 | 42.03 | 79.79 |

| Particulars | Cost of Cultivation | Gross Income | Net Income |
|---|---|---|---|
| **Closer Spacing** | | | |
| Demonstrated Plots | 35443 | 71823 | 35851 |
| Control Plots (Farmers Practice) | 33250 | 58758 | 25508 |
| % increase/decrease | 6.60 | 22.23 | 40.55 |
| **ELS cotton** | | | |
| Demonstrated Plots | 38320 | 76302 | 37982 |
| Control Plots (Farmers Practice) | 39907 | 53813 | 15039 |
| % increase/decrease | -3.98 | 41.79 | 152.55 |

**14. SAKVK - Gaddipally, installation of pheromone traps by YPs in farmers field - saird KVK**

**HDPS cotton at boll bursting stage in Krishna district of Andhra Pradesh KVK, Krishna (Garikapadu )**

**Mechine sowing of HDPS cotton using pneumatic planter in siddipet dist of telangana by KVK, Medak (Tuniki).**

**Kisan mela at KVK Mehaboobnagar ( Palem)**


**HDPS demo field in Namakkal district Tamil Nadu - KVK Namakkal**

## 4.12. Out- Scaling of natural farming through KVKs

"Outscaling of natural farming through KVKs" is a central sector project that has been implemented by 44 kvks of Zone X ( Table 4.12.1) since 2022-23 with an objective of bringing widespread awareness, enhance the capacity of farmers on the concept and practice of natural farming through training and also to demonstrate the same through field demonstrations. During 2023-24 , each KVK under the project was to conduct one training program and 8 field demonstrations besides taking up various awareness activities that include exposure visits to practicing natural farming fields also.

**Table 4.12.1. KVK of Zone X implementing " Out-Scaling of Natural Farming through KVKs"**

| S. No | State | No. of. KVKs | Name of the KVKs |
|---|---|---|---|
| 1 | Andhra Pradesh | 23 | Anantapur (Reddipalli) , Anantapur (Kalyandurg), Chittoor (Kalikiri), Chittoor (RASS), East Godavari (Kalavacharla), East Godavari (Pandirimamidi), Guntur (Lam), Kadapa, Kadapa (Vonipenta), Krishna (Garikapadu), Krishna (Ghantasala), Kurnool (Banavasi), Kurnool (Yagantipalli), Nellore, Nellore (Periyavaram), Prakasam (Darsi), Prakasam (Kandukur), Srikakulam, Visakhapatnam, Visakhapatnam (BCT), Vijayanagar am, West Godavari (Undi), West Godavari (VR Gudem). |
| 2 | Telangana | 8 | Khammam (Wyra), Kothagudem, Nalgonda (Kampasagar), Nalgonda (Gaddipally), Nizamabad, Medak II (Tuniki), Mancherial, Ranga Reddy |
| 3 | Tamil Nadu | 12 | Ariyalur, Erode, Karur, Tirunelveli, Krishnagiri, Tiruvallur, Cuddalore, Salem, Trichy, Villuppuram, Ramanathapuram, Kancheepuram |
| 4 | Puducherry | 1 | Puducherry |

### Achievements of the project

The achievement of the KVKs across different states in terms of training, awareness and demonstration activities is presented in Table 4.13.2. The KVKs conducted 381 awareness programmes related to natural farming involving 25418 farmers. The capacity of 8885 farmers was built on the concept and practice of natural farming in different crops through 236 training programmes. Field demonstrations on the performance of natural farming practices were conducted at 528 locations in comparison with conventional method of farming.

**Table 4.12.2. Achievement of KVKs under natural farming project during 2023-24**

| State | Awareness Prog. Organized | | Training programmes | | Demonstrations |
|---|---|---|---|---|---|
| | Number | No. of Participants | Number | No. of Participants | Number |
| Andhra Pradesh | 212 | 7973 | 112 | 4113 | 276 |
| Telangana | 58 | 2867 | 37 | 1609 | 96 |
| Tamil Nadu | 101 | 13830 | 80 | 2657 | 144 |
| Puducherry | 10 | 748 | 7 | 506 | 12 |
| **Total** | **381** | **25418** | **236** | **8885** | **528** |

During the second year of the project too, reduction in the productivity was recorded in the demonstration plots of natural farming compared to conventional chemical methods while there was marked reduction in cost of cultivation too due to low external input use. A positive response in productivity was recorded in some crops like Bengal gram, banana and ridge gourd. In all the demonstrations, farmers got higher net returns in natural farming plots compared to chemical method of farming because of higher price paid by the consumers who preferred natural farming produce to conventional produce.

**Table 4.12.3. Per centage change in cost of cultivation and productivity in natural farming demonstrations during 2023-24**

| S.No | Crop | Mean % reduction in cost of cultivation /ha | Mean % reduction in Yield /ha |
|---|---|---|---|
| **Cereals** | | | |
| 1. | Paddy | -29.33 | -31.38 |
| 2. | Maize | -27.93 | -26.93 |
| 3. | Bajra | -12.41 | -20.91 |
| **Pulses** | | | |
| 4. | Black gram | -24.74 | -17.70 |
| 5. | Bengalgram | -91.97 | 7.62 |
| 6. | Greengram | -25.275 | -27.52 |
| 7. | Redgram | -27.85 | -17.95 |
| **Oil seeds** | | | |
| 8. | Groundnut | -18.28 | -18.24 |
| 9. | Castor | -10.37 | -27.14 |
| 10. | Sesame | -3.69 | -0.33 |
| **Cash crop** | | | |
| 11. | Sugarcane | -14.12 | -14.60 |
| 12. | Cotton | -18.92 | -8.87 |
| 13. | Cashewnut | -25.00 | -13.33 |
| **Vegetables** | | | |
| 14. | Tomato | -27.09 | -28.57 |
| 15. | Chilli | -30.98 | -28.13 |
| 16. | Brinjal | -12.87 | -6.82 |
| 17. | Bitter gourd | 32.58 | -12.50 |
| 18. | Bean | -18.44 | -19.51 |
| 19. | Bitter gourd | 32.58 | -12.5 |
| 20. | Bottle gourd | -53.42 | -60.08 |
| 21. | Ridge gourd | -25.48 | 6.26 |
| 22. | Leafy vegetables | -28.48 | -11.047 |
| 23. | Okra | -22.87 | -11.90 |
| **Spices** | | | |
| 24. | Turmeric | -12.77 | -19.94 |
| **Fruit crops** | | | |
| 25. | Acid lime | -58.00 | -10.16 |
| 26. | Banana | 14.93 | 28.75 |
| 27. | Watermelon | -6.55 | -8.45 |
| 28. | Musk melons | 10.00 | -8.33 |
| **Flower crops** | | | |
| 29. | Marigold | -29.39 | -22.23 |
| 30. | Jasmine | -48.31 | -7.41 |

## Activities conducted under Awareness programme 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.
- Exposure visits of group of farmers to the Natural Farming block of KVK every week (from each block of the respective district).
- Exposure visits of farmers to the successful Natural Farming practicing farmers
- Field 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
- Exhibitions in the instructional farm of the KVK on Natural Farming along with posters.
- Radio and TV talks on Natural farming
- Whatsapp groups maintained to give messages on natural farming to the practising farmers


**Awareness programme on Natural farming – KVK-Medak(Tuniki), Telangana**

**Demonstration plot on natural farming of Brinjal – KVK, Chittoor (RASS), Andhra Pradesh**

**Method demonstration on preparation of agniasthram -KVK- Nellore, Andra Pradesh**


**Visit to natural farming awareness centre – KVK, West Godavari (VR Gudem) , Andhra Pradesh**

## Capacity building and review workshop of KVKs implementing natural farming

The Review and capacity building workshop of KVKs implementing the project 'Out scaling of natural farming through KVKs' was held during 15-16, December, 2023 at RARS, Chintapalli, Andhra Pradesh in collaboration with ANGRAU, Lam, Guntur. The workshop was aimed at building the capacity of the nodal officers of the KVKs implementing natural farming project on various aspects of cultivating crops naturally and other issues like value addition, branding, certification and marketing of naturally produced agricultural produce.

There were four parallel technical sessions in which KVKs from AP, Telangana, Tamil Nadu and Puducherry made presentations of their achievements during 2022-23, status of implementation of the project during 2023-24 and budget utilization. There was a panel discussion on the second day in which rapporteurs of the four technical sessions presented suggestions/ action points emanating from their respective technical sessions. The nodal scientists from KVKs expressed their impressions of implementing the project, constraints faced by them and farming community at large while growing crops naturally / organically.


**Participants of the capacity building and review workshop**

## 4.13. Mera Gaon Mera Gaurav

Mera Gaon Mera Gaurav – MGMG (My Village My Pride) is an innovative initiative of Indian Council of Agricultural Research (ICAR), was planned to promote the direct interface of scientists with the farmers to speed up the lab to land process. The major objective of this scheme is to provide farmers with the required information, knowledge, developing linkages with line departments, on-spot advisories on regular basis by adopting villages. In the zone, it was implemented by 10 ICAR institutes in Andhra Pradesh, Telangana and Tamil Nadu states. 77 teams of multi-disciplinary scientists have adopted 256 villages within a radius of 50-100 km from their place of work.

**Table 4.13.1. 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 | 5 | 15 | 17 |
| 2 | Central Tobacco Research Institute (CTRI), Rajahmundry | 7 | 33 | 14 |
| | **Telangana** | | | |
| 3 | Indian Institute of Oilseeds Research (IIOR), Hyderabad | 8 | 40 | 40 |
| 4 | Indian Institute of Millets Research (IIMR), Hyderabad | 5 | 10 | 10 |
| 5 | Directorate of Poultry Research (DPR), Hyderabad | 4 | 21 | 12 |
| 6 | National Research Centre on Meat (NRCM), Hyderabad | 4 | 16 | 10 |
| 7 | Central Research Institute for Dryland Agriculture (CRIDA), Hyderabad | 8 | 60 | 27 |
| | **Tamil Nadu** | | | |
| 8 | Central Institute of Brackish water Aquaculture, Chennai | 15 | 49 | 15 |
| 9 | Sugarcane Breeding Institute (SBI), Coimbatore | 16 | 76 | 90 |
| 10 | National Research Centre for Banana (NRCB), Tiruchirappalli | 5 | 20 | 21 |
| | **Total** | **77** | **340** | **256** |

About 340 scientists of various ICAR institutes of the zone have made 206 visits to their respective adopted villages and contacted 4460 farmers and rural people during 2023-24. They have organized 45 interface meetings/ kisan Ghoshties in which 4169 farmers have participated. 40 training programmes were conducted on agriculture, fisheries, value addition and other related aspects for 1758 beneficiaries. Scientists have conducted 157 demonstrations were conducted in 3415 farmers' fields to demonstrate the superiority of the new technologies in agriculture and aquaculture. Linkages were developed with other departments and agencies for the benefit of the farmers of the adopted villages. Mobile advisories were provided to 2344 farmers, literature developed by the ICAR institutes of the zone was provided to 1513 farmers and created awareness on improved agricultural practices, soil health, pest and disease management, nutrition, value addition, government schemes etc. to 2926 farmers & rural women.

**Table 4.13.2. 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 | 206 | 4460 |
| 2 | Interface meeting/ *Goshthies* | 45 | 4169 |
| 3 | Training organized | 40 | 1758 |
| 4 | Demonstrations conducted | 157 | 3415 |
| 5 | Mobile based advisories | 744 | 2344 |
| 6 | Literature support provided (No) | 16 | 1513 |
| 7 | Awareness created (No) | 121 | 2926 |
| 8 | Linkages developed with other agencies (No.) | 101 | 1285 |

**Demonstration of Bee keeping in sunflower farmer's field: ICAR-IIOR, Hyderabad**

**QRT team visit to MGMG villages: ICAR-CTRI, Rajahmundry**

**Training on Technologies for Enhancing the Income of FPO farmers: ICAR-IIOR, Hyderabad**


**Mass-multiplication of *Trichoderma* spp. culture on Neem cake - ICAR-IIOPR, Pedavegi**

## 4.14. Swachhata Action Plan (SAP)

Swachhata Action Plan (SAP) is one of the flagship initiatives of Hon'ble Prime Minister towards making Swachh Bharat everyone's business. SAP was formally launched on 1st April 2017 with the active participation of 72 Ministries and Departments. SAP has seen a multi-dimensional range of activities including adopting villages, support for sanitation infrastructure, solid and liquid waste management, cleaner monuments, school sanitation, better sanitation in hospitals and iconic places etc. ICAR-ATARI, Hyderabad is also implementing Swachhata Abhiyana through its 72 KVKs in the zone.

### 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 2023-24 KVKs of zone 10 conducted these activities with the participation of 96118 rural population in which 1130 VIPs are also participated. During the year 3268 olf files were weededout by the KVKs of the zone. Similarly 1148 tones of scrat was disposed freeing the space of 79824 sq feet area which was used as additional Storage space for office records, stationary items, Storage space for storing inputs and farm produce, additional workspace for employees, Guest room, sitting space for visitors, Display of technologies, publications, Crop cafeteria, water storage structure, Nutri garden etc.

**Table 4.14.1. Details of Swachhata activities conducted by KVKs of Zone X**

| KVKs involved | Participants | VIPs attended | Outdoor activities | Files identified for Weeding Out | No. of Files Weeded Out | Scrap Disposed off (tones) | Space Freed (sq. ft) |
|---|---|---|---|---|---|---|---|
| 72 | 96118 | 1130 | 1699 | 4434 | 3268 | 1148 | 79824 |

### Special campaign on Swachhata Abhiyan - October 2022-23

Special campaign on Swachhata Abhiyana conducted during October 2023-24 in which Swachhata activities were conducted throughout the month. During October this campaign 4115 progrmmes were conducted in which 7794 files were weedeout from the KVKs about 42 tons of scrap was disposed freeing a space of 18407 sq feet area.

**Swatcchhta activities being carried out at KVK Erode**

**Swattchhata pledge by the KVK staff of KVK Ariyalur**


**KVK,Nellore 2 (Periyavaram) organized Swattchhata raly by school children**


**KVK Adilabad disposing scrap during Swachhta abhiyan**

## 4.15. Kisan Sarathi

Kisan Sarathi is a digital platform launched on 93rd Foundation Day celebration of Indian Council of Agriculture Research (ICAR) to facilitate farmers to get 'right information at right time' in their desired language. It is a System of Agri-information Resources Auto-transmission and Technology Hub Interface of ICAR powered by Interactive Information Dissemination System (IIDS), Digital India Corporation (DIC), Ministry of Electronics and Information Technology (MeitY), Government of India.

This Information Communication and Technology (ICT) based interface solution supports agriculture at local niche with national perspective. In Zone-10, a total of 13.46 lakh farmers (Andhra Pradesh (572555), Tamil Nadu (411221), Telangana (445074) and Puducherry (2946)) and 403 Krishi Vigyan Kendra (KVK) experts have been registered in the portal. With this digital platform, the farmers are interacting with the KVK scientists, getting information on latest technological interventions and availing personalized advisories on agriculture and allied areas.

I am an Organic traditional farmer following Integrated Farming System with crop+dairy+poultry+ vermicomposting. I am also practicing Natural farming . I earn additional income through sale of organic products and bio inputs. I disseminate my practices to school children, farmers, farm women and Krishi sakhis.

**N. Pazhani**
Kanyakumari, Tamil Nadu

# 5. Awards and Recognitions

## KVKs and KVK staff

KVK, Kurnool (Yagantipalle) received ROLING TROPHY for the award of BEST KVK in zone 10 for the year – 2022


**Photo 1 : Dr G Dhanalakshmi PC KVK, Kurnool (Yagantipalle) receiving ROLING TROPHY**

KVK Tiruvarur received TNAU Best KVK Award from TNAU, Coimbatore

**Photo 2 : KVK Thiruvarur received TNAU Best KVK Award from the Honourable Vice Chancellor**

KVK, Tiruchirappalli received Best KVK Award at during 30th Foundation Day of ICAR-NRCB, Trichy


**Photo 3 : KVK Tiruchirappalli Best KVK Award at ICAR-NRCB**

KVK, Darsi Received Best KVK Award during ZREAC meet of ANGRAU Lam Guntur

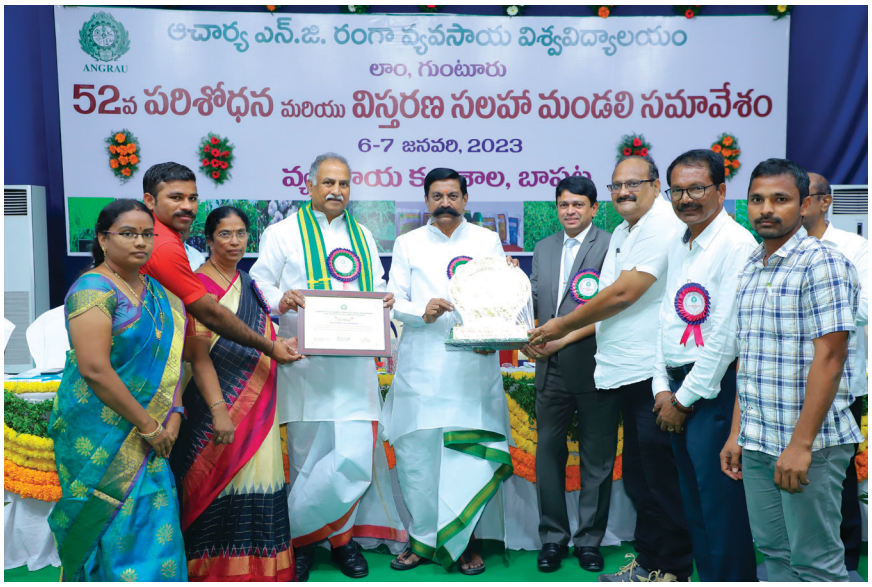


**Photo 3.1 : KVK, Darsi receiving Best KVK Award during ZREAC meet.**

K. Sudha Rani, SMS, KVK Anantapur (Reddipalli) received Best Oral Presentation award in National conference on Agri-startups:" KVK-A Technical Backstop for innovations, organized by ICAR-KVK Erode & NABARD

Dr. V. Shilpakala, SMS (PP), KVK Kadapa received Best Extension professional award from Eruvaka Foundation for the year 2022

Dr. K. Revathi, SMS (Plant Protection) KVK Krishna (Ghantasala) received Young Agricultural Scientist Award for the year 2023 from Dr B. Vasantharaj David foundation at the 5th International Conference on Recent Advances in Agricultural and Industrial Entomology and Environmental Sciences and their Impact on Environment and Food Security held on 29-30th September, 2023 at Entomology Research Institute, Loyola College, Chennai.

Dr.P.Sujathamma, Programme Coordinator, KVK, Banavasi received annual award of excellence in Agriculture - Best Scientist (Agronomy) from Eruvaaka Foundation during Kisan Mahotsav-2023 held at ANGRAU, Lam, Guntur on 19.08.2023.

Smt G. Dhanalakshmi, Senior Scientist & Head, KVK, Kurnool (Yagantipalle) received Best Institutional Film award from MANAGE Hyderabad

Sri M. Sudhakar, SMS (Agronomy), KVK, Kurnool (Yagantipalle) reveived RYTHUNESTHAM AWARD – 15.10.2023

Dr B Mounica SMS (DAMU) received woman scientist award from Astha foundation during ICCS conference 2023

Bandi Nagendra Prasad, SMS-Plant protection, KVK Visakhapatnam (Kondempudi) received Padmasri Dr. I.V.Subba Rao Rytunestam Award 2023 from Sri M. Venkayya Naidu, Former Vice President of Bharath on the occasion of 19th Anniversary of Rytunestam Monthly magazine.

Bandi Nagendra Prasad, receiving Rytunestam Award 2023 from Sri M. Venkayya Naidu, Former Vice President of Bharath

KVK Vijayanagaram (Rastakuntabai) Received BEST KVK AWARD for the year 2022-23 from ANGRAU

Dr TSSK Patro, Programme coordinator, KVK Vijayanagaram (Rastakuntubai) received J P Verma Memorial Best Scientist award from Indian Phytopathological Society, Mysore

Dr S Srinivasa Raju, Subject Matter Specialist (Horticulture), KVK Vijayanagaram (Rastakuntubai) received Young Horticultural Scientist award, 2023 by Vasantharaj David Foundation

Dr G Amrutha Veena, Subject Matter Specialist (Plant Protection), KVK Rastakuntubai Received Young Agricultural Scientist award, 2023 by Vasantharaj David Foundation

Mr. Chandra Mohan, farmer of KVK Vijayanagaram (Rastakuntubai) awarded Best Agricultural workman of ANGRAU, 2023

Dr. E. Karuna Sree, PC, KVK West Godavri (VR Gudem) received Best Extension/ Development Award from The Society of Progressive Horticulture at GB Panth University of Agriculture and Technology, Pantnagar, Uttarakhand on 05.02.2023.

Dr.A.Devivaraprasad Reddy, SMS, KVK West Godavri (VR Gudem) received the Dr.YSRHU Best Extension Scientist Award – 2020-2022

Sri.G.Shali Raju, SMS, KVK West Godavri (VR Gudem)received Padma Sri.Dr.I.V.Subbarao Rythu Nestham Award for the year 2023.

Dr. M.A. Vennila KVK Dharmapuri received All India Outstanding Agricultural Extension Worker Award from SADHNA (Society For Advancement of Human and Nature), Solan, Himachalpradesh, India

Dr.K.Sivakumar KVK Dharmapuri received Dr.Varghese Kurien Best Extension worker award from TNAU

Dr.G.Anand KVK Madurai received Best oral presentation award during International Tamil conference on Millets, CSC&RI, Madurai

Dr.S.Sathya, KVK Nagapattanam received Women Scientist Award during 1st International Agriculture Conference on Natural Vs Organic Farming ' in Contest to Bharatiya Agriculture on 24.12.23 - 26.12.23 organized by Gujarat Natural Farming and Sciences University, Anand & Hindustan Agricultural Research Welfare Society and IIMTU, Meerut, UP

KVK, Namakkal received Best stall award during Regional Millet Mela conducted on 28.05.23 - 29.05.2023

Dr S P Thamaraiselvi KVK Nilgiris received Best paper award during International conference on "Emerging Post Harvest Technologies for Shelf Life Enhancement and Valorization of Horticultural Crops" on 05.01.2024

Dr B Vinothkumar KVK Nilgiris received Best poster award during International conference on "Emerging Post Harvest Technologies for Shelf Life Enhancement and Valorization of Horticultural Crops" on 05.01.2024

Dr C Cinthia Fernandez, KVK Nilgiris received Best paper award during the1st International Conference on Emerging Innovations for Sustainable Agriculture on 02.02.2024 – 03.02.2024

Dr.V.Ramakrishnan, Assistant Professor KVK Sivagangai received Best oral presentation award during Awardthe International Conference on "Global Perspectives in Ethno Veterinary Herbal Research for Production of Residue Free Animal Products" held on 21-23, June 2023 at Veterinary College and Research Institute, Orathanadu, jointly organised with SAARC Regional Veterinary Association and Indian Society of Ethno Veterinary Herbal Research

Dr.V.Ramakrishnan, Assistant Professor, KVK Sivagangai received Louis Pasteur Animal care and Veterinary Services Award for Significant & Outstanding Contribution in the field of ANIMAL CARE, VETERINARY SERVICES and exemplary contribution on social awareness on Rabies Control.

Dr. M. Alagappan, Assistant Professor, KVK Theni received Best Paper presentation Award during International Conference By ICAATAS 2023 for a paper presentation on Impact of ARYA training in promotion of aquaculture in farm ponds

Dr.V.Karunakaran SMS(Agronomy) Krishi Vigyan Kendra, Tiruvallur received Best paper author award during 8th National Conference on Agricultural Scientific Tamil held at Dr.JJFU, Nagapattinam

Mr.J.Vijay, SMS(Agronomy) KVK Karimnagar (Jammikunta) – Received Best Agronomist Award from Gujarat Natural Farming & Science University (Anand), HARWS & IIMTU virtually during 1st International Agriculture Conference on "Natural vs Organic farming: In context to Bharatiya Agriculture" held on 24-26 December, 2023 at Uttar Pradesh.

Mr.G.Venu Gopal, SMS(Horticulture) KVK Karimnagar (Jammikunta) Received "Best Horticulturist" Award on the occasion of 5th International conference "Global insights on Research and Development in Agriculture, Horticulture and allied Sciences " conducted during 5th -7th Oct 2023 at G.H Raisoni University,Saikheda (MP).

Dr. T. Vinod Kumar, SMS (Agril. Extension) KVK Ramagirikhilla Received Best Poster Presentation Award at National conference in National conference on NexGen Extension for Evolving Resilient Agro-Eco systems organized by PJTSAU, EEI, Hyderabad. He has Presented poster presentation on "Nutrisensitive Agricultural Extension approaches and interventions for sustainable Agriculture". Received best Poster Presentation award in National conference, Hyderabad.

Dr.T.Prabhakar Reddy PC, KVK, Mahbubnagar (Palem) received Raithu Nestham Puraskaaraalu 2023- Best Scientist Award during annual day celebrations of Rhytu Nestham Foundation held at Swarna Bharthi Trust, Vijayawada on 14.10.2023.

Dr. B.Rajashekar, SMS (Extension), KVK, Palem received PJTSAU Best Extension Scientist Award 2023 during University Foundation Day Celebrations held at University Auditorium on 03.09.2023.

Dr. O. Shaila, SMS (Plant Protection), KVK, Palem Young Agricultural Scientist Award 2023 during the 5th National Conference on" Recent Advances in Agricultural & Industrial Entomology & Environmental Sciences 29-30th, September, 2023 at Chennai.

Dr. I. Thirupathi, SMS (Crop Production) received Best Poster Award - for the poster title: Effect of Insitu green manuring on yield and economics of rice during the national seminar

on Harenssing The Potential of Panchabuthas (Tathvas) For Sustainable Climate Resilient Rainfed Agriculture on 28-29th September, 2022 at CRIDA, Hyderabad

Dr. Shivakrishna Kota, PC, KVK, Bellampalli received "Young Extension Professional Award" in the National Conference on Next Gen Extension for Evolving Resilient Agri - Ecosystems (NEERAE 2023) at University Auditorium, PJTSAU from 25th - 27th September, 2023.

Dr G Bhargavi, SMS - Home Science from KVK Tuniki received innovator award from Telangana State Innovation Council, Telangana State

Mr. Srinivas Mamindla, SMS-Horticulture KVK Tuniki received Raithu Nestham-Padmasri I.V Subbarao Annual Award for Best Agriculture Extention Institute for the year 2023 on behalf of EGVF-KVK from Former Vice President of India, Sri. M.Venkaiah Naidu

A.Kiran SMS-Soil Science KVK Nalgonda (Gaddipally), Awarded with Rythu Nestham Best Scientist Awards on the occasion of 19th Annual Celebrations of Rythu Nestham Foundation day honoured by Rythunestham Foundation and Muppavaram Foundation Presented by Honourable Former Vice President Sri M.Venkaiah Naidu, Government of India. On 14-10-2023 at Swarnabharth Trust, Ghannavara, Krishna Dist.

Dr. M. Swetha, SMS (Agril. Extension) KVK Rudrur received Best Poster Presentation Award in National Conference on Next Gen Extension for Evolving Resilient Agri-Ecosystems

## Farmers

Mrs. Gara Lakshmi receiving best female progressive farmers award under poultry farming category at 17th national conference by Indian Association of Women Veterinarians at NTR CVSc, Gannavaram

**Photo 4 : Mrs. Gara Lakshmi receiving Best Poultry Women Farmer award KVK-BCT, Visakhapatnam**

Sri.M Kamalakar Rao Progressive Farmer from KVK AP-East Godavari (Pandirimamidi) received, best farmer award from Hon'ble Deputy Chief Minister Sri P.Rajanna Dora at State Tribal Festivals on 22.07.2023

Pucchaykayala Ramu, KVK Anantapur (Reddipalli) farmer received Best innovation farmer award from ICAR-ICAR-CRIDA, Hyderabad on 39th foundation day -2023

Sri K.Purushotham Naidu KVK Tirupati farmer received Padma Sri Dr. I.V.Subbarao Rythu Nestham Award award from

Smt. Srilatha Reddy (woman farmer from KVK Kothagudem received Best Woman Farmer" award "PJTSAU Abyudaya rythu praskaram" at PJTS Agricultural University 9th University Foundation Day.

Sri.M Kamalakar Rao receiving best farmer award from Hon'ble Deputy Chief Minister Sri P.Rajanna Dora at State Tribal Festivals on 22.07.2023

Sri L. Sadasiva Reddy, V.Rajupalem (V), Chapadu (M), YSR Dist received Ugadi uraskaram as best Farmer for the year 2022-23 frpm Dr. A. Vishnu Vardhan Reddy, Hon'ble Vice Chancellor, ANGRAU, LAM, Guntur on 22.03.2023 at LAM, Guntur

Mr.S.Meenakshisundaram, Erumbukadu, (Progressive farmer of KVK Kanyakumari) awarded Best Banana farmer Award from ICAR-NRC on Banana


**Photo 5 : KVK Kanyakumari- Shri S Meenakshisundaram receiving Best Banana farmer Award from ICAR- NRCB Trichy**

Sri. V. Srihari, farmer from KVK Wyra received Best Progressive Farmer award PJTSAU university foundation day

Sri. I.V.K Satyanarayana Reddy farmer from KVK Wyra Best Farmer award PJTSAU university foundation day

Smt N.Sujatha, millet farmer form , KVK Srikakukam received Millet Mahila Award from IIMR, Hyderabad and ANGRAU, Guntur

KVK, Darsi Received Best KVK Award during ZREAC meeting

# 6. Important Events

### Inauguration of Administrative Building and Modern Soil Testing Laboratory at KVK Adilabad

Dr. Udham Singh Gautam, Hon'ble DDG (Agricultural Extension), ICAR-New Delhi Inaugurated Administrative Building and Modern Soil Testing Laboratory at KVK Adilabad. Other dignitaries present during the occasion include Dr. Shaik N. Meera, Director, ICAR-ATARI, Zone-X, Hyderabad, Dr. S. Sudheer Kumar, Registrar, PJTSAU, Dr. V. Sudharani, Director of Extension, PJTSAU and Dr. Venkataramana, Director of Research, PJTSAU and Dr. G. Sreenivas, Associate Director of Research, RARS, Jagtial. On this occasion interaction of Hon'ble DDG (Agriculture Extension) with farmers was organized and discussed about

various technologies transferred to the farming community, impact of drone technology, impact of the demonstration taken up in the farmers field and various projects and also strengthening of KVKs to cater the needs of farming community.

### Shri. Hardeep Singh Puri, Hon'ble Union Minister and Shir. Rameswar Teli, Hon'ble Minister of State, Govt. of India attended Vikshit Bharat Sankalp Yatra

Vikshit Bharat Sankalp Yatra (VBSY) organized by KVK Chengalpattu at at Minnal Chithamur Grama Panchayat in Acharapakkam block of Chengalpattu district on 30.11.2023 in Shri. Hardeep Singh Puri, Hon'ble Union Minister for Housing and Urban Affairs and Petroleum and Natural Gas, Government of India, New Delhi and Shir. Rameswar Teli , Hon'ble Minister of State for Petroleum and Natural Gas and Labour and Employment, Government of India, New Delhi participated. They also witnessed the webcast of Hon'ble Prime Minister of India launching Drone Didi and 10,000$^{th}$ Kendra of PM-Jan Aushadi Kendra.

### Honorable MoA&FW, Government of Puducherry, Sri. C. Djeacoumar visited ICARATARI, Hyderabad on 12-06-2023

Honorable minister for agriculture and farmers' welfare, Government of Puducherry, Sri. C.Djeacoumar visited ICAR-ATARI , Hyderabad on 12-06-2023 and discussed performance of Krishi Vigyan Kendras in the union territory of Puducherry with Dr. Shaik N Meera, Director of the institute. The minister later made a visit to

KMG dairy farm at Gudimalkapur where more than two hundred buffaloes of Murra breed are maintained, and goat farm of an awardee farmer , Sri. M. Mahender Reddy at Nyalata in Ranga Reddy district.

### Dr. Udham Singh Gautham, DDG (AE) ICAR participated in Rythu Sadassu & Agricultural Exhibition organized by KVK- Nalgonda (Gaddipally)

Dr. Udham Singh Gautham, DDG (AE) ICAR inaugurated the exhibition stalls and honoured the occasion of Rythu Sadassu & Agricultural Exhibition and engaged in meaningful discussions


with farmers and highlighted the significance of timely planting with appropriate crops and varieties. Dr. Shaik. N. Meera, Director, ICAR- ATARI, Zone-X, Hyderabad attended as honorary guest and addressed the farmers regarding climate-resilient technologies to address the challenges posed by climate change during the event.

### Zonal Programme Management Committee (ZPMC) meeting of Farmer FIRST Programme and Zonal Monitoring Committee meeting of ARYA Project held at ICAR-ATARI Hyderabad

ICAR-ATARI, Hyderabad organized meetings of Zonal Programme Management Committee (ZPMC) of Farmer FIRST Programme and Zonal Monitoring Committee of ARYA Project on 02.11.2023. In the inaugural session Dr. Shaik N. Meera, Director, ICAR-ATARI, Hyderabad in his introductory remarks emphasized the uniqueness and importance of the programmes and KVK system. Two invited talks


one on "Accelerating socially equitable agricultural development." By Dr. Ranjitha Puskur, IRRI and the second on "Avenues and Opportunities for Agri-startups through Government Finance Institutions in India" by Dr. Yandra Haragopal, General Manager, NABARD, Hyderabad were organized for the benefit of the participants. After the inaugural session review of FFP and ARYA projects were carried out by the respective committees.

### Swachhta Hi Sewa" campaign and Gandhi Jayanti celebrations at ICARATARI, Zone-X, Hyderabad

ICAR-ATARI, Zone-X, Hyderabad Celebrated Gandhi Jayanti with the spirit of "Swachhta Hi Sewa" campaign and conducted cleanliness drive on 2nd October 2023, with the purpose of spreading awareness among the Sta.....? regardingcleanlinessanditsbenefits.Onthisspecial day, let's remember the teachings of Mahatma Gandhi and his emphasis on cleanliness and

selfless service. In this massive cleanliness drive all the staff of the institute participated and cleaned the surrounding areas of the institute.

### One day workshop on Gender Dynamics of Seed Systems in Telangana organized at ICAR-ATARI, Hyderabad

ICAR- Agricultural Technology Application Research Institute, Zone-X, Hyderabad organized one day workshop on "Gender Dynamics of Seed Systems in Telangana" jointly with ICAR National Institute of Agricultural Economics & Policy Research on 04.10.2023 to understand the gender participation in the seed production of rice, maize and redgram, R&D in seed sector, seed value


chains, role of private sector in seed systems and farmers' collectives in seed systems of Telangana. The workshop was attended by delegates from farming community, seed companies, extension agencies (ATARI, KVKs), state seed corporation, researchers, NGOs etc.

### Director, ICAR-CICR, Nagpur visited demonstrations of special project on cotton

Dr. Y. G. Prasad, Director ICAR-CICR, Nagpur visited demonstrations of Closer spacing technology in

cotton on 15.11.2023 conducted by KVK Krishna (Garikapadu) and interacted with farmers on the yields and problems faced to implement closure spacing and gave suggestions on sowing and picking of cotton. He enquired on method of picking and storage facility at farmer level. As there is pink boll worm incidence, he suggested measures to manage the pest.

### Regional Millet Mela at KVK Dharmapuri

As a part of the Celebration of the International Year of Millets 2023, Krishi Vigyan Kendra, Dharmapuri organized a Mega Regional Millet Mela 2023 on May 28 and May 29, 2023. Honorable Minister for Agriculture and Farmers' Welfare, Government

of Tamil Nadu Thiru. M.R.K. Panneerselvam inaugurated the mela and exhibition. Dr. V. Geethalakshmi, Vice-Chancellor, TNAU, Coimbatore and Dr. Shaik N Meera, Director ICAR-

ATARI also participated in the mela. About 7000 farmers, 800 students 350 officials were attended the Mela.

**Dr.U.S. Gautam DDG (Agri. Extn.) ICAR, New Delhi visited KVK Karimnagar (Jammikunta) on 17.11.2023 along with** Dr. Shaik N Meere Director ICAR-ATARI, Hyderabad. DDG interacted with the Awardee farmers, Entrepreneurs, FPO members and SHG members and felicitated them.

## Krishi Vigyan Kendra, Krishnagiri organized Millet Recipe Contest

ICAR-KVK, Krishnagiri, Tamil Nadu organized a Millet Recipe Contest at Anchetty Village, Thally Block of Krishnagiri District to celebrate the International Year of Millet 2023 and create awareness about the health benefits of millets in shaping our millets in lifestyle area expansion for increased production and productivity. Dr. Ranjay Kumar Singh, Assistant Director General (Agrl. Extn.) ICAR, New Delhi and Dr. Shaik N. Meera, Director, ICAR-ATARI, Zone X, Hyderabad witnessed the contest.

## Honorable Governor of Tamil Nadu Shri. R.N. Ravi flagged off the Viksit Bharat Sankalp Yatra at KVK Tiruvannamalai

The Krishi Vigyan Kendra, Thiruvannamalai had organized the Vikshit Bharat Shankalp Yatra in Jawathu hills on 16th November 2023 to raise awareness and facilitate the delivery of various centrally sponsored welfare scheme benefits. Honourable Governor of Tamil Nadu Shri. R.N. Ravi flagged off the Viksit Bharat Sankalp Yatra van and he shared his ideas on tribal area

development, and interacted with tribal farmers. On the occasion, Dr.Shaik.N.Mira, Director, ATARI, ICAR, Hyderabad, Shri B. Murugesh, District Collector, Thiruvannamalai District, SHri. R.Shankar Narayanan, Chief General Manager, NABARD,Tamil Nadu, Shri. S. Ramesh, President, ICAR Krishi Vigyan Kendra, Mr.Annadurai, DIG, PIB, Chennai were also attended. A total of 684 tribal farmers participated in the event

## DDG visit to KVK Tiruppur

Dr.Udham Singh Gautam, Deputy Director General (Agrl Extension), ICAR, New Delhi Inaugurated Administrative building, Farmers hostel building and vermicompost unit at this KVK Tiruppur

I cultivated banana following good nutrition management practices suggested by KVK, Vonipenta (spray of d 13:0:45 and 0:0:50 . I achieved an yield of 70 t / ha which is an of 10.71 % . I got an additional income of Rs. 67,000.

**Setti Venkatesulu**
Adireddypalli, YSR District

After the Vocational Skill Training On Bamboo value added products for tribal youth at KVK, Venkataramannagudem I established a unit for preparing making handicrafts from bamboo as I realized good scope for marketing the bamboo products. The additional income from this enterprise is significantly contributing to my family income.

**Kovvasu Vijayakumari**
Kotaramachandrapuram,
West Godavari District, A.P.

With the technical assistance of KVK-Gaddipally, I initiated Mulberry plantation and Silkworm rearing unit which gave a net income of Rs.6,40,000 per annum through innovative technologies in Sericulture. I established mulberry nursery unit and distributed mulberry saplings to farmers for supplemental income.

**B. Anjaiah**
Lingala, Suryapet, Telangana

# 7. Staff Position

## Staff Position in ICAR-ATARI, Zone X, Hyderabad

| 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. | Shri. S. Siva Rama Krishna | Private Secretary |
| 11. | Vacant | Technician T-1 |
| 12. | Shri P. Venkatesh | Assistant |
| 13. | Vacant | Assistant |
| 14. | Smt. N. Archana | Upper Division Clerk |
| 15. | Vacant | Lower Division Clerk |
| 16. | Vacant | Lower Division Clerk |
| 17. | Smt. Subbalakshmi | Skilled Supporting Staff |

# 8. List of KVKS in Zone-X

## 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 |

| S. No. | KVK/ District | Name and Address of KVKs |
|---|---|---|
| 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 |
| 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 |

| S. No. | KVK/ District | Name and Address of KVKs |
|---|---|---|
| 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 |
| 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 |