वार्षिक प्रतिवेदन
Annual Report
2025

भा.कृ.अनु.प – केंद्रीय द्वीपीय कृषि अनुसंधान संस्थान
श्री विजय पुरम, अंडमान और निकोबार द्वीप समूह

ICAR-CENTRAL ISLAND AGRICULTURAL RESEARCH INSTITUTE
SRI VIJAYA PURAM, ANDAMAN & NICOBAR ISLANDS

Dr. Sanjay Kumar Singh, DDG (HS), ICAR, New Delhi, visited ICAR-CIARI

Parliamentary Standing Committee on Agriculture, Animal Husbandry & Food Processing visited ICAR-CIARI, Sri Vijaya Puram

Dr. A.K. Nayak,DDG (NRM), ICAR, New Delhi visited ICAR-CIARI, Sri Vijaya Puram

Annual Report-2025

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SRI VIJAYA PURAM, ANDAMAN & NICOBAR ISLANDS

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प्रस्तावना

भाकृअनुप–केंद्रीय द्वीप कृषि अनुसंधान संस्थान (सीआईएआरआई), श्री विजया पुरम, एक प्रमुख अनुसंधान संस्थान है, जो अंडमान और निकोबार तथा लक्षद्वीप द्वीपसमूहों के नाज़ुक और अद्वितीय पारिस्थितिकी तंत्रों में कृषि, बागवानी, पशुपालन और मत्स्य पालन के एकीकृत और सतत विकास के लिए समर्पित है।

वर्ष 2025 में, संस्थान ने अंडमान, निकोबार और लक्षद्वीप द्वीपों में आजीविका को मज़बूत करने और पारिस्थितिक लचीलेपन को बढ़ाने की दिशा में कई परिवर्तनकारी उपलब्धियाँ हासिल कीं। अत्याधुनिक आणविक विज्ञान को ज़मीनी स्तर की प्रौद्योगिकियों के साथ एकीकृत करके सीआईएआरआई ने द्वीपों में टिकाऊ कृषि को एक नई परिभाषा दी है। इसने राज्य उप-समिति के माध्यम से कुल 18 प्रकार की फसलों और मसालों की किस्में जारी की। नारियल पर आधारित एकीकृत कृषि प्रणाली का विस्तार 2 हेक्टेयर तक किया गया, जिससे संसाधनों का पुनरूपयोग, फसल और पशुधन का एकीकरण तथा विविधीकरण बेहतर हुआ। इसके परिणामस्वरूप, कृषि प्रणाली के लचीलेपन में सुधार हुआ और इससे ₹3.45 लाख का शुद्ध प्रति लाभ दर्ज किया गया।

आईएमडी द्वारा प्रायोजित 'ग्रामीण कृषि मौसम सेवा' (जीकेएमएस) परियोजना के तहत कृषि-मौसम विज्ञान वेधशाला को उन्नत किया गया, जिससे समय पर और स्थान-विशेष के अनुसार परामर्श उपलब्ध कराए जा सके। अत्यधिक बाढ़ और लवणता के प्रति सहिष्णुता वाले चावल के एक वंशक्रम (द्वीप धान-11) की पहचान की गई। संस्थान ने 'वुडी पेपर' की एक अनूठी किस्म को पंजीकृत किया और कम-कौमारिन वाली दालचीनी की एक किस्म की पहचान की। रतालू 'ग्रेटर यम' (बैंगनी गूदे वाला), कुंदरू (आइवी गॉर्ड) और कचरी 'स्नैप मेलन' की अधिक उपज देने वाली किस्मों के बेहतर जीनप्ररूपों की पहचान की गई।

सीआईएआरआई के वैज्ञानिकों ने रासायनिक शुक्राणु लिंग-निर्धारण को मानकीकृत किया, खरगोशों में लिंग-निर्धारण के लिए एक निष्कर्षण रहित डीएनए जांच-आधारित आणविक उपकरण विकसित किया तथा, अधिक प्रजनन क्षमता वाली बकरियों के चयन के लिए आणविक मार्करों की पहचान की। ग्रामीण कुक्कुट पालन के प्रदर्शन पर उच्च तापमान और आर्द्रता के प्रतिकूल प्रभावों को कम करने के लिए एक बहु-प्रभेदी प्रोबायोटिक तैयार किया गया।

संस्थान ने कार निकोबार प्रबंधन योजना के लिए 32 वर्षों के समुद्र तट डेटा का मानचित्रण किया और जलीय कृषि के लिए अत्यधिक उपयुक्त क्षेत्रों की पहचान की। ग्रेसिलेरिया और अकैन्थोपोरा की खेती के लिए अभिनव ट्यूब-नेट प्रणालियाँ विकसित की गईं। मछली के इलाज के लिए एक हर्बल दवा विकसित की गई, जिसने संक्रमित बेट्टा (Betta) मछली के जीवित रहने की दर को 80% से अधिक तक बढ़ा दिया। मोइना (Moina) संवर्धन और बायोफ्लॉक प्रोद्योगिकी से रोहू मछली के शिशुओं (fry) में 91.3% जीवित रहने की दर हासिल हुई। मिनिकॉय में 'पोल-एंड-लाइन' मछली पकड़ने की विधि को प्रमाणित किया गया, जबकि एफएडीए और स्मोक्ड टूना उत्पादों की शुरुआत से बाज़ार मूल्य में उल्लेखनीय वृद्धि हुई।

इस वर्ष के दौरान, संस्थान ने 12 प्रौद्योगिकियाँ विकसित कीं, जिनमें से पाँच का व्यावसायीकरण किया गया। तीन पेटेंटों के साथ आईपीआर पोर्टफोलियो को सुदृढ़ किया गया, और दो प्रौद्योगिकियों को बड़े पैमाने पर विस्तार के लिए हितधारकों को सफलतापूर्वक हस्तांतरित किया गया। वुडी पेपर और औषधीय पादपों की खेती के लिए TMT-बार शेड हाउस का उपयोग करने वाली कम लागत की तकनीक को मानकीकृत किया गया। उष्णकटिबंधीय कृषि शिक्षा की थीम पर आधारित 'द्वीप एग्रो-इको वॉक' नामक एग्रो-इकोटूरिज्म मॉडल, सिप्पीघाट और गराचरमा फार्मों में स्थापित किए गए।

स्थिरता और आत्मनिर्भरता के प्रति अपनी प्रतिबद्धता को सुदृढ़ करते हुए, प्रशासनिक भवन पर सोलर पैनल लगाए गए, जिससे स्वच्छ ऊर्जा का उत्पादन संभव हुआ और पारंपरिक बिजली स्रोतों पर निर्भरता कम हुई। क्षमता निर्माण पर विशेष ध्यान दिया गया, जिसके तहत 120 से अधिक प्रशिक्षण और विस्तार कार्यक्रमों से 4,357 किसानों को लाभ पहुँचा। सीआईएआरआई ने 70 क्विंटल प्रजनक बीज और 49,000 गुणवत्तापूर्ण रोपण सामग्री की आपूर्ति करके एक स्थायी संसाधन केंद्र के रूप में कार्य किया। महिला सशक्तिकरण को सक्रिय रूप से बढ़ावा दिया गया, जिसमें 1,909 महिला लाभार्थियों (43%) ने विभिन्न संस्थागत गतिविधियों में भाग लिया।

संस्थान के कृषि विज्ञान केंद्रों (KVKs) ने, जो आउटरीच स्टेशनों के रूप में काम करते हैं, 42 कार्यक्रमों के माध्यम से 1,605 किसानों को लाभ पहुँचाते हुए, प्रौद्योगिकी के प्रसार, क्षमता निर्माण और किसानों के सशक्तिकरण में एक अहम भूमिका निभाई। 4,744 आदिवासी लाभार्थियों तक वैज्ञानिक खेती का ज्ञान पहुँचाया गया, जिनमें से 36% आदिवासी महिलाएँ थीं। जीपीएस-आधारित उपायों के ज़रिए, आदिवासी मछुआरों ने अपनी मासिक आय (₹12,000 से ₹28,000) दोगुनी कर ली और मछली पकड़ने की सुरक्षित तथा लंबी यात्राएँ संभव होने से अपने शुद्ध लाभ को लगभग तीन गुना बढ़ा लिया। सीआईएआरआई ने छह सम्मेलनों, सेमिनारों और कार्यशालाओं का आयोजन करके विद्वानों और शिक्षाविदों के शोध परिणामों के प्रसार में भी एक महत्वपूर्ण भूमिका निभाई, जिनमें 323 प्रतिनिधियों ने भाग लिया।

भारत सरकार की कृषि, पशुपालन और खाद्य प्रसंस्करण संबंधी संसदीय स्थायी समिति ने अपने दौरे के दौरान संस्थान की उपलब्धियों की सराहना की और सीआईएआरआई के लिए एक विशेष अनुदान की अनुशंसा की।

मैं डॉ. मांगी लाल जाट, सचिव (डेयर) और महानिदेशक (भाकृअनुप) के प्रति अपनी हार्दिक कृतज्ञता व्यक्त करता हूँ; उनके दूरदर्शी नेतृत्व और कार्यनीतिपरक सूझ-बूझ ने संस्थान को द्वीपीय पारिस्थितिकी तंत्र की अनूठी चुनौतियों से निपटने के लिए सशक्त बनाने में महत्वपूर्ण भूमिका निभाई है।

मैं डॉ. ए. के. नायक, उप महानिदेशक (एनआरएम) का उनके निरंतर प्रोत्साहन और कार्यनीतिपरक दिशा-निर्देश के लिए, तथा डॉ. ए. वेलमुरुगन, सहायक महानिदेशक (एस एवं डब्ल्यूएम) का हमारे अनुसंधान मानकों को उन्नत करने हेतु आवश्यक तकनीकी गहराई और मार्गदर्शन प्रदान करने के लिए समान रूप से आभारी हूँ।

मैं डॉ. संजय कुमार सिंह, उप महानिदेशक (बागवानी विज्ञान), भाकृअनुप, नई दिल्ली, को उनके दूरदर्शी मार्गदर्शन और निरंतर प्रोत्साहन के लिए अपना हार्दिक धन्यवाद देता हूँ। मैं डॉ. वी. बी. पटेल, सहायक महानिदेशक (फल और बागान फसलें), भाकृअनुप, का भी उनके तकनीकी सहयोग और सहायता के लिए हृदय से आभारी हूँ।

भाकृअनुप–केंद्रीय द्वीप कृषि अनुसंधान संस्थान के पूर्व निदेशक, डॉ. एकनाथ बी. चाकुरकर, विशेष सराहना के पात्र हैं। उनकी दूरदर्शी सोच और नेतृत्व ने वह गति प्रदान की, जिसके परिणामस्वरूप इस रिपोर्ट में रेखांकित की गई महत्वपूर्ण उपलब्धियाँ हासिल हुईं।

मैं अनुसंधान सलाहकार समिति (आरएसी) के अध्यक्ष और सदस्यों को उनके गहन पर्यवेक्षण और रचनात्मक नीतिगत सुझावों के लिए भी अपना हार्दिक धन्यवाद देता हूँ।

अंत में, मैं सीआईएआरआई की पूरी टीम—जिसमें वैज्ञानिक, तकनीकी, प्रशासनिक, वित्त, सहायक और संविदा कर्मचारी शामिल हैं—के असाधारण समर्पण और तालमेल की सराहना करता हूँ। ये उपलब्धियाँ उनके सामूहिक प्रयासों और अंडमान, निकोबार तथा लक्षद्वीप द्वीपों के किसान समुदायों की सेवा के प्रति उनके अटूट समर्पण का प्रत्यक्ष परिणाम हैं।

(डॉ. जय सुंदर)
निदेशक (कार्यवाहक)
भारतीय कृषि अनुसंधान परिषद-केंद्रीय द्वीप कृषि अनुसंधान संस्थान, श्री विजया पुरम

PREFACE

The ICAR–Central Island Agricultural Research Institute (CIARI), Sri Vijaya Puram, is a premier research institute dedicated to the integrated and sustainable development of agriculture, horticulture, animal husbandry, and fisheries in the fragile and unique ecosystems of the Andaman & Nicobar and Lakshadweep archipelagos.

In 2025, the Institute achieved transformative milestones in strengthening livelihoods and enhancing ecological resilience across the Andaman, Nicobar, and Lakshadweep islands. By integrating cutting-edge molecular science with grassroots technologies, CIARI has redefined sustainable island agriculture. A total of 18 crop and spice varieties were released through the State Sub-Committee. The coconut-based Integrated Farming System was expanded to 2 ha, enhancing resource recycling, crop-livestock integration, and diversification. This resulted in improved system resilience with a recorded net return of ₹3.45 lakh.

The Agro-meteorological Observatory was upgraded under the IMD-sponsored Gramin Krishi Mausam Seva (GKMS) project, providing timely and location-specific advisories. Rice line (Dweep Dhan-11) with superior flood and salinity tolerance was identified. The Institute registered a unique Woody Pepper and identified a low-coumarin cinnamon. Superior genotypes of high-yielding varieties were identified for greater yam (purple flesh), ivy gourd, and snap melon.

CIARI scientists standardized chemical sperm sexing, developed an extraction-free DNA probe–based molecular tool for sexing in rabbits, and identified molecular markers for selecting high-fecundity goats. A multi-strain probiotic was designed to mitigate the adverse effects of high temperature and humidity on rural poultry performance.

The Institute mapped 32 years of shoreline data for the Car Nicobar Management Plan and identified high-suitability zones for aquaculture. Innovative tube-net systems were developed for the cultivation of Gracilaria and Acanthopora. A herbal fish cure was developed that enhanced the survival of infected Betta fish to over 80%. Moina enrichment and biofloc technology achieved 91.3% survival in rohu fry. Pole-and-line fishing was validated in Minicoy, while the introduction of FADs and smoked tuna products significantly enhanced market value.

During the year, the Institute developed 12 technologies, of which five were commercialized. The IPR portfolio was strengthened with three patents, and two technologies were successfully transferred to stakeholders for large-scale upscaling. Low-cost technology using TMT-bar shade houses was standardized for woody pepper and medicinal plant cultivation. Agro-ecotourism models titled Dweep Agro-Eco Walk were established at the Sippighat and Garacharma farms with the theme of tropical agriculture education.

Reinforcing its commitment to sustainability and self-reliance, solar panels were installed on the administrative building, enabling clean energy generation and reducing dependence on conventional power sources. Capacity building remained a key focus, with more than 120 training and extension programmes benefiting 4,357 farmers. CIARI served as a sustainable resource hub by supplying 70

quintals of breeder seed and 49,000 quality planting materials. Women empowerment was actively promoted, with 1,909 women beneficiaries (43%) participating in various institutional activities.

The Krishi Vigyan Kendras (KVKs) of the Institute, functioning as outreach stations, played a pivotal role in technology dissemination, capacity building, and farmer empowerment through 42 programmes benefiting 1,605 farmers. Scientific farming knowledge was disseminated to 4,744 tribal beneficiaries, of whom 36% were tribal women. Through GPS-based interventions, tribal fishermen doubled their monthly income (₹12,000 to ₹28,000) and nearly tripled net profits by enabling safer and longer fishing trips. CIARI also played a vital role in disseminating research outputs of scholars and academicians by organizing six conferences, seminars, and workshops, with the participation of 323 delegates.

The Parliamentary Standing Committee on Agriculture, Animal Husbandry, and Food Processing, Government of India, during its visit, appreciated the achievements of the Institute and recommended a special grant for CIARI.

I convey my profound gratitude to Dr. Mangi Lal Jat, Secretary (DARE) and Director General (ICAR), for his visionary leadership and strategic foresight, which have been instrumental in empowering the Institute to address the unique challenges of island ecosystems.

I am equally grateful to Dr. A.K. Nayak, Deputy Director General (NRM), for his constant encouragement and strategic direction, and to Dr. A. Velmurugan, Assistant Director General (S&WM), for providing the technical depth and guidance necessary to elevate our research standards.

I express my sincere thanks to Dr. Sanjay Kumar Singh, Deputy Director General (Horticultural Science), ICAR, New Delhi, for his visionary guidance and continuous encouragement. I am also deeply thankful to Dr. V.B. Patel, Assistant Director General (Fruits and Plantation Crops), ICAR, for his technical facilitation and cooperation.

A special note of appreciation is due to Dr. Eaknath B. Chakurkar, former Director, ICAR-CIARI. His foundational vision and leadership established the momentum that culminated in the significant achievements highlighted in this report.

I also extend my sincere thanks to the Chairperson and members of the Research Advisory Committee (RAC) for their rigorous oversight and constructive policy inputs.

Lastly, I acknowledge the exceptional dedication and synergy of the entire CIARI team of scientific, technical, administrative, finance, supporting and contractual staff. These milestones are a direct result of their collective efforts and unwavering commitment to serving the farming communities of the Andaman, Nicobar, and Lakshadweep islands.

(Dr. Jai Sunder)
Director (Acting)
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2.1 कार्यकारी सारांश

प्राकृतिक संसाधन प्रबंधन

- जीएस-एमएस के माध्यम से किए गए पादपरासायनिक प्रोफाइलिंग अध्ययन से यह पता चला कि औषधीय पादपों और वृक्षों—जैसे मोरिंडा सिट्रिफोलिया, मैकरंगा निकोबारिका, पांडनस लेरम और टेरोकार्पस डलबर्गियोइड्स—में भरपूर और विविध प्रकार के जैव सक्रिय यौगिक पाए जाते हैं जो उनकी उपचारात्मक क्षमताओं की पुष्टि करते हैं।
- मोरिंडा सिट्रिफोलिया के गूदे और पत्तियों के मेथनॉल अर्क में फिनॉलिक, फ्लेवोनॉयड तथा प्रतिऑक्सीकारक गतिविधि अत्यधिक पाई गई, जो इनके सुदृढ़ प्रतिऑक्सीकारक और रोगाणुरोधी गुणों को दर्शाती है। यह गुण न्यूट्रास्यूटिकल अनुप्रयोगों के लिए उपयुक्त है।
- मैकरंगा निकोबारिका और पांडनस लेरम में भी उल्लेखनीय फिनॉलिक और प्रतिऑक्सीकारक गतिविधियाँ पाई गईं, जिनमें पौधों के कुछ विशेष भागों में मुक्त कणों को निष्क्रिय करने की क्षमता अधिक प्रभावी देखी गई।
- एसएसआर चिह्नको का उपयोग करके पैंडानुस की चार प्रजातियों के आनुवंशिक विविधता विश्लेषण में स्पष्ट आनुवंशिक भिन्नता सामने आई। इनमें पीएफएसएसआर-5 चिह्नक ने अधिक बहुरूपता (PIC 0.77) दिखाई, जो संरक्षण और प्रजनन कार्यनीतियों के लिए उपयोगी है।
- पंचामृत की सहायता से सिल्वर नैनोकणों के संश्लेषण को प्रतिक्रिया सतह कार्यप्रणाली (रिस्पॉन्स सरफेस मेथडोलॉजी) के उपयोग के माध्यम से सांख्यिकीय रूप से अनुकूलित किया गया। इसमें तापमान, pH, अर्क की सांद्रता और इनक्यूबेशन समय के अनुकूल स्तर पर अधिकतम स्थिरता और यूवी अवशोषण प्राप्त हुआ।
- अनुकूलित नैनोकण संश्लेषण मॉडल ने उच्च विश्वसनीयता (R^2 = 0.922) प्रदर्शित की, जो रोगाणुरोधी और नैनोप्रौद्योगिकी अनुसंधान में इसके अनुप्रयोग को सहायता प्रदान करती है।
- प्राकृतिक खेती में उपयोग की जाने वाली निविष्टियों (इनपुट्स) के पोषक तत्व विश्लेषण से यह पुष्टि हुई कि बीजामृत, जीवामृत और घनजीवामृत में आवश्यक प्रमुख पोषक तत्व (एन, पी, के) मौजूद हैं, जो टिकाऊ मृदा उर्वरता प्रबंधन में उनकी महत्वपूर्ण भूमिका को प्रमाणित करते हैं।
- टेरोकार्पस डलबर्जियोइड्स के जीवाणुरोधी परीक्षण में बैसिलस सबटिलिस, एस्चेरिचिया कोली और स्टैफिलोकोकस ऑरियस के विरुद्ध उल्लेखनीय अवरोध देखा गया, जिसमें रॉल और तने के अर्क ने सबसे अधिक गतिविधि प्रदर्शित की।
- नारियल आधारित एकीकृत कृषि प्रणाली को 2 हेक्टेयर तक विस्तारित करने से संसाधनों के पुनरूपयोग, फसल–पशुधन एकीकरण और विविधीकरण को बढ़ावा मिला, जिससे प्रणाली के लचीलेपन और किसानों की आय में सुधार हुआ।
- इस एकीकृत कृषि मॉडल से ₹3.45 लाख का शुद्ध प्रतिलाभ दर्ज किया गया, जिसमें नारियल, वर्मी-कम्पोस्ट, बायोकॉन्सोर्टिया, सब्जियाँ, कक्कुट पालन और बकरी पालन का प्रमुख योगदान रहा।
- धान की रोपाई की समयावधि पर किए गए अध्ययनों से यह पाया गया कि 1 से 15 जून का समय अधिकतम उपज प्राप्त करने के लिए सबसे उपयुक्त है। द्वीपीय कृषि-जलवायु परिस्थितियों में ओरिजा सैटिवा की किस्म कैरीधान 6 ने सर्वोत्तम प्रदर्शन किया।
- फलों और सब्जियों में नाशीजीवनाशी अवशेषों की बड़े पैमाने पर निगरानी से खाद्य सुरक्षा निगरानी तंत्र को मजबूत किया गया। साथ ही पाइपर नाइग्रम को शामिल करने से विश्लेषण के दायरे का विस्तार हुआ।
- एकीकृत कृषि-मौसम संबंधी परामर्श सेवाओं के माध्यम से समय पर और स्थान-विशिष्ट सलाह विभिन्न माध्यमों से किसानों तक पहुंचाई गई, जिससे 460 से अधिक किसानों को लाभ मिला और जलवायु-संवेदनशील परिस्थितियों में बेहतर कृषि निर्णय लेने में सहायता मिली।

बागवानी और फसल सुधार

- सब्जियों, मसालों, फलों, नारियल तथा औषधीय पादपों के 167 जीनप्ररूपों के संग्रह के माध्यम से एक विविध जननद्रव्य आधार स्थापित किया गया।
- रोज़ेल (हिबिस्कस सबडैरिफा) के रूपात्मक लक्षण-वर्णन में तने के रंग, पत्तियों की बनावट, पादप- ऊँचाई और तने की मोटाई में गुणात्मक तथा मात्रात्मक रूप से काफी विविधता पाई गई और साथ ही, देर से फल देने की अवस्था में बेहतर शाकीय वृद्धि भी देखी गई।
- स्थानीय (इंडिजिनस)बसेला के संग्रहों के मूल्यांकन में शाखाओं की लंबाई, पत्तियों के बीच दूरी तथा कुल पत्ती जैव मात्रा में विविधता पाई गई। जोधपुर संग्रह में सबसे अधिक

शाकीय वृद्धि और पत्ती उत्पादन दर्ज किया गया।

- दस सब्जी फसलों (लोबिया, लौकी, खीरा, मिर्च, बैंगन, भिंडी, बासेला, रोज़ेल, चेरी टमाटर और पार्थेनोकार्पिक खीरा) के प्रारंभिक उत्पादन के आकलन से यह स्पष्ट हुआ कि विभिन्न फसलें और मौसम अलग-अलग प्रकार की प्रतिक्रिया देते हैं। ग्रीष्मकालीन बुवाई लोबिया, लौकी, खीरा और मिर्च के लिए अनुकूल पाई गई, जबकि रबी की प्रारंभिक बुवाई ने बैंगन और भिंडी में बेहतर उपज प्रदर्शन सुनिश्चित किया।
- अर्का मंगला (लोबिया), कानपुर स्थानीय (लौकी), संग्रह II केवीके एसए (बैंगन), अर्का अनामिका (भिंडी), वीएल-4 (टमाटर) और अर्का तानवी (मिर्च) जैसे जीनप्ररूप तुलनात्मक रूप से बेहतर प्रदर्शन करने वाले पाए गए, जिन्हें पुनरावृत्ति और बहु-स्थान में प्रगति परीक्षणों के लिए चयनित किया गया है।
- सब्जियों में ग्राफ्टिंग (कलम लगाने) पर किए गए अध्ययनों में वेज ग्राफ्टिंग विधि के तहत यह पाया गया कि प्रकंद कैरी बी2 में कलम के जीवित रहने की दर (100% तक) अधिक रही, कलम जोड़ अधिक सुदृढ़ बना तथा नवपल्लव (स्कायन) की वृद्धि भी बेहतर रही। यह विशेषकर संरक्षित कठोर परिस्थितियों में कैरी बी1 की तुलना में टमाटर और बैंगन के नवपल्लव (स्कायन) के साथ अधिक अनुकूलता दर्शाता है।
- भारत में तेजपत्ता की पहली उन्नत किस्म द्वीप तेज-1 तथा मालाबार इमली की दो उन्नत किस्में, द्वीप अग्रिम और द्वीप विशाल, को अंडमान एवं निकोबार द्वीपसमूह के केंद्र शासित प्रदेश के लिए राज्य बीज उप-समिति द्वारा जारी करने की अनुशंसा की गई।
- पाइपर पेंडुलिस्पिकम (वुडी पेपर) के जननद्रव्य (INGR25029) को एक विशिष्ट जननद्रव्य के रूप में आईसीएआर-एनबीपीजीआर, नई दिल्ली में पंजीकृत किया गया।
- दालचीनी में कम क्यूमारिन युक्त जननद्रव्य (IC653495) की पहचान की गई।
- सुपारी की सहोदर-सहयोगी (Sib mated) सुपारी बौनी संकर, किस्म समृद्धि समृद्धि ×अंडमान द्वीप हरिता और द्वीप सोना के लिए बागवानी फसलों पर एआईसीआरपी के अंतर्गत बहु-स्थानिक मूल्यांकन शुरू किया गया है।
- केले की किस्म कोरंगी में डिनैवेलिंग और गुच्छा भरण (फीडिंग) से गुच्छों के वजन में उल्लेखनीय वृद्धि पाई गई।
- सूरीनाम चेरी में रंगीन शेड नेट हाउस के अंतर्गत क्लोरोफिल और पत्तियों की एपिक्यूटिकुलर वैक्स की मात्रा में महत्वपूर्ण भिन्नताएँ देखी गईं, जबकि अंकुरण प्रतिशत पर इसका कोई प्रभाव नहीं पड़ा।
- अंडमान कोकम के छह संग्रहों में बीज वसा के विश्लेषण से पता चला कि तीन संग्रहों में स्टीयरिक अम्ल प्रमुख यौगिक था, जबकि दो में एलाइडिक अम्ल और एक में ओलिक अम्ल प्रमुख रूप से पाया गया।
- मालाबार इमली में, अध्ययन किए गए छह संग्रहों के बीज वसा में स्टीयरिक अम्ल, ओलिक अम्ल और पामिटिक अम्ल प्रमुख यौगिक के रूप में पाए गए।
- अंतर-विशिष्ट ग्राफ्टिंग के रोपण के एक वर्ष बाद, जी. किडिया/जी धनिखारीयनसिस में अधिकतम पादप- ऊँचाई और शाखाओं की संख्या दर्ज की गई, जबकि जी. गुम्मी-गुट्टा/जी. धनिखारीयनसिस में अधिकतम कॉलर मोटाई और औसत छत्र (कैनोपी) विस्तार पाया गया।
- दालचीनी की किस्म येरकौड -*1* की, अंडमान द्वीपों में सुपारी के बागानों में अंतरफसल के लिए पहचान की गई।
- नारियल की अंडमान ऑर्डिनरी टॉल किस्म में हौस्टोरियम के विकास पर नट की स्थिति के प्रभाव के अध्ययन से यह स्पष्ट हुआ कि नट को क्षैतिज (आड़ी) स्थिति में रखने पर सबसे अच्छे परिणाम प्राप्त हुए।
- सेंट्रैथेरम एंथेल्मिंटिकम में दूरी और खाद प्रबंधन के उपचारों का फूल और बीज संबंधी मापदंडों पर महत्वपूर्ण प्रभाव देखा गया।
- उष्णकटिबंधीय कृषि शिक्षा की थीम पर आधारित "द्वीप एग्रो इको वाक" नामक कृषि-इको-पर्यटन मॉडल सिप्पीघाट और गराचरमा फार्मों में स्थापित किए गए।
- टीएमटी (TMT) बार का उपयोग करके कम लागत वाले शेड नेट हाउस संरचनाओं का डिजाइन तैयार किया गया और उनका मूल्यांकन फिश मिंट, सूरीनाम चेरी तथा वेस्ट इंडियन चेरी पर अध्ययन के लिए किया गया।
- द्वीपीय परिस्थितियों में वुडी पेपर की संरक्षित खेती शेड नेट हाउस के अंतर्गत एक आशाजनक प्रौद्योगिकी के रूप में पहचानी गई।
- मूल्यांकन की गई 23 तिल की किस्मों में से तिलारानी, जेसीएस-2454 (जगतियल तिल-2), एसवीपीआर-1, टीकेजी-22, जीटी-11, आरटी-372, तिलातारा, सीयूएमएस-17, उन्नत रामा और टीकेजी-308 ने अंडमान की परिस्थितियों में बेहतर प्रदर्शन किया।
- कुल 15 किस्में— द्वीप धान 6, द्वीप धान 7, द्वीप धान 8, द्वीप धान 9, द्वीप धान 10, द्वीप धान 11, द्वीप मुंग 1, द्वीप मुंग 2, द्वीप मुंग 3, द्वीप मुंग 4, और द्वीप मुंग 5, द्वीप उर्द 1, द्वीप उर्द 2, द्वीप बैंगन 1 और द्वीप बैंगन 2—को अंडमान

एवं निकोबार द्वीप समूह के लिए राज्य उप-समिति के माध्यम से जारी किया गया।

- एमजी8-1-48-एम-8, एमजी8-2-9-ई-9 और द्वीप धान 11 ने जलमग्नता की सहनशीलता में उत्कृष्ट प्रदर्शन करते हुए 50% से अधिक जीविता की क्षमता दिखाई। इन्होंने स्वर्णा सब 1 से बेहतर प्रदर्शन किया और निम्नभूमि पारिस्थितिक तंत्रों के लिए बाढ़-सहिष्णु धान की किस्मों के प्रजनन हेतु संभावित दानकर्ता (डोनर) के रूप में उभरे।
- एमजी4-2-81-ई-19 को एक अधिक उपज देने वाले MAGIC चावल वंशक्रम के रूप में पहचाना गया, जिसमें बीपीएच और बीएलबी के प्रति प्रतिरोधिता तथा लवणता (ईसी 9.0 dS m^{-1}) और जिंक की कमी के प्रति सहनशीलता पाई गई।
- द्वि-उद्देश्यीय उपयोग के लिए मूल्यांकित नौ स्नैप मेलन अभिग्रहणों (एक्सेशन) में से PP-20, IC 0647725, PP-13 और PP-14 को अंडमान की परिस्थितियों के लिए उपयुक्त द्वि-उद्देश्यीय स्नैप मेलन किस्में विकसित करने हेतु प्रजनन कार्यक्रमों में आशाजनक पाया गया।
- कुल 28 कुंदरू के अभिग्रहणों (एक्सेशनों) का संरक्षण फील्ड जीन बैंक में किया गया, जिनमें से IC656708 सबसे उत्कृष्ट एक्सेशन पाया गया। इसमें फल की लंबाई (95.09 मिमी), फल का वजन (26.49 ग्राम) और अंतरगाठ लंबाई (11.30 सेमी) सबसे अधिक दर्ज की गई।
- रतालू (*Dioscorea alata*, IC648571) का एक उच्च कंद उत्पादन वाला एक्सेशन द्वीपीय परिस्थितियों में पहचाना गया, जिसमें प्रति पौधा औसतन 2.24 किलोग्राम कंद उपज, अच्छी पकाने की गुणवत्ता और आकर्षक बैंगनी गूदा पाया गया।

पशु विज्ञान

- नवीन शूकर वीर्य विस्तारक (एक्सटेंडर) (भारतीय पेटेंट संख्या 355114) से पतला किए गए वीर्य नमूनों में, अन्य दो विस्तारकों (IMV PRIMX cell™ और संशोधित बेट्सविल थॉइंग सॉल्यूशन, BTS-M) की तुलना में शुक्राणुओं की गतिशीलता, जीवितता तथा एक्रोसोमल अखंडता सबसे बेहतर पाई गई।
- वासा (Vasa) अनुक्रम विश्लेषण में एक्सॉन स्किपिंग (आंशिक या पूर्ण) के कारण 2190, 2112, 2040, 2010, 1953, 1983 और 1977 बेस पेयर (bp) लंबाई के सात विभिन्न स्प्लाइस प्रभेद पाए गए। इसी प्रकार, Vasa अनुक्रम के 3'RACE PCR विश्लेषण में प्रतिलेखन समाप्ति स्थल के अलग-अलग स्थानों के कारण 41, 211, 222, 233, 239 और 246 bp लंबाई के छह विभिन्न स्प्लाइस प्रभेद प्राप्त हुए।
- पशुधन में संतानों के लिंग को नियंत्रित करने के लिए एक रसायन आधारित शुक्राणु छंटाई तकनीक का मूल्यांकन किया गया। इसमें खरगोश और शूकर दोनों मॉडलों में Y-वाहक शुक्राणुओं की सफल वृद्धि प्रदर्शित की गई। लिंग-चयनित वीर्य का उपयोग करके कृत्रिम गर्भाधान करने पर संतानों में नर की संख्या अधिक पाई गई—खरगोशों में 66% नर शावक और सूअरों में 69% नर घेंटे प्राप्त हुए। यह परिणाम एक व्यवहार्य, गैर-प्रवाह-साइटोमेट्री पर आधारित दृष्टिकोण को स्थापित करता है, जिसकी संकर प्रजातियों में उपयोगिता है और जिसे आगे और अनुकूलतम बनाया जा सकता है।
- शुक्राणु लिंग छंटाई की दक्षता का आकलन करने के लिए एक जांच-आधारित पाले सत्यापन प्रणाली विकसित की गई। प्रजाति-विशिष्ट बायोटिन-लेबल्ड डीएनए जांचों को एगारोज़ जेल इलेक्ट्रोफोरेसिस और डॉट ब्लॉट परीक्षणों के माध्यम से सफलतापूर्वक सत्यापित किया गया। साथ ही, क्रोमोजेनिक स्व स्थाने संकरण (CISH) प्रोटोकॉल को मानकीकृत किया गया, जिससे Y-क्रोमोसोम युक्त शुक्राणुओं का सीधे अवलोकन संभव हुआ। यह परीक्षण प्रयोगशाला में लिंग-चयनित वीर्य के सत्यापन के लिए एक किफायती और विस्तार योग्य विकल्प प्रदान करता है तथा बड़ी पशुधन प्रजातियों में इसके उपयोग की भी अच्छी संभावनाएँ दर्शाता है।
- नवजात खरगोशों में लिंग के सटीक निर्धारण के लिए एक त्वरित, गैर-आक्रामक डुप्लेक्स PCR परीक्षण विकसित किया गया। इसमें चिपकने वाली टेप विधि से एकत्रित एपिथीलियल कोशिकाओं का उपयोग किया गया, जिससे डीएनए निष्कर्षण की आवश्यकता समाप्त हो गई। इस परीक्षण ने एक दिन के नवजात खरगोशों में 100 गुना अधिक उच्च संवेदनशीलता और 100% सटीकता प्रदर्शित की। यह प्रारंभिक अवस्था में लिंग पहचान और शुक्राणु लिंग-छंटाई के परिणामों के सत्यापन के लिए एक व्यावहारिक और प्रभावी उपकरण प्रदान करता है।
- बकरियों की प्रजनन क्षमता में सुधार के लिए सीरम उर्वरता (फीकुंडिटी) जैवचिह्नकों का मूल्यांकन एलिसा (ELISA) और इंटरैक्शन नेटवर्क विश्लेषण के माध्यम से किया गया। कम उर्वरता वाली अंडमानी बकरियों में IGF1R और ERBB2 का स्तर उल्लेखनीय रूप से अधिक पाया गया। नेटवर्क विश्लेषण से IGF1R–ERBB2 सिग्नलिंग अक्ष को

एक केंद्रीय भूमिका में पाया गया, साथ ही GDF9, SETDB2 और MAP3K19 जैसे नए संबंध भी सामने आए। इन सभी जैवचिह्नकों ने उर्वरता-आधारित चयन के लिए अपनी क्षमता प्रदर्शित की।

- सीरम प्रोटीन अभिव्यक्ति को जीनप्ररूप डेटा के साथ एकीकृत करने से यह संकेत मिला कि IGF1R की अधिक अभिव्यक्ति उत्परिवर्ती जीनप्ररूप से जुड़ी है और इससे उर्वरता में कमी आती है। यह निष्कर्ष प्रजनन नियमन की कार्यप्रणाली को समझने में महत्वपूर्ण जानकारी प्रदान करता है तथा बकरियों में सटीक प्रजनन और चिह्नक-समर्थित प्रजनन प्रबंधन की बुनियाद को मजबूत करता है।
- ताप दबाव की परिस्थितियों (तापमान 36.96°C, आरएच% 74.40% और THI 91.3) में प्रतिदिन 5 घंटे तक बैसिलस सबटिलिस, सैक्रोमाइसेस सेरेविसिया और लैक्टोबैसिलस रम्नोसस पर आधारित प्रोबायोटिक मिश्रण को खिलाने पर, यौन परिपक्वता (16 सप्ताह) की आयु में शरीर के वजन में लगभग 23% की उल्लेखनीय वृद्धि दर्ज की गई।
- अंडमानी और निकोबारी शूकरों के आहार में कच्चे प्रोटीन की मात्रा को मानक स्तर से 15% तक कम करने पर, वृद्धि प्रदर्शन पर कोई प्रतिकूल प्रभाव डाले बिना चारे की लागत कम की जा सकती है।
- सेसबानिया और ल्यूकेना ल्यूकोसेफला, जिनमें शुष्क पदार्थ (24.20) और कच्चे प्रोटीन (24.93) की अच्छी मात्रा पाई गई, बकरियों के आहार में कुल शुष्क पदार्थ सेवन का 50% तक शामिल करने के लिए उपयुक्त पाए गए।
- पॉलीहर्बल एकारिसाइड के उपचार का प्रभाव बकरियों और मवेशियों में क्रमशः शरीर के भार और दूध उत्पादन के संदर्भ में आंका गया। पॉली हर्बल एकारिसाइड से उपचार के बाद, उपचारित समूह की बकरियों में बिना उपचार वाले समूह की तुलना में शरीर के भार में वृद्धि देखी गई। हालांकि, अन उपचारित समूह की बकरियों की तुलना में उपचारित समूह की बकरियों के दूध उत्पादन में कोई महत्वपूर्ण अंतर नहीं पाया गया।
- भ्रूण अवस्था में 38.5°C तापीय उत्तेजना (थर्मल स्टिमुलेशन) के संपर्क में आए देशी कुक्कुट पक्षियों में वृद्धि अवधि के दौरान और यौन परिपक्वता की आयु में शरीर के भार में महत्वपूर्ण अंतर पाया गया।
- FMDV के लिए 3rAB3 एंटीबॉडी की उपस्थिति की जांच हेतु 948 गोवंशीय सीरम नमूनों पर DIVA-ELISA (संक्रमित और टीकाकृत में अंतर करने वाली) परीक्षण के माध्यम से सीरो-सर्विलांस किया गया। इसमें 45 नमूने DIVA पॉजिटिव (4.74%) पाए गए। NADCP के छठे चरण के सीरो-मॉनिटरिंग के लिए, टीकाकरण से पहले और बाद के कुल 440 गोवंशीय सीरम नमूनों का सुरक्षात्मक एंटीबॉडी टाइटर के लिए विश्लेषण किया गया। टीकाकरण से पहले के नमूनों में सुरक्षात्मक एंटीबॉडी टाइटर (log10 टाइटर ≥ 1.65) क्रमशः सीरोटाइप O, A और एशिया 1 के लिए 23.63%, 26.13% और 27.72% पाया गया। टीकाकरण के बाद के नमूनों में यही सुरक्षात्मक एंटीबॉडी टाइटर (log10 टाइटर ≥ 1.65) सीरोटाइप O, A और एशिया 1 के लिए क्रमशः 65.60%, 65.14% और 64.69% दर्ज किया गया।
- ब्रुसेला अबोर्टस एंटीबॉडी की उपस्थिति के लिए कुल 300 गोवंशीय सीरम नमूनों की जाँच रोज़ बंगाल प्लेट टेस्ट (RBPT) द्वारा की गई, जिसमें कोई भी नमूना पॉजिटिव नहीं पाया गया। इसी प्रकार, 270 बकरी सीरम नमूनों की जाँच पेस्टे डेस पेटिट्स जुगाली करनेवाला वायरस (PPRV) एंटीबॉडी के लिए की गई, इसमें भी कोई नमूना पॉजिटिव नहीं मिला। रिपोर्टिंग अवधि के दौरान, बकरियों में केसियस लिम्फैडेनाइटिस (caseous lymphadenitis) के दो प्रकोप दर्ज किए गए, जिनकी आक्रमण दर 12.03% रही। इसके अलावा, बकरियों में संक्रामक एक्थाइमा (contagious ecthyma/ओर्फ) के तीन प्रकोप दर्ज किए गए, जिनकी आक्रमण दर 8.91% रही।
- दक्षिण अंडमान जिले के विभिन्न स्थानों से पशुधन और कुक्कुट से कुल 168 दूध के नमूने, रेक्टल और क्लोएकल स्वैब—सूक्ष्मजीवों के पृथक्करण और पहचान के लिए एकत्र किए गए। इनमें ई. कॉली और स्टैफाइलोकोकस नामक दो प्रकार के जीवाणुओ की पहचान की गई। ये जीवाणु प्रथम तथा उच्च पीढ़ी के एंटीबायोटिक्स दोनों के प्रति प्रतिरोधी पाए गए।
- द्वीपों की स्थानीय बकरी नस्लों के लिए विकसित दूध-विकल्प (मिल्क रिप्लेसर) ने शिशुओं की वृद्धि, स्वास्थ्य और जीविता की दर में उल्लेखनीय सुधार किया, विशेषकर बहु-जन्म की स्थितियों में पोषण संबंधी सीमाओं को दूर करने में यह प्रभावी सिद्ध हुआ।

मात्स्यिकी विज्ञान

- वर्ष 1992 से 2024 तक के उपग्रह आँकड़ों के आधार पर तटीय रेखा की गतिशीलता का एकीकृत मानचित्रण किया गया। साथ ही नागरिक विज्ञान के पारिस्थितिक आँकड़ों का उपयोग कर कार निकोबार की द्वीप प्रबंधन योजना की तैयारी

के लिए महत्वपूर्ण इनपुट प्रदान किए गए।

- दक्षिण अंडमान के सुनामी-प्रभावित क्षेत्रों में बहु-मौसमी मृदा और जल गुणवत्ता का आकलन किया गया, जिसमें (pH, विद्युत चालक EC, 9.5 dS m^{-1} तक, पोषक तत्व, लवणता, घुलित ऑक्सीजन (DO) और अमोनिया) जैसे मानकों का अध्ययन शामिल था। AHP-आधारित GIS मॉडलिंग के माध्यम से उच्च और मध्यम स्तर के जलीय कृषि उपयुक्तता वाले क्षेत्रों की पहचान की गई, जिनसे नीतिगत निर्णयों और पट्टा आवंटन में सहायता मिली।
- 72 राफ्ट्स का उपयोग करते हुए समुद्री शैवाल की खेती के परीक्षणों में ग्रेसीलेरिया एडुलिस और एकैंथोफोरा स्पाइसीफेरा के लिए ट्यूब-नेट प्रणाली का बेहतर प्रदर्शन देखा गया, जिसमें 30 और 60 दिनों पर लगातार जैवमात्रा (बायोमास) में वृद्धि दर्ज की गई। साथ ही, एक द्वि-पुनर्प्राप्ति प्रक्रिया के माध्यम से अगर और हाइड्रोफिलिक जैवमात्रा का एक साथ निष्कर्षण संभव हुआ, जिससे मूल्य संवर्धन में वृद्धि हुई।
- 1–12% की सांद्रता पर परीक्षण किए गए हर्बल परजीवी-रोधी संरूपणों ने संक्रमित बेट्टा स्प्लेंडेस के शिशुओं (फ्राई) की जीवित रहने की दर में सुधार दिखाया। इनमें 5% सुपारी–पुदीना तेल संरूपण ने पिसिनोडिनियम प्रजाति के विरुद्ध 80% से अधिक जीवित रहने की दर प्राप्त की, जबकि नियंत्रण समूह में यह 30% से कम रही।
- 59 मीठे पानी के मत्स्य फार्मों में आधारभूत सर्विलांस के दौरान जीवाणविक, परजीवी, कवक तथा जल-गुणवत्ता से संबंधित कुल 21 रोगों के मामलों का दस्तावेजीकरण किया गया।
- 5000–7000 स्पॉन प्रति घन मीटर घनत्व पर बायोफ्लॉक नर्सरी परीक्षणों में मोइना माइक्रूरा के समृद्धिकरण के साथ बेहतर प्रदर्शन देखा गया। सर्वोत्तम उपचार में 91.3% जीवित रहने की दर, न्यूनतम AFCR (4.37 ± 0.12) तथा लेबियोरोहिता के शिशु-समूह में मांसपेशी प्रोटीन (53.8%) में वृद्धि दर्ज की गई।
- आहार में ग्रेसिलेरिया एडुलिस, पैडिना टेट्रास्ट्रोमैटिका और हैलिमेडा ओपंटिया को 3 ग्राम प्रति किलोग्राम के स्तर पर शामिल करने से लेबियो रोहिता में वृद्धि, रोग प्रतिरोधक क्षमता तथा संक्रमण के बाद जीवित रहने की दर में उल्लेखनीय सुधार देखा गया।
- एकीकृत जैविक और सामाजिक-आर्थिक अध्ययनों में मिनिकॉय में टिकाऊ पोल-एंड-लाइन टूना मत्स्य पालन का दस्तावेजीकरण किया गया, जिसमें स्किपजैक टूना का प्रभुत्व पाया गया। फिश एग्रीगेटिंग डिवाइस (FADs) की तैनाती से पकड़ (कैच) दर में वृद्धि हुई, जबकि बाजार विश्लेषण से पारंपरिक स्मोक्ड टूना उत्पादों के माध्यम से मूल्य संवर्धन की संभावनाएँ नजर आईं।
- वेब-जीआईएस आधारित निर्णय सहयोग प्रणाली के माध्यम से 27 द्वीपों का मानचित्रण किया गया, जिसमें 11 आबाद द्वीपों के लिए विस्तृत जनसांख्यिकीय और अवसंरचनात्मक जानकारी शामिल की गई। मत्स्य संसाधनों और कृषि-जलवायु क्षेत्रों से संबंधित एकीकृत परतें (लेयर्स) स्थानिक आयोजना और नीतिगत निर्णयों में सहायक सिद्ध हो रही हैं।
- मृदा-नमी सेंसर और स्वचालित एरेटर का उपयोग करते हुए स्मार्ट फार्मिंग युक्तियों से निर्धारित सीमा के आधार पर सिंचाई और घुलित ऑक्सीजन (DO) का नियंत्रण (<5 ppm पर सक्रिय) संभव हुआ। सूचना-प्रौद्योगिकी पर आधारित वास्तविक समय में निगरानी से जल उपयोग दक्षता और जलीय प्रणालियों के प्रबंधन में सुधार हुआ।
- कार निकोबार में 32 जनजातीय मछुआरों द्वारा GPS तकनीक अपनाने से औसत मछली पकड़ने की दूरी 4.7 किमी से बढ़कर 7.9 किमी हो गई तथा मासिक मछली पकड़ने की यात्राएँ 11 से बढ़कर 18 हो गईं। इसके परिणामस्वरूप उनकी मासिक आय लगभग दोगुनी होकर ₹12,208 से ₹28,826 हो गई और शुद्ध लाभ ₹8,270 से बढ़कर ₹24,514 हो गया, जिसमें लाभ-लागत अनुपात 2.6 दर्ज किया गया। साथ ही, 88% लाभार्थियों ने सुरक्षा और आत्मविश्वास में वृद्धि की भी पुष्टि की, जो मत्स्यन दक्षता और आजीविका सुरक्षा में स्पष्ट बढ़ोतरी को दर्शाता है।

2.1 EXECUTIVE SUMMARY

Natural Resource Management

- Phytochemical profiling using GC–MS revealed rich and diverse bioactive compounds in medicinal plants and trees including *Morinda citrifolia*, *Macaranga nicobarica*, *Pandanus lerum* and *Pterocarpus dalbergioides*, confirming their therapeutic potential.
- Methanol extracts of *Morinda citrifolia* pulp and leaf exhibited high phenolic, flavonoid and antioxidant activity, indicating strong antioxidant and antimicrobial properties relevant for nutraceutical applications.
- *Macaranga nicobarica* and *Pandanus lerum* showed significant phenolic and antioxidant activities, with specific plant parts exhibiting superior free radical scavenging potential.
- Genetic diversity analysis of four *Pandanus* species using SSR markers revealed clear genetic differentiation, with marker PFSSR-5 showing high polymorphism (PIC 0.77), aiding conservation and breeding strategies.
- Panchamrit-mediated silver nanoparticle synthesis was statistically optimized using response surface methodology, achieving maximum stability and UV absorbance at optimized temperature, pH, extract concentration and incubation time.
- The optimized nanoparticle synthesis model demonstrated high reliability (R^2 = 0.922), supporting its application in antimicrobial and nanotechnology research.
- Nutrient analysis of natural farming inputs confirmed the presence of essential macronutrients (N, P, K) in Beejamrit, Jeevamrit and Ghanjeevamrit, validating their role in sustainable soil fertility management
- Antibacterial screening of *Pterocarpus dalbergioides* revealed significant inhibition against *Bacillus subtilis*, *Escherichia coli* and *Staphylococcus aureus*, with resin and stem extracts showing the highest activity.
- The coconut-based Integrated Farming System expanded to 2 ha enhanced resource recycling, crop–livestock integration and diversification, resulting in improved system resilience and farm income.
- The integrated farming model recorded a net return of ₹3.45 lakh, with major contributions from coconut, vermicompost, bioconsortia, vegetables, poultry and goat components.
- Rice transplanting window studies identified 1st –15thJune as optimal for maximizing yield, with *Oryza sativa* variety CARI Dhan 6 performing best under island agro-climatic conditions.
- large-scale monitoring of pesticide residues in fruits and vegetables strengthened food safety surveillance, with inclusion of *Piper nigrum* expanding analytical coverage.
- Integrated Agrometeorological Advisory Services provided timely, location-specific advisories through multi-platform dissemination, benefiting over 460 farmers and enhancing climate-resilient farm decision-making.

Horticulture and Crop Improvement

- A diverse germplasm base was established through the acquisition of 167 genotypes of vegetables, spices, fruits, coconut and medicinal plants .
- Morphological characterization of Roselle (*Hibiscus sabdariffa*) revealed substantial qualitative and quantitative variability in stem colour, leaf morphology, plant height, and stem girth with superior vegetative vigour at late bearing.
- Evaluation of indigenous Basella collections possessed variation in branch length, inter-leaf distance, and total leaf biomass. Jodhpur collection recorded the highest vegetative growth and leaf yield.
- Preliminary yield assessment of ten vegetable crops (cowpea, bottle gourd, cucumber, chilli, brinjal, okra, basella, roselle, cherry tomato and parthenocarpic cucumber) revealed distinct crop- and season-specific responses. Summer sowing was favourable for cowpea, bottle gourd, cucumber, and chilli, whereas early rabi planting optimized yield performance in brinjal and okra.
- Genotypes Arka Mangala (cowpea), Kanpur Local (bottle gourd), Collection II KVK SA (brinjal), Arka Anamika (okra), VL-4 (tomato), and Arka Tanvi (chilli) comparatively performed better and to be identified for advancement in replicated and multi-location

trials.

- Vegetable grafting studies involving wedge grafting indicated that rootstock CARI B2 recorded higher graft survival (up to 100%), stronger graft union, and enhanced scion growth compared to CARI B1, showing its superior compatibility with tomato and brinjal scions under protected hardening conditions.
- Dweep Tej-1, the first improved variety of tejpat in India, and two improved varieties of Malabar tamarind, *viz*. Dweep Agrim and Dweep Vishal, were recommended for release by the State Seed Sub-committee for the Union Territory of Andaman and Nicobar Islands.
- *Piper pendulispicum* (woody pepper) germplasm (INGR25029) was registered with ICAR-NBPGR, New Delhi as a unique germplasm.
- Low coumarin germplasm (IC653495) was identified in cinnamon.
- Multi location evaluation has been initiated under AICRP on Plantation Crops for sib-mated arecanut variety Samrudhi Samrudhi × Andaman Arecanut Dwarf cross, Dweep Haritha and Dweep Sona.
- Denavelling and bunch feeding were found to improve the bunch weight significantly in banana variety Korangi.
- Chlorophylls and leaf epicuticular wax content exhibited significant variations under coloured shade net houses in Surinam cherry whilegermination percentage was not influenced.
- Seed fat profiling in six collections of Andaman Kokum suggested Stearic acid as the dominant compound in three collections, while Elaidic acid in two and Oleic acid in one.
- In Malabar tamarind, Stearic acid, Oleic acid and Palmitic acid were the dominant compounds in the seed fat of six collections studied.
- After one year of planting of inter-specific grafts, maximum plant height & number of branches were recorded in *G. kydia/G. dhanikhariensis*, while maximum collar thickness & mean canopy spread were recorded in *G. gummi-gutta/G. dhanikhariensis*.
- Cinnamon variety Yercaud-1 was identified for intercropping in the arecanut plantations of Andaman Islands.
- Study on effect of nut position on haustorium development in Andaman Ordinary Tall variety of coconut revealed that the horizontal placement of nuts was the most effective.
- In *Centratherum anthelminticum*, spacing and manuring treatments influenced flower and seed parameters significantly.
- Agro-ecotourism models named DweepAgro-Eco Walk were established at Sippighat and Garacharma farms with the theme of Tropical Agriculture Education.
- Low-cost shade net house structures were designed using TMT bars and evaluated for studies on fish mint, Surinam cherry and West Indian cherry.
- Protected cultivation of woody pepper under shade net house was identified as the promising technology under island conditions.
- Out of Twenty three sesame varieties evaluated,Thilarani, JCS-2454 (Jagtial Til-2), SVPR-1, TKG-22, GT-11, RT-372, Thilathara, CUMS-17, Unnat Rama, and TKG-308 exhibited better performance under Andaman conditions.
- A total of 15 varieties-Dweep Dhan 6, Dweep Dhan 7, Dweep Dhan 8, Dweep Dhan 9, Dweep Dhan 10, and Dweep Dhan 11, Dweep Mung 1, Dweep Mung 2, Dweep Mung 3, Dweep Mung 4, and Dweep Mung 5, Dweep Urd 1 and Dweep Urd 2, Dweep Brinjal 1 and Dweep Brinjal 2 were released through the State Sub-Committee for the Andaman and Nicobar Islands.
- MG8-1-48-M-8, MG8-2-9-E-9, and Dweep Dhan 11 showed superior submergence tolerance with >50% survivability, outperforming Swarna Sub 1 and emerging as promising donors for breeding flood-tolerant rice for lowland ecosystems.
- MG4-2-81-E-19 was identified as a high-yielding MAGIC rice line with resistance to BPH and BLB and tolerance to salinity (EC 9.0 dS m^{-1}) and zinc deficiency.
- Out of nine snap melon accession evaluated for dual purpose, PP-20, IC 0647725, PP-13, and PP-14 were identified as promising in breeding programmes to develop suitable dual purpose snap melon varieties for Andaman conditions.
- A total of 28 ivy gourd accessions were conserved in the field gene bank, out of which

IC656708 was the most superior accession, recording the highest fruit length (95.09 mm), fruit weight (26.49 g) and internodal length (11.30 cm).

- A high tuber yielding accession of greater yam (*Dioscorea alata* IC648571) was identified under island conditions, recording a superior mean tuber yield of 2.24 kg per plant with good cooking quality and attractive purple flesh.

Animal Science

- Novel Boar Semen Extender (Indian patent no. 355114)-diluted semen samples showed the best sperm motility, spermatozoa viability, and acrosomal integrity compared to the other two extenders (IMV PRIMXcell™, Modified Betsville Thawing solution (BTS-M).
- The Vasa sequence analysis showed seven different splice variants of 2190, 2112, 2040, 2010, 1953, 1983, and 1977 bp length due to exon skipping, either partial or complete. Similarly, the 3'RACE PCR of Vasa sequence analysis showed six different splice variants of 41, 211, 222, 233, 239, and 246 bp length due to different locations of the transcription termination site.
- A chemical-based sperm sorting strategy was evaluated to enable controlled manipulation of offspring sex in livestock, with successful enrichment of Y-bearing spermatozoa demonstrated in both rabbit and pig models. Artificial insemination using sex-sorted semen resulted in a male-biased progeny with 66% male bunnies in rabbits and 69% male piglets in pigs, establishing a feasible, non–flow-cytometry-based approach with cross-species applicability and scope for further optimization.
- A probe-based *in-vitro* validation system was developed to assess the efficiency of sperm sex sorting. Species-specific biotinylated DNA probes were successfully validated using agarose gel electrophoresis and dot blot assays, and a chromogenic *in situ* hybridization (CISH) protocol was standardized, enabling direct visualization of Y-chromosome–bearing spermatozoa. The assay offers a cost-effective, scalable alternative for laboratory validation of sex-sorted semen and shows potential for adaptation to large livestock species.
- A rapid, non-invasive duplex PCR assay was developed for accurate sex determination in newborn rabbits using epithelial cells collected by an adhesive tape method, eliminating the need for DNA extraction. The assay demonstrated 100-fold ultra-high sensitivity and 100% accuracy in day-old rabbits, providing a practical tool for early sex identification and validation of sperm sexing outcomes.
- To improve reproductive efficiency in goats, serum fecundity biomarkers were evaluated through ELISA and interaction network analysis. IGF1R and ERBB2 were significantly elevated in low-fecundity Andamani goats, and network analysis revealed a central IGF1R–ERBB2 signalling axis along with novel associations involving GDF9, SETDB2, and MAP3K19, highlighting their potential as biomarkers for fecundity-based selection.
- Integration of serum protein expression with genotype data indicated that higher IGF1R expression is associated with mutant genotypes and reduced fecundity, providing mechanistic insights into fertility regulation and strengthening the foundation for precision breeding and marker-assisted reproductive management in goats.
- Feeding of Probiotic formulation using *Bacillus subtilis*, *Saccharomyces cerevisiae* and *Lactobacillus rhamnosusr* under heat stress conditions of T 36.96°C and RH% 74.40% and THI of 91.3 for 5 h per day producted significantly higher (23%) body weight at the age of sexual maturity (16 weeks).
- Decreasing the crude protein content in both Andamani and Nicobari pigs by 15% from standard could reduce the feed cost without any adverse effect on growth performance.
- Sesbania and *Leucaena leucocephala* having dry matter (24.20) and Crude protein content (24.93)were found suitable for inclusionin goat feeding up to 50% of total dry matter intake.
- Effect of treatment by polyherbal acaricide in terms of body weight and milk yield was evaluated in goats and cattle, respectively. After treatment with polyherbal acaricide there was increase in body weight in treated group compared to untreated goats. However, no significant increase in milk yield of goat

was observed in treated group compared to untreated one.

- There was significant difference in body weight gain during growing period and age at sexual maturity in indigenous poultry birdsthat had been exposed to embryonic thermal stimulation to 38.5 ˚C.
- Sero surveillance with 948 cattle sera samples for the presence of 3rAB3 antibodies for FMDV by DIVA-ELISA (differentiating infected from vaccinated) test, reported that 45 samples were found DIVA positive (4.74%). For sero-monitoring of NADCP-6th round, a total of 440 pre-vaccination and post-vaccination sera samples from cattle were analyzed for protective antibody titre. Protective antibody titre (log10 titre ≥ 1.65) for pre vaccinated samples were 23.63%, 26.13 % and 27.72 % for serotypes O, A, and Asia 1, respectively. For post-vaccination samples the protective antibody titre (log10 titre ≥ 1.65) was 65.60 %, 65.14 %, and 64.69 % for serotypes O, A, and Asia 1, respectively.
- A total of 300 cattle sera samples were screened for the presence of *Brucella abortus* antibodies by Rose Bengal Plate Test. None of the sample was found positive. Out of 270 goat sera samples screened for the presence of *peste des petits ruminants virus* antibodies (PPRV), none of the sample was found positive. During the reporting period, two outbreaks of caseous lymphadenitis in goat was reported with attack rate of 12.03% and three outbreak of contagious ecthyma (orf) in goats were reported with attack rate of 8.91%.
- A total of 168 samples of milk, rectal and cloacal swabs were collected from livestock and poultry from different places of South Andaman District for isolation and identification of microorganisms. Two species of bacteria viz. *E. coli* and *Staphylococcus* were identified. The organisms showed resistance both to first and higher generations of antibiotics.
- A milk replacer developed for native goat breeds of the islands significantly improved kid growth, health and survival, addressing nutritional limitations under multiple birth conditions.

Fisheries Science

- Integrated shoreline dynamics mapping (1992-2024 satellite data), and ecological data using citizen science data supported towards inputs for preparation of Island management plan of Car Nicobar.
- Conducted multi-season soil and water quality assessments (pH, EC up to 9.5 dS m^{-1}, nutrients, salinity, DO, ammonia) across tsunami-inundated sites of South Andaman. AHP-based GIS modelling delineated high and moderate aquaculture suitability zones, supporting policy and leasing decisions.
- Seaweed cultivation trials using 72 rafts demonstrated superior performance of tube-net systems for *Gracilaria edulis* and *Acanthopora spicifera* with consistent biomass gains at 30 and 60 days. A dual-recovery process enabled simultaneous extraction of agar and hydrophilic biomass, enhancing value addition.
- Herbal antiparasitic formulations tested at 1–12% concentrations showed improved survival in infected *Betta splendens* fry. The 5% arecanut–peppermint oil formulation achieved >80% survival against *Piscinoodinium sp.*, compared to <30% in controls.
- Baseline surveillance from 59 freshwater farms documented 21 disease cases involving bacterial, parasitic, fungal, and water-quality related conditions.
- Biofloc nursery trials at 5000–7000 spawn m^{-3} showed superior performance with *Moina micrura* enrichment. The best treatment recorded 91.3% survival, lowest AFCR (4.37 ± 0.12), and enhanced muscle protein (53.8%) in *Labeo rohita* fry.
- Dietary supplementation of *Gracilaria edulis*, *Padina tetrastromatica*, and *Halimeda opuntia*at 3 g kg^{-1} feed significantly improved growth, immunity, and post-challenge survival in *Labeo rohita*.
- Integrated biological and socio-economic studies documented sustainable pole-and-line tuna fisheries in Minicoy, dominated by Skipjack tuna. Deployment of FADs enhanced catch rates, while market assessments highlighted value addition through traditional smoked tuna products.

- A Web-GIS decision-support system mapped 27 islands, with detailed demographic and infrastructure data for 11 inhabited islands. Integrated layers on fisheries resources and agro-climatic zones support spatial planning and policy decisions.
- Smart farming interventions using soil-moisture sensors and automated aerators enabled threshold-based irrigation and DO control (<5 ppm trigger). IoT-enabled real-time monitoring improved water-use efficiency and aquatic system management.
- The adoption of GPS technology by 32 tribal fishermen in Car Nicobar increased average fishing distance from 4.7 km to 7.9 km, raising their monthly fishing trips from 11 to 18 nos. Consequently, monthly income has doubled (₹12,208 to ₹28,826) and their net profit increased (₹8,270 to ₹24,514), with a benefit-cost ratio (2.6)alongside improved safety and confidence reported by 88% of beneficiaries, demonstrating a clear enhancement in fishing efficiency and livelihood security.

3. INTRODUCTION

ICAR - Central Island Agricultural Research Institute (CIARI)

ICAR - Central Island Agricultural Research Institute (CIARI) formerly Central Agricultural Research Institute (CARI) was established on 23rd June 1978 by merging different Regional Research Stations of the ICAR Institutes at Sri Vijaya Puram *viz*., Central Marine Fisheries Research Institute, Indian Veterinary Research Institute, Indian Agricultural Research Institute, and Central Plantation Crops Research Institute. During October 1989, the Regional station of CPCRI located at Minicoy, Lakshadweep Islands was merged to this Institute to serve as a Regional Station of CIARI. This Lakshadweep centre was later transferred to CPCRI in late 1994 and then again brought back under CIARI from April 2017 as Regional Station.ICAR- CIARI is conducting research work for the farming community of these Islands. The Institute has four research divisions viz., Natural Resource Management, Horticulture and Crop Improvement, Animal Science and Fisheries Science.

The main research-cum-residential complex located at Garacharma, 9 Km away from Sri Vijaya Puram houses the Director's Office, Administrative Block and a Central Laboratory Building besides research farm. The Institute has four research farms. (i) Garacharma farm of 62 ha. area, where works on field crops, horticulture, animal sciences and fresh water fisheries are carried out. (ii) Sippighat farm having an area of 32 ha where research work on horticulture is carried out. (iii) Bloomsdale Farm which has flat lands of 3.5 haand this is used for research works of natural resource management and field crops divisions. (iv) Marine Hill Research Laboratory has a sea front hatchery facility. The Institute has three KVKs, one at Sri Vijaya Puram established in 1993, another at Nicobar established in 2010 and the latest one at Nimbudera established in 2012. The Institute also has various Central facilities for smooth functioning of the Institute *viz*. (i) Central Instrumentation Facility (ii) Priority Setting, Monitoring & Evaluation Cell (iii) Hindi Cell, (iv) AKMU (v) Library (vi) ITMU (vii) PG Cell.

3.1 MISSION

Providing decent livelihood to farm youth from agriculture in a fragile island ecosystem on sustainable basis.

3.2 VISION

Sustainable development in agri-horticulture, livestock and fisheries sector in the changing climatic scenario to ensure decent livelihood in the fragile island ecosystem.

3.3 MANDATE

- Basic and adoptive research on conservation of diversity and sustainable production of crops, animals, poultry and fisheries in Island ecosystem.
- Transfer of technology and capacity building of stakeholders in island ecosystem.
- Nodal centre for biosecurity and containment facility on plants and animals for island and mainland ecosystem.

3.4 THRUST AREAS

Broad research programmes are as under:

- Conservation and utilization of Island biodiversity.
- Enhancing the productivity of agriculture, livestock, and fisheries sector.
- Management of biotic and abiotic stress.
- Post-harvest technology and value addition.
- Water and soil resource development and utilization.

3.5 ORGANISATIONAL SET UP

Administration of the institute rests with the Director, who receives support from both research divisions and administration. The Research Advisory Committee (RAC), Institute Management Committee (IMC) and Institute Research Council (IRC) reviews and monitor the research programmes and facilitates to identify new research thrust areas for the Institute.

3.6 STAFF POSITION

Sl. No.	Category	Sanctioned	Filled
1	Scientist	44+1	27
2	Technical	44	32
3	Administrative	27	21
4	Supporting	66	38
Total		**182**	**122**

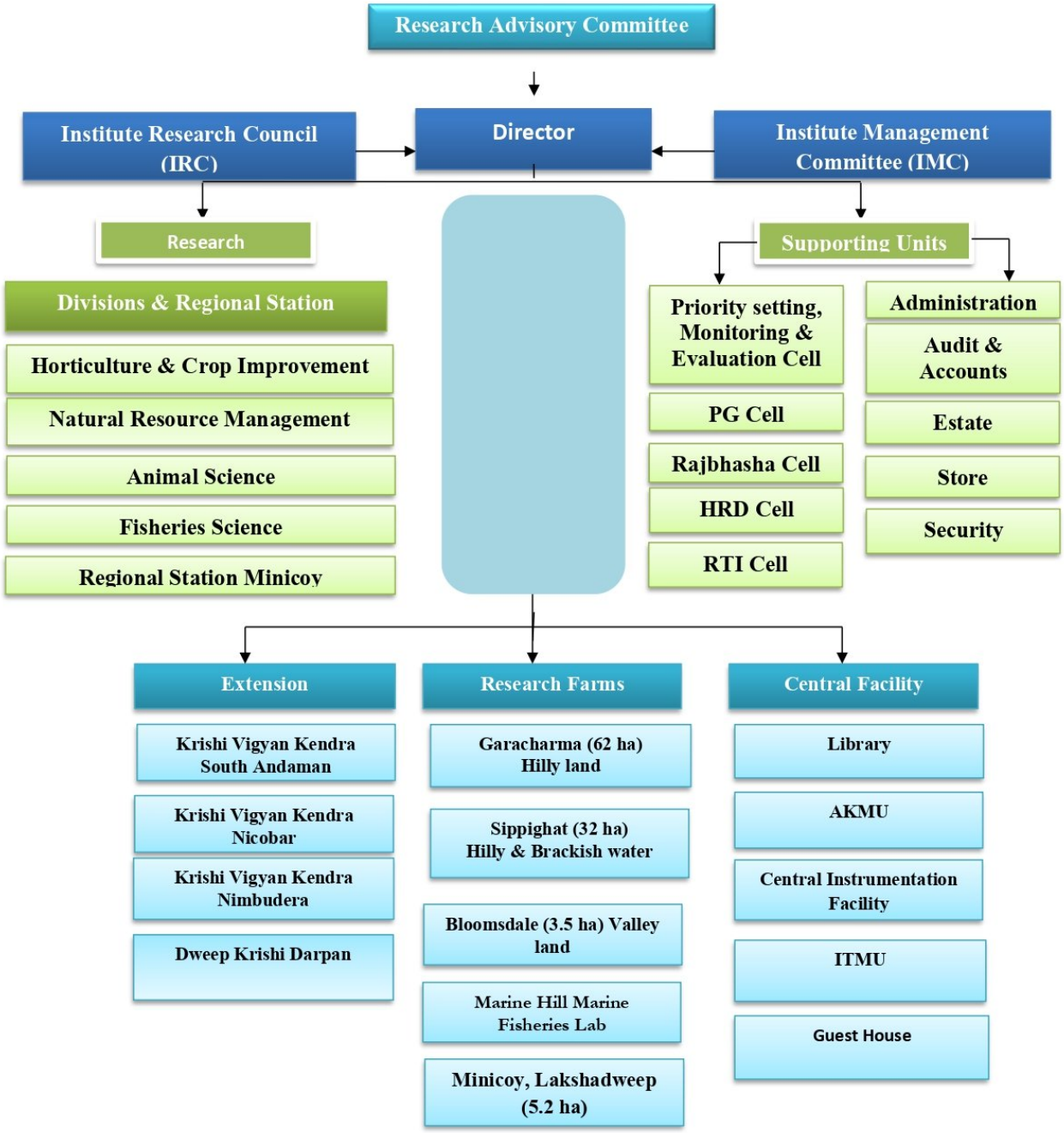
3.7 BUDGET UTILIZATION DURING 2025-2026

Head	RE (Rs. in lakhs)	Expenditure
Grant-in aid Capital	128.95	128.93
Grant in aid – Salary	1862.32	1862.28
Grant in aid – General	670.00	670.00

REVENUE (RS IN LAKHS)

Target	Achieved
114 lakhs	99.19 lakhs

3.8. ORGANOGRAM



RESEARCH ACHIEVEMENTS

DIVISION OF NATURAL RESOURCE MANAGEMENT

4.1 Natural Resource Management

Sustainable Agro-Biodiversity Research

Identification of High Tuber Yielding Greater Yam Accession

A high tuber yielding accession of Greater Yam *(Dioscorea alata),* IC648571, was identified under island conditions. The selection produces medium to large-sized tubers with purple peel and flesh and exhibits excellent cooking quality with an attractive pink colour. It recorded a significantly higher mean total tuber yield of 2.24 kg per plant compared to other evaluated collections, indicating its potential for improving yam productivity under the agro-climatic conditions of the Andaman and Nicobar Islands.

Fig. 1 Phytoconstituent analysis of medicinal plants and medicinal trees

Methanol extracts of *Morinda citrifolia* pulp and leaf, *Macaranga nicobarica* leaf, *Pandanus lerum* and *Pterocarpus dalbergioides* were analysed using GC–MS. The *M. citrifolia* pulp extract revealed 28 classes of phytoconstituents, with the first-time detection of (2-Methyloxiranyl) methanol, 2-Propanamine, N-methyl-N-nitroso-, 4-Nitrobenzoic acid tetradecyl ester, N-[4-(4-Chlorophenyl) isothiazol-5-yl)-1-methylpiperidin-2-imine and N(6)-(5-(1,2-Dithiolan-3-yl) valeryl)-L-lysine. The *M. citrifolia* leaf extract (23 classes) showed major components such as 3-Deoxy-D-mannoic lactone (14.99%), Phytol (10.87%) and Guanosine (7.22%), indicating antioxidant and antimicrobial potential. The *M. nicobarica* leaf extract (23 classes) had major compounds including Mome Inositol (16.40%), 1,3,4,5-Tetrahydroxy-Cyclohexanecarboxylic acid (12.40%) and Vitamin E (4.40%), suggesting therapeutic potential for inflammatory disorders. In addition, quantitative estimation of phenolics, flavonoids and antioxidant activity (DPPH method) in methanol extracts showed highest phenolic content in *M. citrifolia* leaf (404.5 ± 2.1 mg/100 g) and pulp (100.7 ± 1.0 mg/100 g), while flavonoid content was highest in *M. citrifolia* pulp (286.5 ± 3.2 mg/100 g). *Pterocarpus dalbergioides* leaf exhibited high phenolic (230.6 ± 3.2 mg/100 g) and flavonoid (1455.3 ± 4.7 mg/100 g) contents, with resin extract showing maximum scavenging ability (4643.3 ± 16.9 mg BHA/100 g). *Macaranga nicobarica* leaf showed phenolics of 371.3 ± 1.2 mg/100 g, while petiole extract had highest antioxidant activity (8245.3 ± 13.0 mg BHA/100 g). In *Pandanus lerum*, pulp exhibited higher phenolics (174.0 ± 4.5 mg/100 g) and total antioxidant activity (4038 ± 18.7 mg ascorbic acid/100 g), whereas leaf had higher flavonoids (1768.4 ± 2.8 mg/100 g) and DPPH scavenging activity (5229.1 ± 15.5 mg BHA/100 g). The analyses confirm the rich phytochemical profile and therapeutic potential of these medicinal plants and trees.

Genetic diversity of Pandanus species

Genetic diversity analysis was conducted on four *Pandanus* species- *Pandanus leram, P. odorifer, P. tectorius and P. amaryllifolius*—using 24 samples (six per species) and 10 SSR markers. PFSSR-5 exhibited the highest PIC value of 0.77, indicating strong polymorphism. The dendrogram grouped the studied *Pandanus* species into distinct clusters, demonstrating clear genetic differentiation.

Optimizing Silver Nanoparticle Synthesis Using Panchamrit Extract

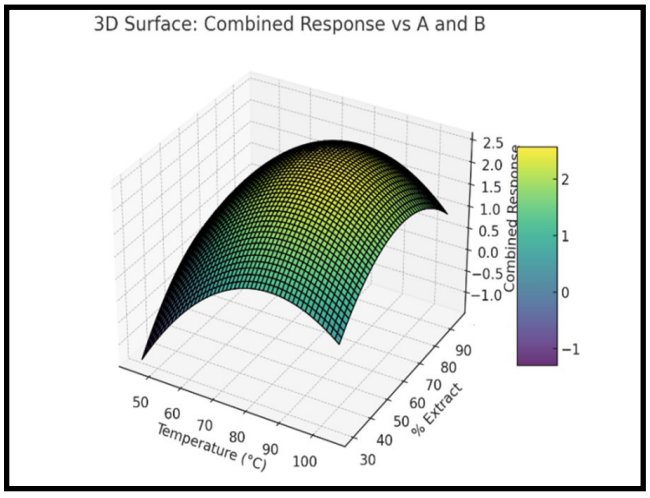


Fig. 2 Combined response as a function of temperature and extract concentration

Development of *Panchamrit* Mediated Silver Nanoparticles and Its Antimicrobial Activities:

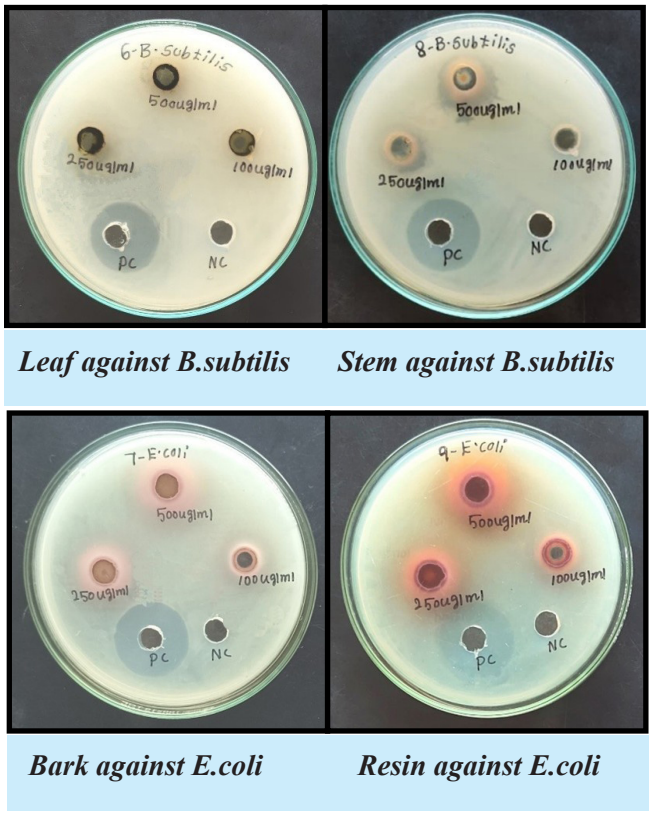
Central Composite Design based on Response Surface Methodology was used to optimize the synthesis of silver nanoparticles. Four independent variables—temperature, extract concentration, incubation time, and pH—were evaluated at three levels each across 30 experimental runs. A combined response model (70% UV absorbance and 30% nanoparticle stability) was employed to identify optimal conditions. The statistical model showed high reliability, explaining 92.2% variability in UV absorbance with significant results ($p < 0.05$). The optimized synthesis conditions were 85.28% extract concentration, 27 hours incubation, pH 6.7, and 40.84 °C temperature, producing maximum UV absorbance at 430 nm with good nanoparticle stability.

Nutrient Content in Natural Farming Inputs

The analysis of Beejamrit, Jeevamrit, and Ghanjeevamrit—for its nutrient composition confirmed the presence of essential macronutrients Nitrogen (N), Phosphorus (P), and Potassium (K) in all three inputs, validating their role in sustainable soil fertility management. Beejamrit contained 0.75% N, 0.13% P and 0.22% K and is beneficial for improved seed germination, strong root establishment, and reduction of seedborne diseases. Jeevamrit showed 0.24% N, 0.11% P and 0.18% K, enhancing soil microbial activity, nutrient availability, and soil structure. Ghanjeevamrit recorded 1.00% N, 0.85% P and 0.66% K, supporting long-term soil quality improvement and reduced dependence on synthetic fertilizers.

Antibacterial activity of Pterocarpus dalbergioides (Andaman Padauk)

The antibacterial activity of different tree parts of *Pterocarpus dalbergioides* (leaf, bark, stem and resin) was evaluated using methanol crude extracts prepared through Soxhlet extraction. Samples were collected from the CIARI field, dried, and powdered. Antibacterial screening was performed against *Bacillus subtilis*, *Escherichia coli*, and *Staphylococcus aureus* at three concentrations (500, 250 and 100 µg/ml) using the well diffusion method on Nutrient Agar medium. Gentamicin was used as a positive control. All tree parts exhibited antibacterial activity, with stem extract showing the highest inhibition against *B. subtilis* (21.35 ± 0.21 mm) and leaf extract showing moderate activity (8.85 ± 0.21 mm). Bark extract showed strong inhibition against *E. coli* (16.85 ± 0.21 mm). Resin extract demonstrated significant antibacterial activity across all three bacterial strains and concentrations, with the highest inhibition recorded against *E. coli* (18.45 ± 0.35 mm).



Leaf against B.subtilis *Stem against B.subtilis*

Bark against E.coli *Resin against E.coli*

Fig. 3 Antibacterial activity of plant extracts against B. subtilis and E. coli

Integrated Farming System

The Coconut-Based Integrated Farming System (IFS), established in 2021 on 1 ha of hilly land, aims to enhance productivity, income, and sustainability through systematic integration of coconut with goat, poultry, and fish components. During the reporting year, the system was expanded to 2 ha with the addition of *Morinda citrifolia* (noni) and *Pterocarpus indicus* (padauk), strengthening resource recycling and diversification. The sandy-loamy, slightly acidic soil, medium in organic carbon and low in phosphorus and potassium, responded well to organic amendments and integrated nutrient management. Crop diversification included spices

such as *Syzygium aromaticum* (clove), *Myristica fragrans* (nutmeg), *Piper nigrum* (black pepper), *Zingiber officinale* (ginger), *Curcuma longa* (turmeric) and *Coriandrum sativum* (coriander); tubers (*Manihot esculenta*, *Colocasia esculenta*, *Amorphophallus paeoniifolius*); fruits (pineapple, sugarcane); and vegetables (brinjal, gourds, okra, leafy greens). Fodder crops and trees including jackfruit, *Leucaena leucocephala* (subabul), *Tridax procumbens* (bakripathi) and *Calophyllumino phyllum* (chakurmanas) supported livestock, while boundary plantations of banana, breadfruit and lemon reduced soil erosion and generated additional income. Intercropping of noni with spices, banana and vegetables, and establishment of banana and coconut in the padauk block enhanced land use efficiency and perennial returns.

The livestock–aquaculture integration strengthened system productivity, with Andaman local goats increasing from 20 to 33 animals, poultry comprising Srinidhi and Vanaraja birds managed in two cycles per year, and additional components including Kadaknath, quail, guinea fowl and ducks. The fish pond stocked with *Oreochromis niloticus* (tilapia), *Labeorohita–Catlacatla* (rohu–catla) and *Ctenopharyngodon idella* (grass carp) effectively utilized poultry droppings, while a lined rainwater harvesting pond (230 m^3) ensured summer water availability and a small tank supported rearing of *Poecilia reticulata* (guppy). Recycling of crop residues and livestock waste through vermicompost, enriched compost and microbial consortia improved soil health and nutrient availability; *Azolla* was used as a protein-rich feed supplement, and marigold provided additional income.

Fig. 4 Integrated Farming system field view

The system recorded a net return of ₹3,45,263, with major contributions from coconut, tender coconut, vermicompost, bioconsortia, vegetables, poultry and goats, demonstrating a sustainable, climate-resilient and economically viable IFS model for the Andaman and Nicobar Islands.

Monitoring of Pesticide Residues in Agricultural Produce of the Andaman and Nicobar Islands

A total of 336 samples of fruits and vegetables were collected from representative locations across North, Middle, and South Andaman districts to evaluate pesticide residue levels in agricultural produce of the Andaman and Nicobar Islands. Samples were systematically collected, properly packed, and forwarded to the Export Inspection Agency (EIA) Laboratory, Kolkata, thedesignated laboratory of the MPRNL Project Coordination Cell, New Delhi, for multi-residue pesticide analysis. The analytical data generated support food safety assurance and compliance with prescribed safety standards.

Integrated Agrometeorological Advisory Services (Gramin Krishi Mausam Seva)

A total of 103 district-level agrometeorological advisories were issued from January 2025 onwards to support climate-responsive crop and farm management. To enhance data accessibility and knowledge dissemination, a digital repository titled “Agrometeorological Observatory Data: A Comprehensive Digital Database for Enhanced Accessibility” was developed, and a technical bulletin on adaptive crop and farm management strategies for the dry period (February–May) using *Indian Meteorological Department* station-based data was published. Capacity-building and outreach activities included farmer awareness programmes across the islands focusing on agromet advisory services, integrated pest and disease management, soil and water conservation, and backyard vegetable cultivation under varying seasonal conditions, benefiting more than 460 farmers with notable participation of women and tribal farming communities. An exposure visit of Nicobar farmers to the Agrometeorological Observatory was organized to improve understanding of GKMS operations. Advisory dissemination was further strengthened through

regular radio broadcasts on Kisan Vani/Krishi Jagath and circulation of agro-advisory bulletins through the Institute website, local newspapers such as *Daily Telegrams*, and WhatsApp groups, issued twice weekly by an interdisciplinary expert panel to ensure timely, location-specific weather-based advisories for enhanced farm productivity and climate resilience.

Sequential cropping in Andaman Padauk (Pterocarpus dalbergioides) based agroforestry system

The study aimed to develop and evaluate a sequential cropping system based on Andaman Padauk (*Pterocarpus dalbergioides*). Conducted over two consecutive years (2022–2024) using a Randomized Block Design, the experiment involved combinations of vegetables, fruits, and tuber crops. Significant differences were observed among the tree crop combinations. Under the *Pterocarpus dalbergioides* based sequential cropping system, yields of 35 kg tapioca tubers and 2.2 kg vegetable cowpea were obtained from an area of 10 m² each, while bhendi recorded an average yield of 0.72 kg/plant. The highest mean yields recorded in the system were 8 t/ha for tapioca tubers and brinjal fruits, followed by banana fruits (6.5 t/ha). The intermittent yields from vegetables, fruits, and tubers improved overall plantation productivity and supported better growth of padauk trees during the initial growth stages.

Determining Suitable Cropping Window and Varieties in Rice-based Cropping System under Island Ecosystem

Ensuring timely sowing is critical for achieving optimal yield in rice (*Oryza sativa* L.) under the humid and high-rainfall conditions of the island ecosystem. An experiment is being conducted at Bloomsdale Research Farm, Chouldari, to evaluate varietal performance across different transplanting windows. Out of three rice varieties, CARI Dhan 5, CARI Dhan 6, and Gayatri, transplanted during Kharif 2025 on 1st June, 15th June, 1st July, and 15th July, CARI Dhan 6 at early transplanting (1st June) recorded the highest grain yield along with superior yield attributes such as harvest index and panicle weight. Delayed transplanting beyond mid-June resulted in a progressive yield decline, attributed to waterlogging, increased incidence of pests such as *Leptocorisa acuta* (Gundhi bug) and diseases like *Ustilaginoidea virens* (false smut), and untimely rainfall during harvest affecting crop maturity. The study highlights 1st to 15th June as the optimum transplanting window and identifies CARI Dhan 6 as the most suitable variety for maximizing rice productivity under the island agro-climatic conditions.

Fig. 5 Three different varieties of Rice crop in the Bloomsdale farm, ICAR-CIARI sown at 4 different dates during Kharif 2025.

DIVISION OF HORTICULTURE AND CROP IMPROVEMENT

4.2 Horticulture Crop Improvement

Theme: Genetic Resources and Crop Improvement

Release of varieties

Eighteen varieties of various horticultural and field crops including the first variety of tejpat in the country, Malabar tamarind (2), brinjal (2), rice (6), mung bean (5) and urd bean (2) were recommended for release by the State Seed Sub-committee for Agricultural and Horticultural Crops for the Union Territory of Andaman and Nicobar Islands. Details of the released varieties have been presented in the Table.

Table 1. Details of varieties released during the year

Variety	Salient characters	Contributors
Dweep Tej- 1	High dry leaf yield (960.5 g/m of harvested stem), dry recovery (52.8%), essential oil (0.5%), better retention of colour on drying with high total chlorophylls (3.578 mcg/g)	Ajit Arun Waman & Pooja Bohra
Dweep Agrim	Regular bearing, early harvesting season (late April onwards), thin rind (5.55 mm), suitable for processing with mean yield of 115 kg of fresh fruits/tree	Pooja Bohra, Ajit Arun Waman & P.K. Singh
Dweep Vishal	Bold fruits (152 g) with thick rind (11.77 mm), medium to late maturity, mean yield of 171 kg fresh fruits/tree	Pooja Bohra, Ajit Arun Waman & P.K. Singh
Dweep Brinjal 1	Suitable for dry season (October–May), high-yielding (25-35 t/ha), bacterial wilt-resistant, medium-tall, profuse branching, light green, oblong fruits with few seeds, drought tolerant	Krishna Kumar, P.K. Singh, Ajanta Birah, Shrawan Singh, Naresh Kumar, A.K. Singh, D.R. Singh, R.K. Gautam & L.B. Singh
Dweep Brinjal 2	High-yielding (18-20 t/ha), bacterial wilt-resistant, medium-height (80 cm), profuse branching, purple, glossy, oblong, fruits borne in clusters, suitable for dry season	Naresh Kumar, P.K. Singh, R.K. Gautam, Krishna Kumar, Ajanta Birah, K. Sakthivel, S.K.Z. Ahmed & S.D. Roy
Dweep Dhan 6	Medium-duration (125 days), short statured (100 cm), resistant to bacterial leaf blight, bears 7–8 effective tillers/plant with panicle length of 24 cm and long slender grains, 5.5 t/ha yield	P.K. Singh, Krishna Kumar, Ajanta Birah, R.K. Gautam, Naresh Kumar, T.V.R.S. Sharma, A.K. Singh, S.K.Z. Ahmed & S.D. Roy
Dweep Dhan 7	Short-duration (120 days), short-statured (100 cm), resistant to bacterial leaf blight and lodging, bears 6–7 tillers per plant with panicle length of 25 cm, 5.0–5.5 t/ha yield	P.K. Singh, Krishna Kumar, Ajanta Birah, R.K. Gautam, Naresh Kumar, T.V.R.S. Sharma, A.K. Singh, S.K.Z. Ahmed & S.D. Roy

Variety	Salient characters	Contributors
Dweep Dhan 8	Long-duration (215 days), photosensitive, tall (188 cm) with upright leaves, medium-bold, yellowish, shiny grains containing Zn (27 ppm), Fe (17 ppm) and protein, low spikelet sterility, 3.0 t/ha grain yield and good straw yield for fodder purpose	R.K. Gautam, P.K. Singh, A.K. Singh, S.K.Z. Ahmed, K. Sakthivel & S.D. Roy
Dweep Dhan 9	Long-duration (216 days), photosensitive, tall (200 cm) with upright leaves, medium-bold, brown grains containing Zn (31ppm), Fe (15ppm) and protein, low spikelet sterility, 3.5 t/ha grain yield	R.K. Gautam, P.K. Singh, A.K. Singh, S.K. Z. Ahmed, K. Sakthivel & S.D. Roy
Dweep Dhan 10	High-yielding (5.5–6.0 t/ha), matures in 175 days, photosensitive, medium-statured (130 cm), lodging-tolerant, with upright leaves, long panicles (30 cm), and short grains, suitable for late planting	P.K. Singh, R.K. Gautam, Krishna Kumar, K. Sakthivel, K. Venkatesan & S.K.Z. Ahmed
Dweep Dhan 11	Short duration (115 days), semi-dwarf, non-lodging, high yielding (5.0 t/ha), short slender grains, resistant to bacterial leaf blight, suitable for timely planting	P.K. Singh, R.K. Gautam, K. Sakthivel, K. Venkatesan & S.K.Z. Ahmed
Dweep Mung 1	Medium-duration, synchronous maturity (75–80%), long brown pods with bold, shiny, pale green grains, medium statured, profuse branching, resistant to powdery mildew and MYMV, 1.5-1.6 t/ha yield	A.K. Singh, Krishan Kritania, R.K. Gautam, Sanjeev Gupta, G.P. Dixit, Naresh Kumar, P.K. Singh, Krishna Kumar, S.K.Z. Ahmed & S.D. Roy
Dweep Mung 2	Medium-duration, black long pods with bold seeds, medium statured, profuse branching, resistant to powdery mildew and MYMV, 1.5-1.6 t/ha yield	A.K. Singh, R.K. Gautam, Khokan Mondal, Sanjeev Gupta, G.P. Dixit, Naresh Kumar, P.K. Singh, Krishna Kumar, S.K.Z. Ahmed & S.D. Roy
Dweep Mung 3	Medium statured, black long pods with bold seeds, profuse branching, resistant to charcoal rot, powdery mildew, and MYMV, 1.5–1.7 t/ha yield	A.K. Singh, R.K. Gautam, Prashant Mondal, Sanjeev Gupta, G.P. Dixit, Naresh Kumar, P.K. Singh, Krishna Kumar, S.K.Z. Ahmed & S.D. Roy

Variety	Salient characters	Contributors
Dweep Mung 4	Medium-duration (61–70 days), determinate, long pods (12.3–15.6 cm), 12–16 seeds/pod, 6.1–6.9 g test weight, medium statured (59.2–70.1 cm), resistant to charcoal rot, powdery mildew, and MYMV, 1.9–2.0 t/ha yield	A.K. Singh, Sudhir Tirki, P.K. Singh, R.K. Gautam, Naresh Kumar, T.P. Swarnam, T. Subramani, A. Velmurugan, S.K.Z. Ahmed & S.D. Roy
Dweep Mung 5	Medium-duration (58–69 days), determinate, medium seeds, long pods (9–13 cm), 10–14 seeds/pod, 4.2–4.9 g test weight, medium statured (63–79 cm), resistant to powdery mildew and MYMV, 1.27–1.94 t/ha yield	A.K. Singh, Niranjan Roy, P.K. Singh, R.K. Gautam, Naresh Kumar, T.P. Swarnam, T. Subramani, A. Velmurugan, S.K.Z. Ahmed & S.D. Roy
Dweep Urd 1	Medium-duration (62–70 days), indeterminate, long pods (4.8–5.7 cm), 5–8 seeds/pod, 4.5–5.1 g test weight, medium statured (34–59 cm), resistant to leaf crinkle, powdery mildew, and MYMV, 0.9–1.3 t/ha yield	A.K. Singh, P.K. Singh, R.K. Gautam, Naresh Kumar, T.P. Swarnam, T. Subramani, A. Velmurugan, S.K.Z. Ahmed & S.D. Roy
Dweep Urd 2	Medium-duration (64–72 days), indeterminate, long pods (5.3–5.7 cm), 5–8 seeds/pod, 5.2–5.9 g test weight, medium statured (37–73 cm), 4–8 branches/plant, resistant to charcoal rot, leaf crinkle, powdery mildew, and MYMV, 0.9–1.4 t/ha yield	A.K. Singh, P.K. Singh, R.K. Gautam, Naresh Kumar, T.P. Swarnam, T. Subramani, A. Velmurugan, S.K.Z. Ahmed & S.D. Roy

Collection of vegetable germplasm

Vegetable crop germplasm from diverse agro-climatic regions was collected for subsequent characterization and utilization. Germplasm of basella (3 nos.), roselle (3 nos.), ivy gourd (8 nos.), yardlong bean (2 nos.), bottle gourd (2 nos.) andclove bean (1 no.) were collected from the islands, while 53 germplasm of eight vegetable crops targeted under the project were collected from the mainland India. In addition, 62 genotypes of other vegetables, seed spices, and medicinal crops were collected from different regions. Wild relatives of vegetables included 9 collections of *Vigna marina*, 2 of *Cucumis melo* var. *agrestis*, and one each of *Solanum violacea* and *S. xanthocarpum.*

Morphological and molecular characterization of Ivy gourd accessions

Eight new ivy gourd collections were made from South Andaman and conserved in the field gene bank. Details of previously conserved 20 collections were submitted to ICAR–NBPGR and IC numbers (IC656696 to IC656715) were obtained.

Table 2. Morphological characters of ivy gourd collections

Collection no.	Mean Fruit Length (mm)	Mean Fruit Width (mm)	Mean Fruit Weight (g)	Mean Internodal length (cm)
IC656700	45.61	20.46	13.89	7.09
IC656710	59.63	17.87	11.65	8.96
PP/PK/SS/IG-25-01	44.17	22.01	12.04	11.36
IC656703	53.63	18.96	13.64	6.93

Collection no.	Mean Fruit Length (mm)	Mean Fruit Width (mm)	Mean Fruit Weight (g)	Mean Internodal length (cm)
IC656697	31.81	19.10	11.48	8.00
IC656706	70.51	17.47	13.97	5.21
IC656712	60.62	20.22	14.42	7.36
IC656711	44.46	26.04	15.56	6.90
IC656702	53.53	22.58	16.77	
IC656714	65.02	20.91	16.18	7.02
IC656701	45.78	22.01	14.79	11.01
IC656713	61.42	21.39	16.70	6.92
IC656698	55.71	23.08	17.11	8.41
PP/PK/SS/IG-25-03	80.38	20.91	21.74	6.11
IC656696	70.64	21.99	20.71	9.58
IC656699	65.62	23.05	22.37	7.80
IC656708	95.09	21.44	26.49	11.30
PP/PK/SS/IG-25-05	87.09	18.95	20.18	10.56
PP/PK/SS/IG-25-06	47.66	27.55	19.56	8.32

Among the 19 accessions studied, considerable variability was recorded for fruit traits. Average fruit length ranged from 31.81 mm (IC656697) to 95.09 mm (IC656708), while fruit weight varied from 11.48 g to 26.49 g. IC656708 was the most superior accession (Fig.6), recording the maximum fruit length (95.09 mm), fruit weight (26.49 g), and internodal length (11.30 cm), indicating its potential for high yield. PP/PK/SS/IG-25-05 also performed prominently with long fruits (87.09 mm), high fruit weight (20.18 g), and extended internodal length (10.56 cm). These accessions represent promising genetic resources for selection and further improvement in ivy gourd.

Fig. 6 Fruit morphology of ivy gourd: (a) IC656708 and (b) PP/PK/SS/IG-25-05.

For molecular characterization, a total of 20 SSR markers were used to assess the genetic diversity among the 23 accessions. Out of these, 8 markers were found to be polymorphic, indicating their effectiveness in detecting genetic variation among the genotypes. The highest PIC value was recorded for the marker TRINITY_DN995_c0_g1_i1 (0.5783), suggesting it to be the most informative marker in this study. The observed heterozygosity (Ho) across the polymorphic loci had a mean value of 0.1509, indicating a moderate level of genetic variation within the accessions. The expected heterozygosity or gene diversity (He) showed a mean value of 0.2404.

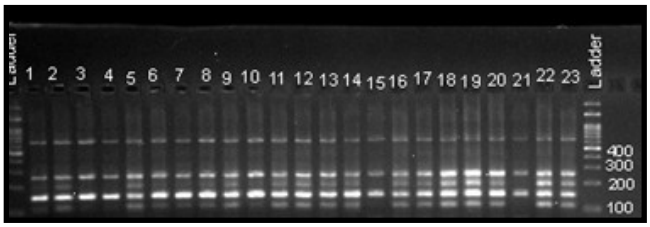


Fig. 7 Representative gel electrophoresis image of TRINITY_DN995_c0_g1_i1amplification

A dendrogram was constructed based on Nei's genetic distance matrix to assess the genetic relationships among ivy gourd accessions. The maximum genetic distance (0.47) was observed between accessions IC656710 and IC656709, indicating high genetic divergence. In contrast, the minimum genetic distance (0.0172) was recorded between accessions IC656696 and IC656699, suggesting close genetic similarity (Fig. 8).

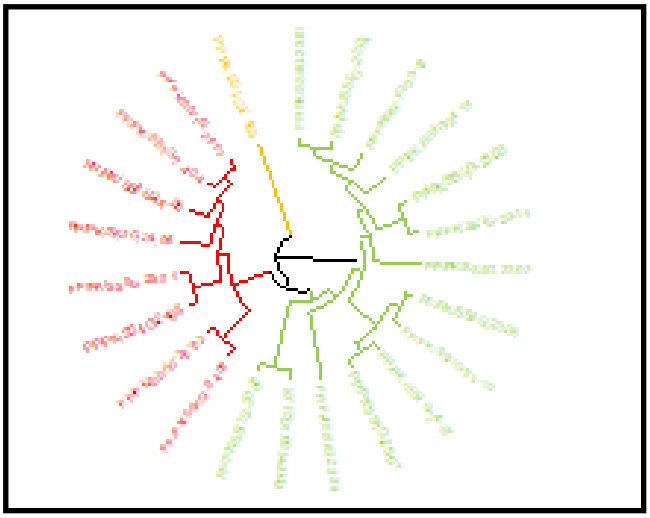


Fig. 8 Nei's genetic distance based dendrogram showing genetic relationships among ivy gourd accessions

Evaluation of snap melon accessions for dual purpose

Nine snap melon accessions were evaluated for dual purpose *i.e.* salad (immature stage) and dessert (mature stage). Among the accessions, PP-20 was the most promising line, recording maximum number of fruits per plant (9.24), highest average immature fruit weight (243.15 g) and mature fruit weight (3.05 kg), indicating its suitability for dual purpose utilization. Accessions IC647725 and PP-14 also showed higher mature fruit weight (2.52 kg each), with IC647725 additionally recording a higher number of fruits per plant (7.07), suggesting good yield potential. For salad purpose, PP-13 performed well with comparatively higher immature fruit weight (216.62 g) along with a higher number of fruits per plant (7.85), indicating stable immature fruit production. Overall, PP-20, IC647725, PP-13, and PP-14 were identified as promising accessions for further evaluation and utilization Considerable variation was observed among snap melon genotypes for quality attributes including moisture content, pH, total soluble solids, titratable acidity, and vitamin-C content. Moisture content ranged from 93.61% to 98.03%, with PP-14 and PP-20 recording the highest values, while pH varied widely, reaching a maximum in PP-13 (6.56). Vitamin-C content showed notable variation, with PP-08 recording the highest value (13.44 mg/100 g), followed by PKRR-01 and PP-13 (8.06 mg/100 g);

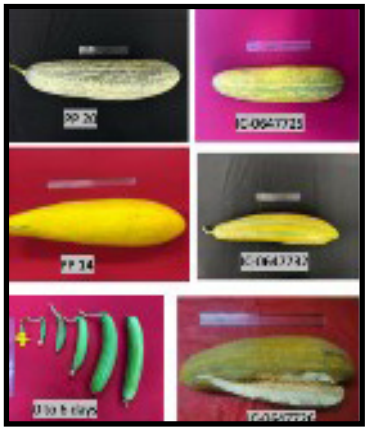


Fig. 9 Phenotypic variations in fruit morphology among evaluated snap melon accessions

Table. 3 Mean performance of snap melon accessions for fruit morphological and yield traits

Collection/ Accession	Mean Fruit Width (mm)	Mean Fruit Length (cm)	Immature Fruit Weight (g)	Mature Fruit Weight (kg)	Fruits per Plant
IC647732	44.50	30.29	210.23	2.00	4.61
PP-04/IC647725	50.37	39.88	212.29	2.52	7.07
PP-08/ IC647726	32.89	38.90	212.67	2.07	6.33
PP-11	37.71	23.37	203.33	1.69	8.28
PP-12	36.19	29.37	201.67	2.29	7.17
PP-13	38.32	36.61	216.62	2.47	7.85
PP-14	35.46	45.12	214.52	2.52	4.41
PP-15/IC647729	31.17	32.27	196.33	1.91	7.72
PP-20	38.11	51.89	243.15	3.05	9.24

Table No. 4 Fruit quality parameters of evaluated accessions of snap melon

Collection/ Accession	Moisture content (%)	pH	TSS (°Brix)	TA (%)	Vitamin-C mg/100g
IC647732	94.13	4.71	4	0.35	8.06
PP-04/IC647725	96.06	5.43	2	0.35	5.37
PP-08/ IC647726	93.95	4.88	4	0.70	13.44
PP-11	93.61	5.00	4	0.35	5.37
PP-12	95.98	5.05	1	0.18	5.37
PP-13	97.07	6.56	2	0.53	8.06
PP-14	98.03	5.52	1	0.18	5.37
PP-15/IC647729	95.51	4.85	3	0.18	5.37
PP-20	98.00	5.29	1	0.18	5.37

Morphological characterization of Roselle collections

Morphological characterization of three collections of roselle (*Hibiscus sabdariffa*) for various quantitative and qualitative parameters was undertaken. Stem colour differed among the collections, while stem and leaves were pubescent in all three collections. Leaf shape varied from deeply divided palmate leaves in Collections 1 and 3 to fully divided leaves in Collection 2. Floral traits showed variation in sepal colour, whereas petal colour was consistently yellow in Collections 1 and 2. Collection 3 recorded the highest values for leaf size, leaf weight, plant height, and stem diameter; reflecting superior vigour and its potential utility in improvement programmes.

Performance evaluation of Basella germplasm

Four genotypes of basella collected from the islands and mainland India were evaluated for yield parameters and results are presented in Fig.10. Branch length ranged from 42.40 to 55.33 cm, with Collection 2 recording the maximum length. Narrow variation was recorded in number of leaves, while interleaf distance varied markedly from 3.43 to 6.47 cm, reflecting differences in canopy architecture. Collections 1 and 2 showed wider leaf spacing compared to Collections 3 and 4. Leaf weight ranged from 4.67 to 10.67 g, with Collection 2 recording the highest leaf biomass, whereas Collection 4 exhibited the lowest values despite higher leaf number. Overall, the germplasm collected from Jodhpur emerged superior in terms of vegetative growth and leaf yield potential.

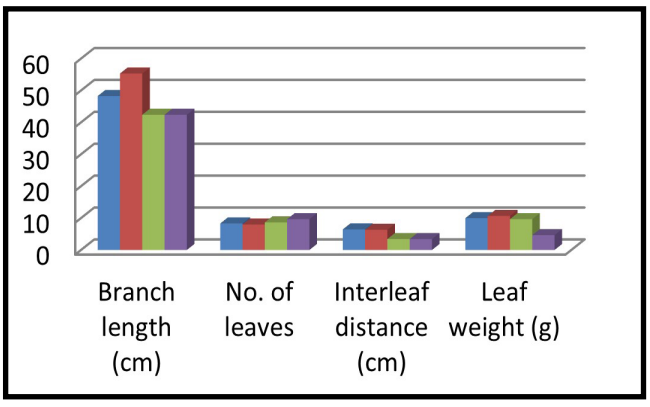


Fig. 10 Yield related traits' performance of Basella Collections

Preliminary evaluation of vegetable crops under island conditions

Diverse genotypes of 09 different vegetable crops namely cowpea, tomato, cherry tomato, brinjal, chilli, bottle gourd, ridge gourd, cucumber, okra, were planted in row planting system for preliminary assessment of their yield, and the results obtained have been presented in Fig 11. Results revealed substantial variability in yield performance across crops and genotypes. Cowpea cv. Arka Mangala recorded the highest yield (538.33 g/plant). In solanaceous vegetables, overall tomato performance remained constrained by a short favorable climatic window. Dweep Brinjal 1 recorded the highest yield (814.0 g/plant) and chilli cv. Arka Tanvi exhibited 202.86 g green fruit yield/plant). Okra cv. Arka Anamika produced 271.26 yield fruit /plant). Cucurbit crops exhibited comparatively superior productivity under island conditions. Bottle gourd collection Kanpur Local emerged as the best performer (1989.50 g/plant). Cucumber cv. Arka Veera showed moderate yield (339.94 g/plant) and served as a baseline genotype.

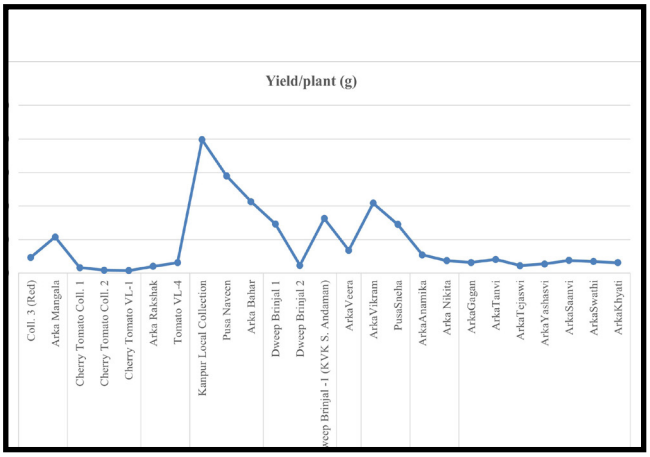


Fig: 11 Performance of vegetable varieties under island condition

The study successfully identified promising genotypes for further validation through replicated, season-specific trials and refinement of location-specific varietal recommendations for island ecosystems. Apart from these, spinach, beet root, radish, carrot, kale, knolkhol, coriander, dill and onion genotypes were also grown to assess their performance.

Collection and multiplication of mango germplasm

Exploration for mango germplasm was undertaken in the South Andaman district and 12 collections including one wild relative (*Mangifera camptosperma*) were identified. Scions of seven collections were grafted on rootstocks raised during the previous season using the softwood grafting technique for subsequent *ex situ* conservation. *In situ* characterization of the collections was carried out following 24 morphological descriptors, comprising of five quantitative traits and 19 qualitative traits, covering tree, foliage, bark, and leaf characters (Table 5).

Table. 5 Descriptive statistics of quantitative morphological traits in mango accessions

Trait	Mean	SD	CV (%)	SE	Minimum	Maximum
Trunk circumference (cm)	156.57	55.18	35.24	20.85	93.00	258.00
Leaf blade length (cm)	22.09	3.43	15.54	1.30	15.76	26.04
Petiole length (mm)	33.77	9.29	27.52	3.51	18.71	43.92
Thickness of pulvinus (mm)	3.49	0.39	11.05	0.15	2.80	3.97
Leaf blade width (cm)	5.89	0.70	11.93	0.27	4.68	6.85

Seed fat profiling in collections of Malabar tamarind and Andaman Kokum

Seed fat from *Garcinia* species has received significant attention from the researchers in the recent past. Six collections each of Andaman Kokum (*G. dhanikhariensis*)- an endemic species and Malabar tamarind (*G. gummi-gutta*)- a native species of India were studied for their seed fat composition. GC-MS analysis revealed intra-specific variations in both the species. In Andaman Kokum, a total of 106 compounds were detected in six collections; however, their presence and concentration varied among the collections. Stearic acid was the dominant compound (37.29%, 41.99% and 42.55%) in three collections, while Elaidic acid (40.90% and 41.62%) was the dominant compound in two other collections. One collection had Oleic acid (33.79%) as the dominant compound. In Malabar tamarind, total 79 compounds were detected in the studied collections. Stearic acid and Oleic acid were the two most dominant compounds wherein four collections had dominant Stearic acid ranging between 37.26% and 60.23%, while the other two had dominant Oleic acid (40.36% & 59.27%). Palmitic acid was the third dominant compound in the seed fat of all the collections.

Crop improvement in Arecanut

Under the AICRP on Plantation Crops project, sib-mating was done in variety Samrudhi and seed nuts were obtained for providing to the coordinating centres across the country. Similarly, Samrudhi × Andaman Arecanut Dwarf and reciprocal cross were made to obtain hybrid seed nuts. Cross Samrudhi × Andaman Arecanut Dwarf was successful and seed nuts have been harvested for further studies. Seed nuts of Dweep Haritha and

Dweep Sona were also provided to the nodal centre for facilitating their multi-location evaluation at different centres. Nucleus seed gardens of improved varieties of coconut *viz*. Dweep Annapurna, Dweep Omkar, Dweep Chandan and Dweep Surya along with arecanut 'Samrudhi' are being maintained following standard package of practices.

Registration of Woody Pepper Germplasm

Piper pendulispicum (Woody pepper) is a recently reported species from the Andaman and Nicobar Islands using DNA barcoding approach. Stem thickness increases as the vine grows and, in a collection, the harvested stems of up to 9 cm were reported during two years of evaluation. Studies also revealed the stem pieces to be source of phenolic compounds, piperine and oleoresins. The germplasm WP/LM was registered with ICAR-NBPGR, New Delhi as INGR25029 as a unique germplasm.

Crop improvement studies in cinnamon

In order to study the variability present in the germplasm of cinnamon, coumarin content was determined in 24 accessions along with check variety Konkan Tej. Data obtained from two years of analysis suggested presence of wide variability among the accessions studied for coumarin content. Of the studied accessions, the accession IC653495 had significantly lowest coumarin content as no peak was detected in both the years of evaluation. However, during the confirmatory studies in third year, minor peak was detected thereby making the pooled value of coumarin content of 15.69 mg/kg over three years in this accession. This accession has been identified as a potential germplasm for further studies. Further, six other accessions (IC653474, IC653481, IC653483, IC653486, IC653487, IC653494) also showed statistically lower coumarin content than the check. Similarly,, accessions with other desirable traits have been shortlisted.

Evaluation of clove collections

Clove is an important spice crop grown in some islands as an intercrop in the coconut and arecanut plantations. For identifying superior germplasm of clove under island conditions, six individual trees were identified and are being studied in detail for various growth, yield and biochemical traits. Collar diameter of the trees varied from 18.45 cm to 26.73 cm, while DBH ranged between 13.59 and 26.73 cm. number of branches ranged from 22 to 58, while canopy spread was in the range of 30.4 m^2 and 59.2 m^2. Mean number of flowering clusters per branch was found to be as low as 23.85, while it was as high as 48.05. Total number of clusters per tree ranged between 918.5 and 2498.6.

Evaluation of MAGIC rice lines for submergence tolerance

A total of 17 MAGIC rice lines along with the tolerant check (Swarna Sub 1) were evaluated for submergence tolerance. The crop was submerged 45 days after planting with ~1.2 m water depth for 14 days. Significant variation in survivability was observed among the lines. High survivability (>50%) was recorded in MG8-1-48-M-8 (57.40%), MG8-2-9-E-9 (54.72%) and Dweep Dhan 11 (54.00%), which performed better than the check Swarna Sub 1 (14.00%). Moderate survivability (30–50%) was observed in MG8-4-72-E-44, MG4-1-29-M-2 and MG4-2-146-M-40. Days to flowering ranged from 136 to 157 days, and plant height varied from 88 to 149 cm, with taller genotypes showing better survival. Panicle length ranged from 18.0 to 25.4 cm, while tiller number varied from 4.4 to 10.8, indicating that tiller number alone did not confer tolerance. Overall, MG8-1-48-M-8, MG8-2-9-E-9 and Dweep Dhan 11 emerged as promising donors for submergence tolerance breeding for flood-prone lowland ecosystems.

Performance of selected late-maturing MAGIC rice genotypes evaluated during Kharif 2025

Seven late-maturing MAGIC rice genotypes along with the check variety Gayatri were evaluated for phenology and yield traits. Days to 50% flowering ranged from 110 to 122 days with low variability (CV 0.88%). Plant height varied from 109 to 174 cm (CV 2.01%). Grain yield showed significant variation (2,889–4,630 kg ha^{-1}; CV 5.62%), with MG8-4-70-M-37 recording the highest yield (4,630 kg ha^{-1}) and performing significantly better than most of the genotypes ($CD_{0.05}$ = 348.34 kg ha^{-1}) including the check under the island condition.

Evaluation of MAGIC rice lines under controlled (micro-plot) conditions

Twenty MAGIC rice lines were evaluated under micro-plot conditions for key biotic and abiotic stresses (Fig:.12) with Dweep Dhan 5 and Dweep Dhan 7 used as resistant and susceptible checks, respectively. Dweep Dhan 5 and MG4-2-31-E-19 showed resistance to brown planthopper with a damage score of 3. Under salinity stress (EC 9.0 dS m^{-1}), six lines (MG8-4-71-E-43, MG4-2-81-E-19, MG4-2-92-M-33, MG8-4-25-E-13, MG8-4-94-M-43, and MG8-4-14-M-16) exhibited good tolerance (score 3). MG4-2-81-E-19 was tolerant to zinc deficiency and resistant to bacterial leaf blight, producing 4.5–5.0 t/ha grain yield under normal field conditions. Overall, MG4-2-81-E-19 emerged as a promising multi-stress tolerant line suitable for further multi-location testing and climate-resilient rice breeding for stress-prone environments, including the Andaman & Nicobar Islands.

Fig. 12 Field view of MAGIC rice lines under salinity stress (EC 9.0 dS m^{-1}) (left) and BPH-resistant MAGIC rice lines under controlled infestation conditions (right)

A total of 13 rice varieties evaluated during Kharif 2025 were grouped into early, medium, late, and very late-maturing (traditional) categories and assessed for phenology, grain yield, and harvest index under the island ecosystems. Early maturing improved varieties flowered at an average of 86 days and matured in 111 days, recording the highest mean grain yield (4968 kg ha^{-1}) and harvest index (42.50%). Dweep Dhan 11 was the best performer in this group, yielding 6200 kg ha^{-1} with the highest harvest index (HI; 55.17%). Medium-maturing varieties flowered at 94 days and matured in 121 days, with an average yield of 4717 kg ha^{-1} and 40.49% harvest index withDweep Dhan 7 performing the best (5625 kg ha^{-1} yield; HI 45.45%). Late-maturing varieties flowered at 120 days and matured in 148 days, producing an average yield of 4716 kg ha^{-1} with a slightly lower harvest index (38.67%).Dweep Dhan 4 recorded the highest yield (5250 kg ha^{-1}) in the group, while Swarna Sub 1 showed a relatively higher harvest index (44.44%). Very late-maturing traditional varieties flowered at 139 days and matured in 169 days, recording the lowest mean yield (2966 kg ha^{-1}) and harvest index (21.76%). Overall, early and medium-maturing improved varieties outperformed late and traditional varieties, with Dweep Dhan 11, Dweep Dhan 7, and Dweep Dhan 4 emerging as the most promising for higher productivity and efficient biomass partitioning under Andaman & Nicobar Islands conditions.

Table. 6 Performance of rice varieties evaluated during Kharif 2025 under Andaman & Nicobar Islands conditions

Varieties	Days of flowering	Maturity (Days)	Grain yield (kg/ha)	Harvest Index (%)
Early				
Dweep Dhan 1	84	108	4650	37.70
Dweep Dhan 2	89	115	4250	38.46
Dweep Dhan 3	88	112	4774	38.66
Dweep Dhan 11	84	109	6200	55.17
Mean	**86**	**111**	**4968**	**42.50**
Medium				
Dweep Dhan 6	91	117	4275	42.22
Dweep Dhan 7	94	120	5625	45.45
CSR 36	97	125	4250	33.78
Mean	**94**	**121**	**4717**	**40.49**

Varieties	Days of flowering	Maturity (Days)	Grain yield (kg/ha)	Harvest Index (%)
Late				
Dweep Dhan 4	121	152	5250	37.50
Dweep Dhan 5	119	149	4388	39.39
Gayatri	117	146	4725	33.33
Swarna Sub 1	123	146	4500	44.44
Mean	**120**	**148**	**4716**	**38.67**
Very late				
Black Burma	142	171	2475	13.58
Khushbuyya	136	166	3456	29.93
Mean	**139**	**169**	**2966**	**21.76**

Evaluation of suitable sesame varieties for island climatic conditions

To identify the suitable sesame (*Sesamum indicum* L.) varieties for cultivation under the tropical island ecosystem of Andaman Islands, twenty three varieties were introduced from diverse agroclimatic regions of India. These included A RT-346, -351, -372 (ARS-RAU), DSS-9 (UAS, Dharwad), GJT-5, GT-6, -10, -11 (JAU, Gujarat), PKV-NT-11 (PDKV), Jagtial Til 2 (PJTSAU), Unnat Rama, TKG-22, -308 (AICRP Sesame), Thilathara, Kayamkulam-1, Thilak, Thilarani (KAU), Jawahar Til 14 (JNKVV), BRT-04 (BAU), TMV-3, -4, SVPR-1 (TNAU), Suprava (CU, West Bengal). The evaluation trial was conducted during summer 2025 (January–April) in 4 × 2 m sized plots.

The mean plant height was 99.43 cm, ranging from 69.6 cm to 127.25 cm with a low CV of 5.05%, indicating uniform growth across entries. The days to 50% flowering (D50%) averaged 35.74 days, reflecting early to medium flowering habit, with low variation (CV= 3.79%). While there was no variation in number of primary branches, secondary branches ranged from 0.91 to 3.72 per plant (CV = 35.34%), while tertiary branching recorded the highest CV (164.19%), suggesting high genetic diversity in branching ability. The number of capsules per plant varied from 37.8 to 91.8, with a mean of 61.91 and CV of 24.20%, indicating scope for selection of high capsule-bearing types. The mean yield per plot was 1102.37 g, ranging between 647.47 g and 1532.13 g,with moderate variability (CV =17.15%).The varieties Thilarani, JCS-2454 (Jagtial Til-2), SVPR-1, TKG-22, GT-11, RT-372, Thilathara, CUMS-17, Unnat Rama, and TKG-308 exhibited superior performance under Andaman conditions.

Table. 7 Descriptive statistics of yield characteristics of Sesame genotypes

Trait	Count	Mean	SE	SD	Min	Max	CV (%)
Plant height (cm)	23	99.43	2.71	12.99	69.60	127.25	5.05
D50%	23	35.74	0.77	3.71	29.67	40.67	3.79
Primary Branches	23	1.00	0.00	0.00	1.00	1.00	0.00
Secondary Branches	23	2.03	0.15	0.71	0.91	3.72	35.34
Tertiary Branches	23	0.75	0.12	0.58	0.00	2.25	164.19
No. of Capsules / Plant	23	61.91	2.35	11.29	37.81	91.75	24.20
Yield / Plot (g)	23	1102.37	57.74	276.91	647.47	1532.13	17.15

Fig. 13 Experimental field view of sesame varieties

Crop Production

Evaluation of graft combinations in solanaceous vegetables

The grafting experiment evaluated the compatibility and early performance of different brinjal–tomato and brinjal–brinjal graft combinations, using the wedge grafting method under varying healing environments. Grafting success was assessed at 30 days after grafting (30 DAG) through survivability rate, graft shoot length, graft union thickness, stem thickness, and healing condition. All the grafts were healed under protected conditions (in naturally ventilated polyhouse with or without transparent plastic box) (Fig. 14). Wedge grafting in brinjal demonstrated high success across interspecific (brinjal–tomato) and intraspecific (brinjal–brinjal) combinations, with survivability at 30 days after grafting (DAG) ranging from 66.67 to 100%. Among brinjal + tomato grafts, survivability ranged from 80.0 to 100%, with 100% success recorded in combinations involving Dweep Brinjal 2 grafted with Arka Rakshak, Arka Samrat, and tomato line TOVBRES-1. Brinjal + brinjal grafts showed survivability of 66.67 to 100%, with maximum success (100%) observed in Dweep Brinjal 2 + Arka Anand and Dweep Brinjal 2 + Arka.Avinash combinations. Graft shoot length at 30 DAG ranged from 14.7 to 67.17 cm in brinjal–tomato grafts, while brinjal-brinjal grafts exhibited higher vigour, recording shoot lengths up to 77.73 cm. Graft union thickness in brinjal–tomato combinations ranged from 3.25 to 6.82 mm, whereas brinjal–brinjal grafts recorded higher thickness values (3.47 to 14.75 mm), indicating better structural development. Open healing conditions under naturally ventilated polyhouse (NVP) supported improved graft growth and union thickness, while controlled plastic box condition ensured satisfactory survivability. Dweep Brinjal 2 may prove a consistent rootstock.

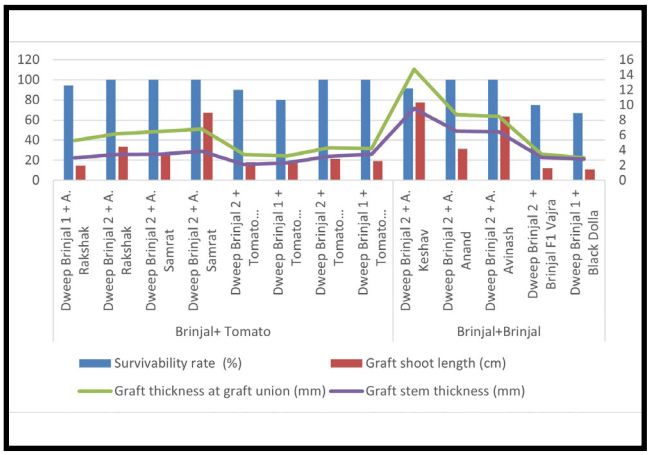


Fig. 14 Performance of various graft combinations (30 DAG)

Germination in Surinam cherry as influenced by coloured shade net conditions

Surinam cherry is an exotic tropical fruit species that grows well under Andaman Island conditions. A study was conducted to study the effect of different coloured shade net conditions on germination and seedling parameters. Weekly observations of germination starting from two weeks onwards have been presented in Fig. 15. Non-significant variations were recorded

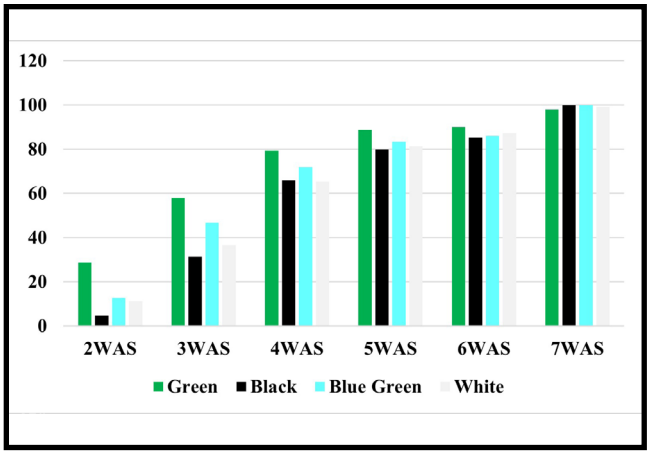


Fig. 15 Seed germination (%) in Surinam Cherry in differently coloured shade nets

in seedling growth parameters among different treatments except in case of number of primary roots.

In case of photosynthetic pigments (Fig. 16), significantly highest total chlorophyll content was observed in seedlings from black shade net house condition, while the lowest was recorded in those from blue green shade net condition. Variations were also noticed in leaf epicuticular wax content, which was found to be the highest in seedling leaves from white shade net condition.

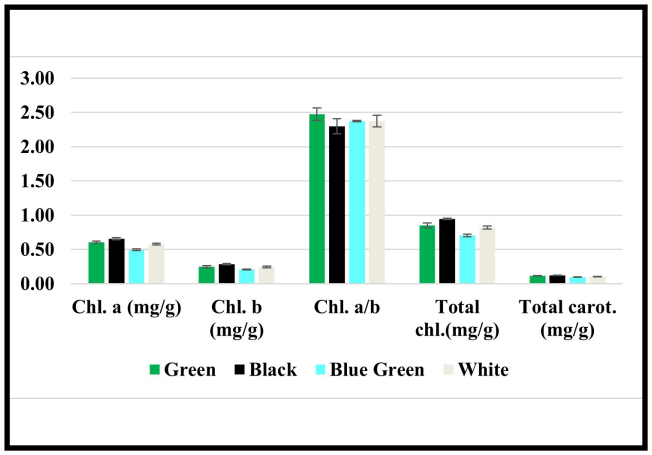


Fig. 16 Photosynthetic pigments in Surinam Cherry in differently coloured shade nets

Bunch management practices in Korangi banana

Banana occupies largest area under fruit crops in the Andaman and Nicobar Islands and local varieties are preferred in most of the islands. Korangi is a local variety of banana, which is being promoted for its superior quality fruits. To improve the productivity of this variety, a study with bunch management practices was conducted. Operations such as denavelling and bunch feeding were found to improve the bunch weight significantly. Adoption of these practices would help in maximizing profits from the cultivation of Korangi banana in the islands.

Growth parameters of Inter-specific grafts of Garcinia species

Inter-specific grafts of different *Garcinia* species prepared in the previous year and maintained in potted conditions were observed for their growth characteristics. After one year of planting, maximum plant height (105.73 cm) and number of branches (17) were recorded in *G. kydia* grafted on *G. dhanikhariensis*, while maximum collar thickness (6.93 cm) and mean canopy spread (97.40 cm) were recorded in *G. gummi-gutta* grafted on *G. dhanikhariensis* rootstock.

Effect of nut position on development of coconut haustorium

Coconut is a major crop in the Andaman as well as Nicobar group of islands. However, limited value addition efforts have been made for increasing the profits of the coconut farmers. In order to explore the potential of processing coconut for haustorium production as a component of agro-ecotourism, a study was conducted using Andaman Ordinary Tall variety without any substrate. Of the three nut positions studied viz. vertical, horizontal and inverted, the highest percentage of haustorium development was observed in the horizontal nut position (68.3%), while it was the lowest in case of vertically placed nuts (50.0%). Horizontal placement was also found to support development of haustorium as the highest mean weight of 127.5 g per nut was obtained in this treatment, while it was 104.4 g in inverted and 84.6 g in vertical placement. Hence, horizontal placement of nuts was advocated for the purpose of haustorium production.

Evaluation of cinnamon air layers and seedlings as an intercrop in arecanut

True cinnamon is a tree spice that has good scope for area expansion in the Andaman Islands. Seedlings are commonly used as a planting material in cinnamon; however, considering the vast variability present in the progenies, vegetative propagation of improved varieties is desirable especially for obtaining uniform quality raw material required for pharmaceutical industries and export markets. In order to identify suitable variety which could be grown under arecanut as intercrop, the present study was conducted wherein performance of seedlings was compared with air layered plants of five improved varieties. All the air layered plants had higher fresh leaf yield, highest being in Yercaud-1 (4.4 kg/plant), while seedlings could yield 0.79 kg/ plant. Dry recovery of leaves ranged between 45.3% to 54.4%, and highest dry leaf yield of 2.16 kg/

plant was observed in Yercaud-1. Leaf oil content varied between 1.7% (Local seedlings) to 2.57% (Nithyasree); while leaf oleoresin content varied between 11.83% (Yercaud-1) and 15.96% (Konkan Tejpatta). In case of dry bark, yield varied between 28.98 g/plant (Konkan Tejpatta) and 168.29 g/plant (Yercaud-1). Seedling derived plants showed the highest dry recovery (43.77%), which was statistically on par with Navasree (40.72%) and Yercaud-1 (38.73%). Bark oleoresin content was the highest (14.08%) in Konkan Tej, which remained on par with Konkan Tejpatta (12.90%) and seedlings (12.01%). Considering the high leaf oil yield (68.7 L/ha) and dry bark yield (230.89 kg/ha), variety Yercaud-1 was recommended for growing as an intercrop in the arecanut plantations of Andaman Islands.

Agro-techniques standardization in Medicinal Wild Cumin

Aranya Jeeraka (*Centratherum anthelminticum*) is an important medicinal plant, raw material of which is largely sourced from the wild as there is regular demand. Effect of spacing, manuring and their interaction effects were studied in a factorial experiment. Data suggested that adoption of different spacing *i.e.* 40 cm × 40 cm, 40 cm × 30 cm and 40 cm × 60 cm had significant influence on flower related parameters such as flower length, number of mature seeds per flower, weight of mature seeds per flower and weight of immature seeds per flower; while it did not influence the number of immature seeds per flower. In case of manuring also, similar results were observed in which except for weight of immature seeds per flower, all the flower parameters were influenced. In case of interaction effects, all the aforesaid parameters were significantly influenced. Influence of both the factors and their interaction was also studied on seed parameters. Results suggested that seed thickness and weight of 100 seeds were highly significantly influenced by spacing but remained unaffected by the manuring treatments. Interestingly, seed length was influenced due to the manuring treatments but not due to spacing adopted. In case of spacing × manuring interaction, weight of 100 seeds remained unaffected, while the seed length and seed thickness were affected significantly.

Protected cultivation: a potential way of cultivating woody pepper

Woody pepper (*Piper pendulispicum*) is a recently reported new species from the islands. Studies have suggested its potential as a novel spice crop for the warm and humid island conditions. However, the species is highly sensitive to moisture stress and any exposure to water-logging results into foot rot disease and death of vines. In order to study the performance of this crop under various growing conditions, vines were grown over arecanut and jamun as support trees. Also, vines were also trailed over arches inside the shade net house provided with UV sheet roofing. The facility of drip irrigation has been made to facilitate provision of water in appropriate quantities and avoid damage due to foot rot pathogen. The growth parameters of the plants recorded at different period of times, revealed protected cultivation as a potential way of growing this new spice crop.

Air Layering Bag

Air layering has been regarded an important multiplication technique for woody plants. It is specialized in nature and thus requires trained personnel for realizing benefits on large scale. In the recent past, urban dwellers and amateur enthusiasts are showing interest in the gardening operations and nursery techniques. In order to provide a simplified method of layering, a ready-to-use Air Layering Bag was designed to make the process more user-friendly. This could be used by anyone with minimal guidance. This innovation is a promising one for the propagation of perennial tree species, which are traditionally difficult to root using conventional cutting methods. It could be helpful for various stakeholders in multiplication of fruit trees, spices, and ornamental plants that are traditionally propagated by air layering technique. The Air Layering Bag has been registered with the Indian Patent Office as an industrial design (401604-001 granted on 15/09/2025).

Use of TMT bars for making low cost shade net house

The islands are characterized by heavy rainfall spread across several months. In order to grow short duration crops such as vegetables, herbs and for raising nursery, use of shade net house is desirable.

However, the inputs cost of different materials is quite high under the island condition and hence, exploring low-cost options is desirable. Use of wooden poles and bamboos may result in quicker decomposition of the material due to rainfall or termite infestation during the dry periods. In order to tackle this issue, low-cost structures were constructed using TMT bars as the prime material instead of GI pipes. The bars were welded as per design and fixed in the ground using a standard concrete mixture. These structures, being flexible, remained undamaged due to high velocity winds during the observation period of two years. This change of material could not only reduce the overall cost of the structures but also reduce the maintenance required for wooden poles/ bamboos.

Initiatives in agro-eco tourism

In order to promote agro-eco tourism in the islands, the Institute has taken initiatives by developing models- Dweep Agro-Eco Walk at the Horticulture Research Farm, Sippighat and Garacharma farm with the theme of Tropical Agriculture Education. The model at Sippighat has plantation crops as the major component in which visitors can see cinnamon processing unit, water harvesting models, nursery, production blocks of tropical spices and flowers, plantation crops-based cropping systems, World Coconut Germplasm Centre, selfie points, mangrove view point, etc. At the Garacharma farm, visiting points include Dr. A.P.J. Abdul Kalam Dweep AyurVatika, coloured shade net houses, ornamental fish unit, fish spa, soil and water harvesting structures, Nakshatra Garden and Horticultural Plants Propagation Unit. Sales counters have also been created for sale of various farm produce to the visitors at both the sites.

DIVISION OF ANIMAL SCIENCE

4.3 Animal Science

Impact of housing on animal well-being

Effect of housing systems on haematological, endocrinological and stressor profiles in goats under humid tropical island ecosystem

A study was conducted to assess the influence of housing systems on haematological, biochemical, hormonal, oxidative stress, and productive traits of Andaman local goats under the humid tropical conditions of the Andaman and Nicobar Islands. Thirty-two goats (16 males and 16 females) were reared from birth to 12 months in two housing systems: a newly constructed, well-ventilated shed and an old, poorly ventilated shed. Although external temperature–humidity index (THI) was comparable, internal THI was significantly lower in the new shed (76.91 ± 0.57) than in the old shed (80.39 ± 0.47). Goats housed in the new shed showed significantly ($P < 0.05$) higher body weight, growth rate, reproductive performance, scrotal traits, and testosterone levels. Improved haematological indices (RBC: 12.69 ± 0.65 vs 11.37 ± 0.75 × 10^6/µL;Hb: 12.95 ± 0.66vs 11.59 ± 0.77 g/dL, PCV: 38.84 ± 1.98 vs 34.78 ± 2.31 %, MCV: 64.74 ± 3.30 vs 57.97 ± 3.84fL, respectively for new shed vs old shed, hereafter) were observed in the new shed, whereas elevated ESR (2.04 ± 0.07 vs 2.17 ± 0.08mm/hr) and WBC (10.84 ± 0.57 vs 12.97 ± 1.17×10^3/µL) counts in the old shed indicated stress. Goats in the old shed exhibited higher rectal temperature (39.03 ± 0.12 vs 39.60 ± 0.12°C), pulse (99.50 ± 2.10 vs 107.17 ± 1.75 bpm), respiration rate (27.14 ± 0.48 vs 31.33 ± 1.10 bpm), cortisol (23.74 ± 0.64 vs 34.42 ± 0.74ng/mL) and prolactin (6.38 ± 0.33 vs 6.62 ± 0.42ng/mL)levels, along with reduced thyroid hormones (TSH: 0.53 ± 0.03 vs 0.72 ± 0.01µIU/mL; T3: 2.44 ± 0.05 vs 2.30 ± 0.07pg/mL; T4: 7.01 ± 0.01 vs 6.40 ± 0.09 ng/dL) and impaired oxidative balance (TAC: 2.21 ± 0.12 vs 1.11 ± 0.08µM; TBARS: 3.20 ± 0.01 vs 4.00 ± 0.05µM). Biochemical profiles indicated better metabolic status in the new shed, with higher glucose (80.36 ± 3.23 vs 76.15 ± 1.54 mg/dL), protein (6.30 ± 0.12 vs 6.29 ± 0.12 g/dL), and lipid (119.76 ± 1.95 vs 112.36 ± 1.16 mg/dL) levels and lower hepatic (AST: 133.77 ± 1.38 vs 147.62 ± 2.70 IU/L; ALT: 30.81 ± 0.45 vs 40.68 ± 1.10 IU/L) and renal (creatinine: 0.76 ± 0.01 vs 0.83 ± 0.01 mg/dL; BUN: 21.77 ± 0.84 vs 23.53 ± 1.12 mg/dL) stress markers. Correlation analysis revealed negative associations between THI and productive, reproductive, haematological, hormonal, and milk quality traits, particularly under poor housing conditions. The study demonstrates that improved housing design effectively mitigates heat stress and enhances goat health and productivity in humid island ecosystems.

Effect of Housing Models on Heat Stress Mitigation and Performance of Dairy Cattle in Humid Tropical Islands

A 12-month comparative study was conducted at the Cattle and Buffalo Farm of ICAR–CIARI to evaluate the effect of housing models on heat stress mitigation, productivity, and physiological performance of crossbred dairy cattle under humid tropical island conditions. Twenty-four cattle were equally allocated to two housing systems[calves: 1-6 months; n=6, growing calves: 7-12 months; n=6, heifers: 13-24 months; n=6 and adult lactating animals: > 24 months; n=6]: a modern shed equipped with fan-assisted ventilation, rubber-matted flooring, and automated waterers, and a traditional shed with natural ventilation and concrete flooring. Macro- and micro-environmental temperature–humidity index (THI), physiological responses, haematological and biochemical profiles, hormonal and oxidative stress markers, reproductive traits, and milk yield were recorded. Cattle housed in the modern shed exhibited significantly ($P < 0.05$) improved productive and reproductive performance, including higher average daily milk yield (5.23 vs. 3.91 kg/day), enhanced calf growth rate (463.15 vs. 389.95 g/month), and earlier attainment of puberty (473.60 vs. 527.80 days). Improved health status was evident from higher haemoglobin levels (11.08 vs. 9.53 g/dL), lower oxidative stress (TBARS: 1.74 vs. 2.33 nmol/mL), and reduced cortisol concentrations (20.94 vs. 25.54 ng/mL). Microclimatic THI was significantly lower in the modern shed (77.93 vs. 80.63), indicating improved thermal comfort. The study demonstrates that scientifically designed housing systems effectively mitigate heat stress and enhance productivity,

reproductive efficiency, and welfare of dairy cattle under humid tropical island ecosystems.

Reproductive biology and Semenology

Non-flow sorting of X and Y chromosome-bearing spermatozoa

The study aimed to enable controlled manipulation of offspring sex, with implications for improving livestock productivity. A chemical-based sperm sorting approach was evaluated for enrichment of Y-chromosome-bearing spermatozoa in rabbit and pig models. Artificial insemination with sex-sorted semen resulted in a clear male bias in offspring. In rabbits, Y-enriched semen produced 66% male bunnies compared to the expected 1:1 sex ratio in controls, while in pigs, treated semen yielded 69% male piglets. These results demonstrate the feasibility, cross-species applicability, and proof-of-concept of a non–flow-cytometry-based sperm sexing approach in livestock.In parallel, a probe-based in vitro assay was developed to assess enrichment of X- or Y-bearing spermatozoa following sorting. A biotinylated DNA probe was developed and validated using agarose gel electrophoresis and dot blot assays (Fig. 17). A chromogenic in situ hybridization (CISH) protocol was standardized, enabling direct visualization of Y-chromosome-bearing spermatozoa using NBT/BCIP chromogen deposition. The assay provides a cost-effective and scalable method for evaluating sex-sorted semen, with potential adaptation to large livestock species such as cattle.

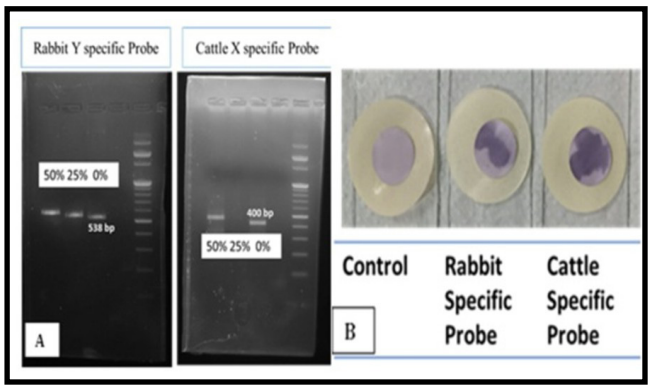


Fig. 17 Validation of rabbit- and cattle-specific biotinylated DNA probes by agarose gel electrophoresis and dot blot assay. Reduced migration of biotinylated probes on agarose gels confirms successful biotin incorporation (A), while a deep purple signal in the dot blot assay indicates effective probe hybridization (B).

This study also developed a rapid, non-invasive duplex PCR method for accurate sex determination in newborn rabbits without DNA extraction, using epithelial cells collected by an adhesive tape method. The assay employs modified alkali lysis followed by single-tube amplification of a Y-specific marker and an internal control, achieving 100-fold ultra-high sensitivity and 100% accuracy in day-old kits (Fig. 18).

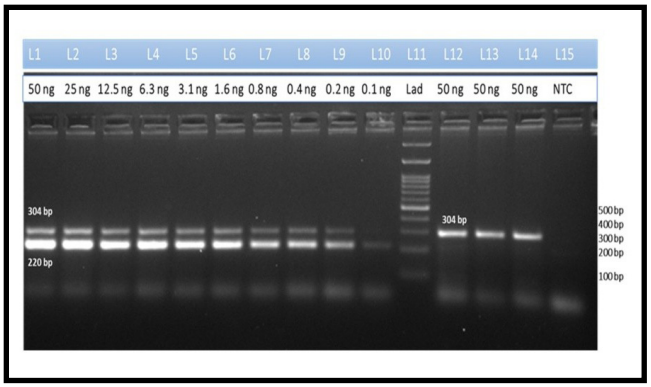


Fig. 18 Sensitivity and Specificity of Developed Assay. Male DNA serial dilution (50–0.1 ng, L1–10) showing sensitivity; L11 = ladder; L12–13 = female DNA (specificity); L14 = NTC

Comparative evaluation of semen extenders on liquid semen preservation quality of the Andaman local pig

The present study evaluated the efficacy of different semen extenders on preservation quality and fertility potential of liquid semen in Andaman local pigs. Six healthy, sexually mature boars (25–30 months) maintained under standard management practices at ICAR–CIARI were used. Semen samples were collected during the dry (January–March) and rainy (July–September) seasons and assessed for physical and microscopic parameters.Gel-free ejaculates were diluted (3×10^9 spermatozoa/80 mL) using IMV PRIMXcell™, Modified Beltsville Thawing Solution (BTS-M), and Novel Boar Semen Extender (NBSE) developed by ICAR–CCARI, Goa (Indian Patent No. 355114). Diluted semen was stored at 16 °C and evaluated at 12-h intervals up to 240 h for sperm motility, viability, total sperm abnormalities, and acrosomal integrity.All extenders maintained acceptable semen quality up to 240 h; however, NBSE-diluted semen showed

superior performance with higher sperm motility (45.58 ± 2.26%), viability (65.91 ± 1.36%), and acrosomal integrity (69.66 ± 3.70%) compared to the other extenders.

Reproductive resilience of the indigenous Andaman localpig: Seasonal dynamics of semen quality and seminal plasma biochemistry

The study assessed the effect of seasonal variation on semen quality, seminal plasma biochemistry, oxidative stress markers, sperm morphometry, and in vivo fertility performance of Andaman local pigs reared under a humid tropical island ecosystem. Six healthy breeding boars (25–30 months) maintained under uniform management were used, and a total of 288 ejaculates were collected during the rainy (July–September) and dry (January–March) seasons.Fresh semen was evaluated for physical, microscopic, and morphological traits, while seminal plasma was analyzed for biochemical and oxidative stress parameters. No significant seasonal differences ($P > 0.05$) were observed in ejaculate volume (279.20 ± 11.23 mL), sperm concentration (247.84 ± 10.60 × 10^6/mL), progressive motility (89.48 ± 0.32%), viability (95.81 ± 0.25%), acrosomal integrity (95.11 ± 0.34%), or plasma membrane integrity (84.15 ± 0.36%). Seminal plasma constituents, including glucose, cholesterol, triglycerides, total protein, albumin, and antioxidant indices (TAC and MDA), remained comparable between seasons. Correlation analysis revealed mild negative associations between ambient temperature and sperm concentration, acrosomal integrity, and membrane stability, indicating adaptive physiological regulation. Sperm morphometry showed a mean head length of 8.54 µm and total sperm length of 53.88 µm. Fertility evaluation recorded a 75% farrowing rate and an average litter size of 7.6–7.8 piglets, with no seasonal variation. Overall, Andaman local boars exhibited strong reproductive resilience, antioxidant stability, and thermal adaptability, maintaining consistent semen quality and fertility under humid tropical conditions.

Spermatogenomics

Exploring the transcript variants and expression profile of germ line markers in goats

Primordial germ cells (PGCs), which give rise to germ cells in the gonads, are characterized by the expression of germline markers such as Vasa and Dazl. Molecular characterization of these markers in goats provides insights into germ cell specification and differentiation and supports future germ cell manipulation strategies. To characterize goat Vasa transcripts, total RNA was isolated from testis tissue, followed by cDNA synthesis and PCR amplification. The amplified 2.462 kb product was cloned into the pJET1.2/blunt vector, transformed into E. coli DH5α, and recombinant clones were confirmed by colony PCR. Plasmids from positive clones were sequenced using Sanger sequencing.Sequence analysis revealed seven Vasa splice variants of 2190, 2112, 2040, 2010, 1983, 1977, and 1953 bp, arising from partial or complete exon skipping. Additionally, 3′ RACE analysis identified six splice variants of 41, 211, 222, 233, 239, and 246 bp, reflecting alternative transcription termination sites.

Reproductive biomarkers

Reproductive efficiency in goats

Understanding molecular determinants of fecundity is critical for improving reproductive efficiency and genetic gain in goats. This study was conducted with an objective to identify serum protein biomarkers and interaction networks associated with divergent fecundity in goats. Six reproductive and regulatory proteins were profiled using ELISA and network analysis. IGF1R and ERBB2 were significantly elevated in low-fecundity goats ($p < 0.05$). Distinct correlation patterns, highlighted by a central IGF1R–ERBB2 axis and novel associations involving GDF9, SETDB2, and MAP3K19, revealed conserved signaling pathways and previously unreported links, suggesting promising biomarkers for improving reproductive efficiency in goats. Further association of genotypes with expression data revealed that higher IGF1R protein expression in individuals with a mutant genotype (Fig. 19).

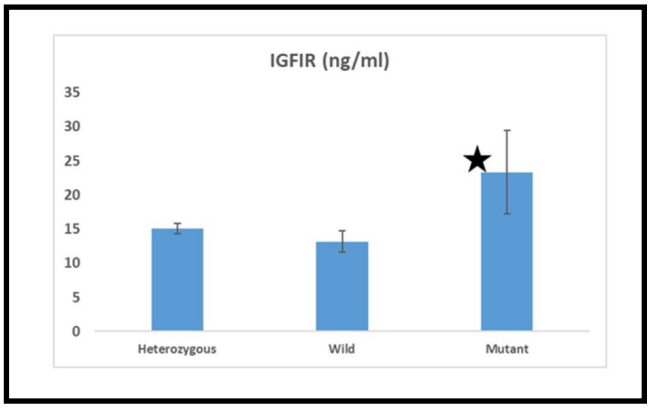


Fig. 19 Association between serum IGF1R levels and IGF1R genotypes (data are presented as mean ± SE, with statistical significance set at p < 0.05)

Managemental intervention to mitigate heat stress

Mitigation of heat stress of endemic poultry breeds of Andaman and Nicobar Islands under seasonal and climate change scenarios

Mid-embryonic thermal manipulation by increasing the incubation temperature by 1**°C above normal (37.5 °C to 38.5 °C) from day 13 to day 18 of incubation** improved the post hatching production performance as indicated in Table while exposing to thermal challenge with temperatures of 33 to 38 °C, relative humidity maintained at 85–88% and Thermal Humidity Index of 90 to 91, well above the comfort threshold (<70)

Table. 9 Effect of mid-embryonic thermal manipulation on post-hatch production performance under thermal simulated conditions

Parameters	Body weight (gm)	
Nicobari fowl		
Mid embryonic Incubation temp	37.5°C	38.5°C
Brooding period^{NS}	80.44±14.44	87.12±9.56
Growing period*	710.5±45.43^{b}	840.71±32.85^{a}
Age at Sexual Maturity*	1117.6±26.66^{b}	1217.0±36.66^{a}
Hen housed egg production (3 months)	34.15±5.86^{b}	41.25 ±6.45^{a}
Mortality percentage at laying stage	92%	91%
Vanaraja birds		
Brooding period^{NS}	91.8±14.52	96.67
Growing period*	877.7±41.32^{b}	1299.5±38.4^{a}
Age at Sexual Maturity*	1313.6±56.12^{b}	1417.2±26.66^{a}
Hen housed egg production (3 months)^{NS}	32.62±2.5	37.25 ±6.45
Mortality percentage at laying stage	97%	97%

* p<0.05

Nutritional Intervention

Nutrient intake and digestibility of the Andamani pig and Nicobari Pigs in intensive system of rearing

Considering the distinct island climate and breed-specific nutritional requirements, feeding trials were conducted to evaluate nutrient intake, digestibility, and growth performance in Andamani pigs and Nicobari pigs under intensive rearing for 1 year. In the first trial on Andamani pigs (post weaning, at 30 days), three treatment groups were evaluated: T1 (control (n=6), restricted feeding for both sexes), T2 (male pigs (n=6), ad libitum feeding), and T3 (female pigs(n=6), ad libitum feeding). Post-weaning, pigs were fed stage-specific diets comprising creep (CP: 22%), grower (CP: 18.5%), and finisher (CP: 14.95%) rations. In a second feeding trial, protein level optimization was evaluated in both Andamani and Nicobari pigs over a 90-day growing period starting from the 5thweek of age, using four dietary treatments: T1 (CP: 18.5%), T2 (CP: 20%), T3 (CP: 22%), and T4 (CP: 24%). Overall, restricted feeding

proved superior to ad libitum feeding in terms of productivity *(i.e.* body weight gain T1-50.43 kg, T2-48.48 kg and T3-47.55kg) and economics of ration were T1-₹58.94/kg, T2 ration cost ₹56.58/ kg and T3 ration cost was ₹56.21/kg.

Performance of Common Fodders and Nutrient Digestibility in Farm Animals under Island Conditions

Fodder constitutes the major component of daily rations in livestock, accounting for over 60% of intake in medium-yielding animals; however, feed and fodder availability remains a major constraint to livestock production in island ecosystems. To address this, fodder crops were established on 5,000 m² of land, with 3,750 m² planted with fodder trees and the remaining area with high-yielding grasses. Proximate analysis of tree fodders showed the highest dry matter content in *Gmelina arborea* (78.14%), followed by *Bridelia tomentosa* (58.29%), *Albizia lebbeck* (33.98%), *Leucaena leucocephala* (28.16%), and *Sesbania grandiflora* (24.20%). Crude protein content was highest in Sesbania (24.93%), followed by Leucaena(22.82), Gmelina (20.11), Albizia (16.74), and Bridelia(16.22). Fodder yield (t/ha) was highest in Sesbania (72 ton), followed by Leucaena(9.45 ton), Gmelina (3.38), Bridelia(1.69), and Albizia(0.65 ton). In grasses, dry matter content ranged from 19.98% to 34.25%, while total yield was 472.45 T/ha/Yr for Super Napier, 334.33T/ha/Yr for Hybrid napier (CO-6), 332.46T/ha/Yr for BN-CO-5, 317.01T/ha/Yr for BN-CO-5, 292.97T/ha/Yr for DHN-6 and 260.38T/ha/Yr for Guinea grass.

Feeding trials were conducted to evaluate nutrient utilization of selected fodders. Cattle of 4-6 years of age were grouped into two with iso-milk yield with 3 animals in each group for three months duration.Two treatments were compared: T1 (concentrate + Super Napier green fodder + rice straw) and T2 (concentrate + Super Napier only). Animals in T2 showed superior performance with higher feed intake, kg (9.19 ± 2.36vs 8.67 ± 2.13), protein intake, g (1.09 ± 0.17 vs 0.83 ± 0.1), and improved digestibility of dry matter, % (51.21 ± 0.12 vs 45.68 ± 0.11), crude protein, % (68.11 ± 0.14 vs 62.41 ± 0.14), ether extract, % (82.41 ± 0.12 vs 62.41 ± 0.14), and carbohydrates, % (54.61 ± 0.10 vs 40.44 ± 0.11). In goats, to evaluate Sesbania and super napier grasses for nutrient utilization and digestibility a one-month trial was conducted. Treatment-1 (n=7) received concentrate (300g) and Super Napier (*ad-lib)*, while Treatment-2 (n=6) received concentrate (300g) and *Leucaena* leaves (*ad-lib)*. Although dry matter intake was similar between the groups (1kg for T1 and 1.1 kg for T-2), T2 showed higher intake of protein (267g vs 203g) and fat (52g vs 28g), while crude fiber intake was higher in T-1 (613g) than T-2 (258g). Digestibility of dry matter, crude protein, and crude fiber was superior in T-2 than T-1, *i.e.* 61.43% vs 59.70%, 75.61% vs 65.31% and 61.99% vs 54.87%, respectively.

Microbial interference therapy to mitigate heat stress

Probiotic Therapy

A probiotic formulation comprising *Bacillus subtilis* (1790; 10 × 10^8 CFU/g feed), *Saccharomyces cerevisiae* (3156; 7 × 10^9 CFU/L water), and *Lactobacillus rhamnosus* (1423; 50 × 10^9 CFU/L water) was evaluated in Nicobari fowl and Vanaraja birdsdual-purpose birds. A completely randomized design with eight treatments was followed in two-week-old birds subjected to heat stress conditions (36.96 ˚C, 74.40% RH, THI 91.3) for 5 h/day with adequate ventilation. At sexual maturity (16 weeks), birds supplemented with the formulated probiotic, antibiotic, and commercial probiotic showed a significant 23% increase in adult body weight compared to birds receiving plain water, irrespective of breed. Under thermal stress, probiotic-supplemented Nicobari fowl exhibited superior physiological resilience, recording 20% higher serum protein and 6% lower triglycerides than dual-purpose birds and other supplemented groups. Probiotic supplementation also protected liver function during heat stress, reflected by a 14% higher serum ALT level across breeds. Antibiotic sensitivity and resistance of commensal *E. coli* were assessed against β-lactam antibiotics and inhibitors of protein, DNA synthesis, and metabolic pathways. Probiotic supplementation resulted in the highest zone of inhibition (26.26 mm), antibiotic sensitivity (93.54%), and lowest resistance (6.33%), whereas

antibiotic supplementation showed the highest resistance (15%). Additionally, mid-embryonic thermal manipulation involving a 1 °C temperature increment during incubation enhanced post-hatch body weight under temperatures beyond the comfort zone (25–28 °C); however, embryonic manipulation alone did not sustain thermal tolerance during the laying period. Combined mid-embryonic thermal manipulation and probiotic supplementation from the growing stage significantly improved pullet growth under thermal stress and reduced antibiotic resistance by enhancing bacterial sensitivity.

Productivity of native germplasm

Andamani pig

During the reporting year, a total of 25 farrowings and 185 piglets were recorded. Key parameters included a litter size at birth of 7.33 ± 0.18, litter weight at birth of 11.03 ± 0.48 kg, and litter size at weaning of 6.83 ± 0.19. The average litter size at birth per sow was 6.65 ± 0.34, the average litter weight at birth per sow was 12.09 ± 0.98 kg, the average litter size at weaning per sow was 6.57 ± 0.67, and the average litter weight at weaning per sow was 44.12 ± 2.09 kg. Pre-weaning mortality was 7.003%, and post-weaning mortality was 0.18%.

Andamani goat

Three clusters were established in South Andaman and Middle & North Andaman districts; during the reporting period, an additional cluster was initiated at Rangat. A total of 291 goat farmers from 39 villages were covered under the existing clusters, and 101 new farmers were registered under the Rangt cluster, collectively covering approximately 5,000 goats. The overall least square mean body weights (kg) at birth, 3, 6, 9, and 12 months of age were 1.50 ± 0.01, 6.10 ± 0.07, 9.58 ± 0.10, 12.98 ± 0.10, and 16.13 ± 0.07, respectively. During the period, 902 kids were born, resulting in an overall population growth of 72.29%. Body weights at 6, 9, and 12 months exhibited medium to high heritability, with 6-month body weight showing superior genetic correlation with other growth traits. Based on this, selection for improved productivity was recommended at 6 months of age, and male kids were selected using 6-month body weight and 60-day milk yield of the dam. The selection differential was 0.68 kg for body weight and 55.04 mL for 60-day milk yield over the population mean, with selection intensities of 1.39 and 1.43, respectively. Retrospective analysis (2016–2025) indicated the highest body weight gain from 3 months onward, which may partly reflect continued dependence of kids on dam's milk up to 3 months of age (Fig. 20).

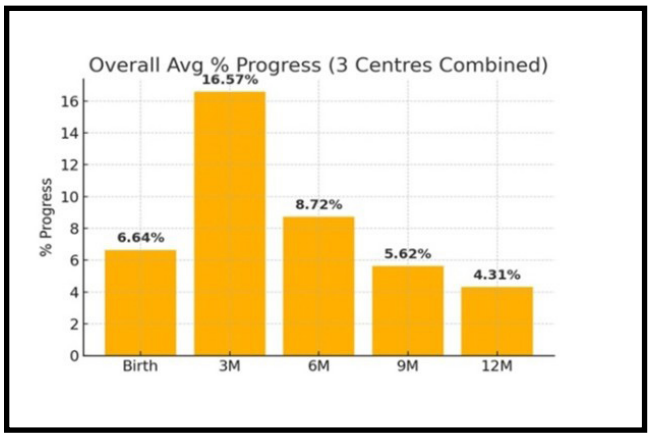


Fig. 20 Overall average % progress from 2016-2025 across the centres

Validation of ethnoveterinary knowledge and development of herbal products

Scientific validation of ethno-veterinary medicinal knowledge and herbal product development

Ethno-medicinal formulations and associated medicinal plants used by the Nicobarese tribal farming community were documented from six villages of Car Nicobar. The recorded formulations are traditionally used to treat ailments including wounds, fever, stomach ache, eye infections, vomiting, diarrhoea, cough, acidity, fractures, snakebite, stomach pain, and urinary tract infections (Table 10).

Table 10. List of indigenous plants used by Nicobarese tribes to cure various ailments

Sl.No	Local Nicobari name	Scientific name
1	Toku-Roto-Rong	*Tabernaemontana alternifolia L.*
2	To-Ngavo-Rong	*Clerodendrum japonicum (Thunb.) Sweet (1)*
3	Amara	*Spondias pinnata (L.f.) Kurz*
4	Sa-Nuk	*Ganophyllumfalcatum Blume*
5	Ta-Roy-Tachoich/Hane-Mo-Miso-Ko	*Premna serratifolia*
6	Milum-AN	*Senna uniflora*
7	Pan-Rapo	*Jasminum* sp
8	Mal-Va-Rov	*Abutilon hirtum*
9	Tusli	*Ocimum tenuiflorum L.*
10	Koffe	*Annona muricata L*
11	Lanan Kap	*Ipomea pes-caprae*
12	Linpop	*Physalis angulata*
13	Neem	*Azadirachta indica*
14	Li-Rong	*Morindacitirfolia*
15	Kavap	*Heliotropium arboreum*
16	Rey Lurong	*Moringa roots*
17	Ampili	*Annona squamosa L.*
18	Pu-Hui	*Trichosanthes tricuspidatalour*
19	Kasin-Rih	*Urena lobata L. subsp. lobata*
20	Katahul	*Datura metel*
21	Kin-Sa	*Glochidion*
22	Mupeto	*Euphorbia pallens Dillwyn*
23	Sa-Ma-Leh	*Ricinus communis L*

Evaluation of polyherbal acaricide

An *in vivo* study was conducted in two villages to evaluate the efficacy of a polyherbal product against *Rhipicephalus* tick infestation in livestock. A total of 53 goats (<1 year old), naturally infested with more than 50 adult ticks, were divided into three experimental groups (Table 3). The polyherbal acaricide was applied twice at a 10-day interval, resulting in complete tick detachment after the second application. Body weights of treated and untreated goats were recorded weekly over a 60-day period to assess the impact of tick infestation on growth. Mean body weight gain was highest in the positive control group (1.73 kg)and , the treatment (1.73 kg) as compared to control groups (1.17 kg), with corresponding growth rates of 24.85%, 22.08%, and 18.56%, respectively; however, these differences were statistically non-significant ($p < 0.05$) (Table 4).

To assess the effect of the polyherbal treatment on milk production, 21 mid-lactation cattle naturally infested with more than 50 ticks were included in a separate trial. The polyherbal product was applied twice, and no tick infestation was observed after the second application throughout the study period. Although treated animals showed a higher average increase in milk yield, the differences were statistically non-significant ($p < 0.05$) (Table 9), indicating no adverseeffect of the treatment on milk yield under the study conditions.

Monitoring and surveillance of important animal diseases

Foot and Mouth Disease

In the year 2025, no clinical case of FMD was reported from Andaman and Nicobar Islands. As a part of sero-surveillance, a total of 948 cattle sera

samples were screened for the presence of 3rAB3 antibodies by DIVA-ELISA (differentiating infected from vaccinated) test, in which 45 samples were found DIVA positive (4.74%) (Fig. 21). For sero-monitoring of NADCP (6thround),a total of 440 pre-vaccination and post-vaccination sera samples from cattle were analyzed for protective antibody titre. Protective antibody titre (log10 titre ≥ 1.65) for pre-vaccinated samples were 23.63%, 26.13 %, and 27.72 % for serotypes O, A, and Asia 1, respectively. For post-vaccination samples, the protective antibody titre (log10 titer ≥ 1.65) was 65.60 %, 65.14 %, and 64.69 % for serotypes O, A, and Asia 1, respectively.

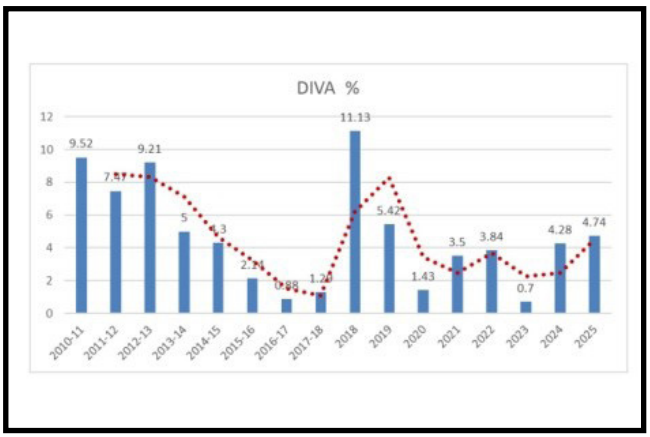


Fig. 21 Year-wise trend of DIVA positivity in bovine sera samples

Bovine brucellosis and PPR

A total of 300 cattle sera samples were screened for the presence of *Brucella abortus* antibodies by Rose Bengal Plate Test. None of the samples was found to be positive. Out of 270 goat sera samples screened for the presence of *peste des petits ruminants virus* antibodies (PPRV), none of the sample was found positive. During the reporting period, two outbreaks of caseous lymphadenitis in goat was reported with an attack rate of 12.03%, and three outbreaks of contagious ecthyma (orf) in goats were reported with an attack rate of 8.91%.

Characterization of pathogen

Corynebacterium pseudotuberculosis in goats

Caseous lymphadenitis (CLA), an infectious disease caused by *Corynebacterium pseudotuberculosis* and primarily affecting goats and sheep, was investigated in the Andaman and Nicobar Islands. A survey revealed a prevalence of 3.75% in South Andaman and 2.19% in North and Middle Andaman,with no cases reported from Nicobar. Affected goats exhibited painless nodular abscesses in the neck, submandibular, thigh, and abdominal regions (Fig. 22), with lymph nodes measuring 2–8 cm and containing creamy white to yellowish, thick pus. Thirteen pus samples were collected, and disease confirmation was achieved through isolation of the organism followed by biochemical and molecular characterization. Gram staining identified the isolates as Gram-positive, facultative intracellular bacteria. Biochemical tests showed all isolates were urease- and catalase-positive, nitrate reduction- and gelatin liquefaction-negative, with variable sugar fermentation patterns. Molecular characterization using five markers (16S rRNA, rpoB, pld, PIP, and Ngr) revealed that all isolates were positive for 16S rRNA, rpoB, and PIP, negative for Ngr, and 11 isolates were positive for pld. Sequence data were generated for 16S rRNA, rpoB, PIP, and pld genes. Biovar assignment based on partial rpoB sequences and NJ phylogenetic analysis (Fig.23) identified the isolates as *C. pseudotuberculosis* biovar *ovis*. The confirmed isolates were further evaluated for antimicrobial resistance against 14 antibiotics, showing variable sensitivity and resistance patterns.

Fig. 22 Gross lesion of caseous lymphadenitis affected goat

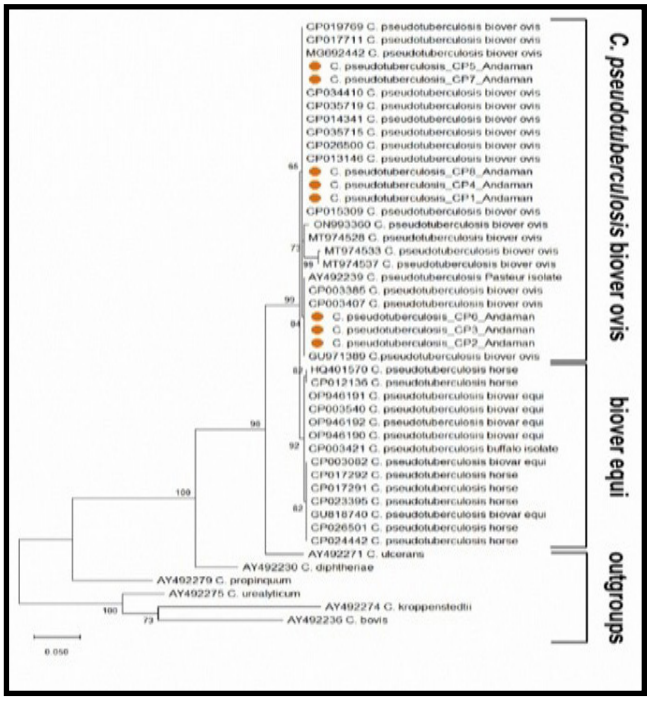


Fig. 23 Biovar assignment of Corynebacterium pseudotuberculosis isolates based on rpoB gene fragments. Phylogenetic tree was constructed by Neighbor Joining (NJ) method using Tamura-Nei model with 1000 bootstrap replications

Superbugs

Prevalence of antimicrobial resistance

A total of 168 samples comprising cow and buffalo milk (50), cow rectal swabs (14), goat rectal swabs (16), pig rectal swabs (16), and poultry cloacal swabs (24) were collected from different locations in South Andaman and processed for bacterial isolation, identification, and molecular confirmation using standard procedures. Overall, 59 *Escherichia coli* and 44 *Staphylococcus* isolates were recovered, including 10 *Staphylococcus aureus* and 34 coagulase-negative staphylococci (CONS). Antimicrobial susceptibility testing was performed using the Kirby–Bauer disc diffusion method as per CLSI guidelines. Resistance among isolates was observed against ampicillin and tetracycline (8.5%), cefotaxime (5.1%), ceftazidime (3.4%), and nalidixic acid, aztreonam, and ceftriaxone (1.7% each). *E. coli* isolates from cow rectal swabs exhibited the highest resistance to ampicillin (30.77%). Phenotypic detection identified extended-spectrum β-lactamase (ESBL) production in six *E. coli* isolates, primarily from goat rectal and poultry cloacal samples. In *S. aureus*, antimicrobial resistance was recorded against cefoxitin and penicillin G (10%), with one isolate presumptively identified as methicillin-resistant *S. aureus* (MRSA) using the cefoxitin disc diffusion assay. Among CONS isolates, the highest resistance was observed against penicillin G (35.3%), followed by cefoxitin (14.7%), erythromycin and tetracycline (11.8%), linezolid (8.8%), and gentamicin (2.9%), with five isolates presumptively identified as methicillin-resistant CONS (MR-CONS).

DIVISION OF FISHERIES SCIENCE

4.4 Fisheries Science

Coastal Ecosystems and Resilience

Augmenting Livelihood Resilience and Knowledge Generation through Coastal Fisheries Information Hub for Nicobarese tribes of Car Nicobar

During the reporting period, extensive scientific assessments were undertaken, including tsunami vulnerability mapping, shoreline erosion and accretion analysis using 32 years of satellite data (1992–2024), sea-level rise scenarios, and climate projections up to 2100 based on SSP pathways. These scientific inputs were synthesised into a Small Island Management Plan (SIMP) emphasising zonation-based risk management, land-use planning, ecosystem restoration, and greenbelt development as nature-based buffer strategies for long-term island resilience. A strong citizen science component enabled local participation in conservation actions, including the protection of sea turtle hatchlings and the retrieval of turtles trapped in ghost fishing nets. Baseline information on marine debris was generated, along with a comprehensive faunal checklist comprising 175 species of marine and inland fauna. Livelihood enhancement formed a core component of the interventions through the establishment of a Coastal Fisheries Information Hub that was inaugurated during the reporting period, supported by fishing inputs such as FRP crafts, GPS devices, outboard engines, distress alert transmitters, and communication systems. These interventions resulted in marked improvements in fishing efficiency, income generation, operational safety, and navigational confidence among the tribal fishers, as evidenced by two national-level success stories through the interventions covered by the National Fisheries Development Board (NFDB), Hyderabad. The active involvement of the Nicobarese tribes underscores the importance of community-led stewardship in managing fragile island ecosystems.

Geospatial Aquaculture

Mapping the Brackish Water Resources of South Andaman for Aquaculture Site Suitability Using a GIS Approach

During the reporting period, the project made substantive progress in characterizing the biophysical environment of South Andaman's tsunami-inundated water bodies and applying a multi-criteria evaluation framework to guide aquaculture development planning. Extensive soil and water quality assessments were conducted across Wandoor, Ograbraj, and other inundated locations, encompassing seasonal variations in pH, electrical conductivity, organic carbon, nitrogen, phosphorus, salinity, dissolved oxygen, and ammonia. The analytical results revealed spatial heterogeneity, with Wandoor exhibiting moderately acidic soils with EC values up to 9.5 dS/m and nutrient-rich profiles, while Ograbraj showed wider variability in soil texture and elevated ammonia concentrations in certain seasons. Seasonal water quality monitoring established the dynamic nature of salinity regimes, transparency, and temperature across sites, forming the empirical foundation for aquaculture suitability classification.Weighted overlay analyses generated spatially explicit suitability maps for Wandoor and Ograbraj, revealing limited pockets of highly suitable land and larger areas categorized as moderately suitable, while environmentally restricted zones were excluded based on CAA and CRZ regulations.Technical assistance on analysis of soil and water reports from Wandoor and Ograbraj was shared with the Department of Fisheries, contributing to policy formulation, environmental compliance screening, and strategic identification of potential aquaculture clusters. A draft guideline on sustainable utilisation of these inundated areas was also submitted to the Department of Fisheries, Andaman and Nicobar Administration, along with field visits to the sites with department officials.

All India Network Project on Mariculture (AINP)

Trials on red seaweeds adopted both rope-net and tube-net (pouch) systems, with the tube-net method demonstrating superior attachment, faster establishment, and more stable early growth. A total of seventy-two rafts were fabricated for seaweed culture, and apart from the operational rafts, thirty rafts were damaged due to cyclone and rainfall-related damage.Growth performance assessments indicated consistent biomass increases over 30- and 60-day intervals for *Gracilaria edulis* and *Acanthoporaspicifera*, with measurable gains recorded across multiple trials. A double recovery protocol was standardised for the simultaneous extraction of agar and a hydrophilic biomass fraction from selected red seaweed species during the reporting period. The newly developed process optimises the utilization of seaweed raw material by enabling the recovery of two valuable components in a single extraction sequence.

Aquatic Parasitology

Development of control & treatment measures for the management of parasitic diseases in freshwater fishes

Peppermint oil, extract of betel leaf and arecanut, an organic salt has been explored for their evaluation of antiparasitic activity against *Piscinoodinium* sp. *Chilodonella* sp. and *Panagrellus redivivus* (nematode model). Test solutions of varying concentrations from 1 to 12% were prepared from a betel leaf + pepper mint oil + organic salt (BPM)- based formulation for conducting LC50 studies and in vivo antiparasitic efficacy studies. Similarly, a test solution of varying concentration from 1 to 12% was prepared from arecanut + pepper mint oil + organic salt (APM) based formulation for conducting LC50 studies and in vivo antiparasitic activity. Broodstocks of *Betta splendens* were conditioned for 1 month, bred, and their fries were reared for a period of 20 to 30 days. Juveniles of size (3.1-3.6 ± 0.2cm) were distributed in a glass tank of capacity 3 litres for acclimatisation. The experiment was conducted in triplicate (CRD) with a total of 4 treatment groups and 1 control (n=10 fish per tank), a total of 150 nos. were used. An infected fish was collected, and the parasite developing stage (tomont) was scraped off using a sterile scalpel under a microscope, and a concentration of 158.1 ± 25.6 (tomonts) was prepared using sterile saline and inoculated into the water of each treatment tank. The water inoculated with tomonts was checked for a period of three days for infection. The test solutions were administered after the onset of parasitic infection upon confirmation using microscopy. Mortality and survival percentage was recorded for a period of 1 week. The impact of the test solution on water quality was also studied simultaneously. The data was analysed using SPSS software version. 26 using the Tukey post hoc test. The 5% APM test solution revealed a survival rate of more than 80% in Betta fish fries artificially infected with *Piscinoodinium* sp. compared to control with less than 30% (Fig 24 & Fig. 25). The 5% BPM test solution revealed a survival rate of more than 70% in Betta fish fries artificially infected with *Piscinoodinium* sp. compared to control with 30% survival. Based upon this result, the APM solution was found to be giving better results compared to the BPM solution, since the latter caused water quality problems and significantly lesser survival compared to APM solution. The APM solution was further explored for anti-nematocidal activity using *Panagrellus redivivus* as a nematode model in *invitro* condition. *Invitro* study shows that the application of 5% solution of APM caused the death of 87% of free-living nematode (*Panagrellus redivivus*) in the water in 1hr post application.

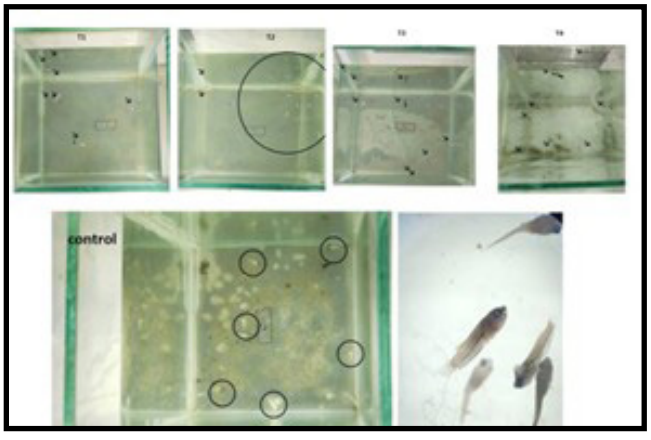


Fig. 24 Arrow and circle showing survival of Betta fish larvae post infection due to Piscinoodonium sp. and application of 5% APM formulation in T1, T2, T3, and T4 and control group circles showing death of Betta fish larvae post infection due to Piscinoodonium sp.

National surveillance program on Aquatic Animal diseases (NSPAAD Phase-II)

Baseline data was collected from 59 freshwater fish farms in the Andaman Islands, which revealed 21 reported disease cases attributed to various infectious and non-infectious conditions, including bacterial, parasitic, fungal, and water quality-related issues. Mainly, bacterial infection from freshwater fishes was predominant. Bacterial pathogens like *Acinetobacter* sp. associated with the death of stinging catfish were isolated and characterized. A case of mass mortality of *Garramullaya* due to *Aeromonas hydrophila* and *A. veronii* infection was also characterized. A case of abdominal dropsy was recorded in *Anabas testudineus*, the causative agent,*Aeromonas veronii* was characterized. Parasitic infection like *Ichthyophthirius multifiliis* was also observed in *Carassius auratus*. Furthermore, 'Report Fish Disease' mobile app was promoted for real-time disease reporting.

Fig. 25 Glimpses of disease cases recorded from different parts of South Andaman viz. abdominal dropsy, nutritional disorder, Aeromonas sp. infection.

Surveillance of Antimicrobial Resistance (AINP-AMR)

As an apart of AMR surveillance in fisheries, a total of 23 ponds were surveyed for fish samples and pond water at South Andaman district. A total of 15 *E. coli*, 23 *Staphylococcus* sp. and 11 *Aeromonas* sp. were recovered from the fish and pond water samples as per standard operating procedure. Antibiotic sensitivity test has been performed for all the isolates using selected antibiotics. Further, extended spectrum Beta lactamases activity was also checked for *E. coli* and *Aeromonas* sp. following phenotypic ABST testing. Awareness was given on the usage of alternatives in comparison to antibiotics in aquaculture to mitigate AMR patterns in animal and human health.

Fig. 26 Awareness programme conducted during world AMR awareness week at Guptapara, South Andaman

Sustainable Aquatic & Agricultural Innovations

High stocking density nursery rearing of Labeorohita spawn and culture of Penaeus vannamei in biofloc system

The efficacy of *Moina micrura* augmentation in a biofloc-based nursery system on the growth, survival, feed utilisation, and carcass composition of *Labeorohita* fry reared was evaluated under three stocking densities (5000, 6000 and 7000 spawn m^{-3}). Significant improvements in growth parameters such as highest fry length (29.7 ± 1.47 mm), weight (212.2 ± 12.5 mg), specific growth rate, and length and weight gain were observed in zoofloc treatments, at lower stocking densities (5000 m^{-3} with *M. micrura)*. were recorded in), However, increasing stocking density resulted in reduced growth and survival across all treatments; the lowest performance was observed in stocking density of 7000 m^{-3}. This improvement is attributed to the superior digestibility, amino acid profile, and enzymatic benefits of *M. micrura* compared to microbial floc. Overall, the study demonstrates that *M. micrura*-enriched zoofloc substantially enhances growth performance, survival, and muscle protein deposition in *L. rohita* fry, particularly at 5000 spawn m^{-3}. Incorporating zooplankton supplementation into biofloc-based nursery systems can significantly improve seed production efficiency in carp hatcheries.

Deciphering the in-vitro bioactive potential of selected seaweed species of Andaman Islands and evaluation of its immunomodulatory effect on fish

Two-way ANOVA and principal component analysis revealed that the seaweed species namely, *Gracilaria edulis*, *Padina tetrastromatica*, and *Halimeda opuntia* exhibited significantly higher bioactive potential within their respective categories based on extensive *in-vitro* analyses. *In-vivo* trials with *Labeorohita* showed that fish fed a diet supplemented with a mixture of these seaweed extracts at 3g/kg feed demonstrated significant improvements in growth performance, hemato-immunological responses, enzyme activity, and survival post-challenge with *Aeromonas hydrophila*. Field trials conducted to validate these results further confirmed that fish fed with the seaweed extract mixture at 3 g/kg feed exhibited significantly enhanced growth and improved hemato-immunological parameters. The bioactive properties of *G. edulis*, *P. tetrastromatica*, and *H. opuntia* underscore their potential as natural immunostimulants making them valuable candidates for fish health management.

Impact assessment of CIARI technology "Impact of GPS usage in marine fishing practices on fishermen income in Car Nicobar"

The impact of Global Positioning System (GPS) technology on fishing productivity and profitability was assessed using data collected from 32 fishermen in Car Nicobar district. Comparative analysis of fishing practices before and after GPS adoption demonstrated substantial improvements in operational efficiency and economic performance. GPS use significantly enhanced navigational capability, enabling fishermen to operate farther from shore (4.7 km to 7.9 km) and at greater depths (133.12 m to 218.75 m). The average number of fishing trips per month increased from 11 to 18, indicating improved time utilization and reduced search effort. Although fishing duration per trip increased marginally, this was offset by greater efficiency and reduced operational inefficiencies. Economically, GPS adoption resulted in marked gains, with monthly income nearly doubling from ₹12,208 to ₹28,826 and net profit increasing almost threefold from ₹8,270 to ₹24,514, despite a slight rise in operational costs, highlighting the strong profitability of GPS-assisted fishing.

Applications of AI and IoT in Agriculture for Smart Farming

A drip irrigation system has been set up, accompanied by soil moisture sensors and the creation of a LoRa wireless network in the Medicinal Plants Garden. The automated drip irrigation system activates only when the soil moisture level drops below a specified threshold and halts when it reaches a higher threshold, thus optimizing water usage and promoting healthy plant growth.The culture of fish and shellfish, particularly in inland fisheries, has gained traction due to the ever-increasing demand for these products. The growth and survival of aquatic products such as fish and shellfish are significantly influenced by the surrounding environment. Among various water parameters, the importance of dissolved oxygen and toxic gases like ammonia is well recognized. Fishermen and fish farmers typically implement appropriate remedial measures to mitigate the stresses caused by these parameters from their optimal range. In this context, aerators or water lifting pumps are employed to enhance the oxygen levels in the water. A Dissolved Oxygen sensor has been installed in the brooder fish pond at Garacharma Farm and is connected to a controller via a WiFi network. The aerator automatically activates when the Dissolved Oxygen level falls below 5 ppm and ceases operation when it reaches the maximum level.Additionally, a mobile application is available for remote monitoring and manual operation when required. Users can download all real-time data from the cloud.

4.5 Regional Station, Minicoy

Fisheries

Exploration of fishery, biology and market potential of tuna resources of Minicoy Islands

Documentation was done on fishery, biology, and market potential of tuna resources of Minicoy Island, Lakshadweep, through integrated socio-economic, biological, and market studies. Comprehensive surveys of fishing households and vessels highlighted the community-managed pole-and-line fishery as a sustainable and low-impact system dominated by skipjack tuna (*Katsuwonus pelamis*), supported by a diverse and seasonally structured live-bait fishery. Biological investigations on skipjack and yellowfin tuna (*Thunnus albacares*) elucidated size structure, feeding ecology, and reproductive biology, revealing ontogenetic dietary shifts, biannual spawning peaks of skipjack, and healthy stock status. Market analysis identified traditional yet efficient marketing channels with value addition through smoked tuna (Masmin), though constrained by limited cold-chain infrastructure. The deployment of Fish Aggregating Devices (FADs) significantly enhanced tuna availability and catch rates, contributing to increased landings and livelihood resilience. Overall, the study generated critical baseline data and management-relevant insights to support sustainable tuna fisheries and community livelihoods in Minicoy Island.

Fig. 27 Fish Aggregating Device (FAD) deployed off Minicoy Island, Lakshadweep

Integrated Farming System (IFS) for enhancing sustainable Livelihood of rural tribal community of Minicoy Islands

Coconut-based Integrated Farming System (IFS) model was successfully developed and demonstrated at the ICAR-CIARI Regional Station, Minicoy, to enhance sustainable livelihood options for the rural tribal community of Lakshadweep. The one-acre model integrated coconut with goats (Konkan Kanyal and local composite), cattle (Kasargodan dwarf), poultry (duck, chicken, quail), aquaculture (pearlspot and IMC), vegetables, tubers, spices, fodder crops, vermicomposting, and bio-fencing, enabling efficient nutrient recycling and resource utilization. The system generated a gross annual income of ₹6.36 lakh with a net return of ₹67,668, a B:C ratio of 1.12, and high energy efficiency (EROI ≈ 13), demonstrating technical feasibility and economic viability under island conditions. Capacity-building programmes and demonstrations conducted across Lakshadweep sensitized more than 300 tribal farmers, facilitating awareness and adoption of climate-resilient, diversified farming practices suited to fragile island ecosystems.

Fig. 28 Integrated Farming System (IFS) model for sustainable livelihood enhancement at ICAR-CIARI Regional Station, Minicoy

Development of Island-based information management system for decision making in agriculture in Laskhadweep Islands

The Dweep Geoportal database features the delineation of all 27 islands of Lakshadweep, encompassing both inhabited and uninhabited islands, depicted through precise geospatial layers.Among these islands, detailed attribute data has been gathered for the 11 inhabited islands. Additionally, the geoportal integrates fisheries-related infrastructure, which is a vital aspect of the Lakshadweep economy. Spatial data layers have been created to illustrate fisheries resources and supporting facilities such as fish markets, fish processing centers, cold storage units, and ice factories. This information aids in fisheries planning, resource management, and the evaluation of infrastructure availability concerning fishing activities and coastal settlements. Moreover, the

geoportal incorporates agro-climatic information to aid agricultural planning and environmental assessments. Mapping of agro-climatic zones has been performed to categorize the islands based on climatic and agricultural traits. The attribute data related to these zones includes average temperature, rainfall patterns, and predominant crops cultivated. These datasets enable the analysis of crop suitability, climate variability, and seasonal agricultural challenges.

Crop Protection

Surveillance of major pests in the Lakshadweep islands

A severe infestation of the cowpea aphid, *Aphis craccivora*, was recorded on *Gliricidia sepium* plants with an incidence of about 20.05%. Dense colonies of the aphid were found on young shoots, stems, and the abaxial surface of leaves. Aphid feeding caused pronounced leaf curling, distortion, and chlorosis due to continuous sap-sucking. Excess honeydew secretion promoted extensive growth of sooty mold, resulting in a black coating on leaves and branches that significantly reduced photosynthetic efficiency and plant vigor. Prolonged infestation led to stunted growth and partial dieback of affected shoots. Feeding on tender twigs caused the development of corky tissues on the bark. Although natural enemies such as ladybird beetles were observed, their population was insufficient to suppress the pest, indicating the need for integrated pest management strategies for effective control under island conditions.

Fig. 27 Colonies of Aphis craccivora on Gliricidia sepium

Fig. 28 Sooty mould due to aphid feeding

Fig. 29 Formation of corky tissues on the tender twigs

5. Scheduled Tribe Component

(i) Capacity building programmes

Trainings to Stakeholders

S. No	Title	Venue	Date	No. of Participants			Coordinators
				M	F	T	
1	Nutritional Security through Fruit Cultivation	Harminder Bay, Little Andaman	22.02.2025	45	33	78	Dr. Pooja Bohra
2	Integrated Farming system for livelihood improvement and input distribution	Kakana, Pilpillow, ChotaEnaka and Hitui Villages of Nancowrie Islands,	12.03.2025 to 13.03.2025	125	70	195	Dr. I. Jaisankar Dr. Abhilash Shri. Talaviya Harshangkumar Dr. Santosh Kumar
3	Training on masmin utilization	RS Minicoy,	01.05.2025	11	120	131	Dr. Gladston Y. Dr. AjinaS.M. Shri.Shareefuddeen Hassan K. Shri. Arif. M.I, Dr. Kiruba Sankar Dr. E.B. Chakurkar
4	Training on sustainable tuna fisheries		05.05.2025	25	0	25	Dr. Gladston Y. Smti. Ajina S.M.
5	Empowering Nicobarese Tribal Fishers: DAT Awareness Program by ICAR-CIARI	Car Nicobar	29.05.2025	22	3	25	Dr. R. Kiruba Sankar Dr. E B.Chakurkar Ms. Sonia Shri. Vinay Raj
6	Training on Neera collection techniques	Tapoiming	30.05.2025	26	24	50	Dr. Santosh Kumar
7	Significance of Natural farming	Arong	03.06.2025	28	34	62	
8	Scientific production & Packaging of VCO	Nancowry	04.06.2025	78	125	203	
9	Scientific production & Packaging of VCO	Tapoiming	11.06.2025	12	23	35	
10	Backyard Vegetable Cultivation during the Monsoon and Farmer Awareness on Weather-Based Advisory Services	Malacca	11.06.2025	29	21	50	

S. No	Title	Venue	Date	No. of Participants			Coordinators
				M	F	T	
11	Advanced tuber crops cultivation and its value addition	Sanu, Kamorta, Vikas Nagar and BadaEnaka of Nancowrie Islands,	16.06.2025 to 18.06.2025	97	21	118	Dr. I. Jaisankar Dr. Abhilash Shri. Talaviya Harshangkumar Dr. Santosh Kumar
12	Awareness generation program among farmers hygiene, pest identification and bio pesticide use	Big Lapathy	25.06.2025	32	28	60	Dr. Santosh Kumar
13	Awareness Generation Programme Among Farmers on Hygiene, Pest Identification, and Safe Biopesticide use	Tribal council office, Big Lapathy	01.07.2025	23	33	56	Dr. Santosh Kumar
14	Training cum demonstration on Arecanut climber	Tapoiming	02.07.2025	12	19	31	Dr. Santosh Kumar
15	Back yard vegetable cultivation with weather based advisory and innovative technologies for fly management and leaf separator	Kakana village of Car Nicobar,	04.07.2025 to 06.07.2025	28	12	40	Dr. Abhilash Shri. T. Harshang kumar Dr. I. Jaisankar Dr. Santosh Kumar
16	Cleanliness drive of Office and surrounding of KVK under Swachhata hi Sewa	ICAR-KVK, Car Nicobar	09.07.2025	12	18	30	Dr. Santosh Kumar
17	Awareness campaign cum Interaction meeting with tribal healers under DST of Ethno veterinary medicinal practices	Car Nicobar,	12.07.2025	2	15	17	Dr. T. Sujatha Dr. Arun Kumar De
18	Awareness campaign cum Interaction meeting with tribal healers under DST of Ethno veterinary medicinal practices	Car Nicobar,	12.07.2025	2	15	17	
19	Scientific livestock farming for livelihood security of tribal farmers of Nicobar	Tapoiming	12.07.2025 to 14.07.2025	12	18	30	

S. No	Title	Venue	Date	No. of Participants			Coordinators
				M	F	T	
20	Scientific pig farming management for tribal farmers	Tapoiming	12.07.2025 to 14.07.2025	12	18	30	Dr. T. Sujatha Dr. Arun Kumar De
21	Value addition and entrepreneurship in horticulture	Kakana community hall	22.07.2025 to 24.07.2025	10	30	40	Dr. Santosh Kumar
22	Organic farming practices for livelihood improvement	Rajiv nagar, Afra Bay and New Chingen of Great and Little Nicobar,	17.08.2025 to 19.08.2025	113	33	146	Dr. I. Jaisankar Dr. Abhilash Dr. Santosh Kumar
23	Tuber crops based Integrated farming system for livelihood improvement of tribal farmers	Hitui, Pilpillow, Kakana, chottaenaka, Nancowrie Islands,	04.10.2025 to 07.10.2025	132	73	205	
24	Ensuring organic Intergrity: Training on certification Procedures	Kimous village Community hall	08.10.2025 to 10.10.2025	13	17	30	Dr. Santosh Kumar
25	Exposure visit cum hands on experience on technologies in the field of Agriculture and allied sectors and input distribution	Pilpillow and kakna villages of Nancowrie Island farmers participated at ICAR-CIARI, Sri Vijaya Puram	07.11.2025 to 10.11.2025	14	1	15	Dr. I. Jaisankar Dr. Abhilash Dr. Y Ramakrishna Dr. Santosh Kumar
26	Participatory training on entrepreneurship opportunities to tribal youths through value added poultry products	Biotech Kisan Hub ICAR-CIARI	12.11.2025 to 14.11.2025	5	15	20	Dr. T. Sujatha
27	Workshop on use of Ethno veterinary medicinal formulations	ICAR-CIARI,	13.11.2025	5	15	20	Dr. T. Sujatha Dr. Arun Kumar De
28	Awareness Program onTribal Heritage Janjati Gaurav Diwas Fisheries Day	Car Nicobar	21.11.2025 to 23.11.2025	27	2	29	Dr. R. Kiruba Sankar Dr. E.B. Chakurkar
29	Weed mat as a non-chemical means for weed management	Harminder Bay, Little Andaman	03.12.2025	48	18	66	Dr. Ajit Arun Waman
Male- 1010 Female-857 Total- 1867							

(ii) Distribution of planting materials/seeds

S. No	Particulars	Qty.	Venue & Date	No. of beneficiaries			Coordinators
				M	F	T	
1	West Indian cherry rooted cuttings	200 nos.	Harminder Bay Little Andaman, 22.02.2025	45	33	78	Dr. Pooja Bohra Dr. Ajit Arun Waman
2	Surinam cherry seedlings	100 nos.					
3	Air layers of guava	200 nos.					
4	Andaman kokum seedlings	100 nos.					
5	Acid lime seedlings	300 nos.					
6	Passion fruit seedlings	400 nos.					
7	Arecanut seedlings	400 nos.					
8	Vegetable seedlings	685	RS Minicoy 04.03.2025	311	194	505	Dr. Gladston Y. Smti. Ajina S.M.
9	Vegetable seeds	1400g		98	62	160	
10	Seeds (Field Crops)	25 kg	Car Nicobar 02.04.2025	15	10	25	Dr. Santosh Kumar
11	Seeds (High Value Crops, spices etc.)	60 kg	Car Nicobar 08.05.2025	150	70	220	Dr. Santosh Kumar
12	Nursery plants	6000	Car Nicobar 06.05.2025	200	45	245	Dr. Santosh Kumar
Male - 864 Female- 864 Total- 1311							

(iii) Distribution of other inputs

S. No	Particulars	Qty/Kgs/ Litres	Venue & Date	No. of beneficiaries			Coordinators
				M	F	T	
1	Dweep CinnRub	130	Harminder Bay, Little Andaman 22.02.2025	48	18	66	Dr. Ajit A. Waman Dr. Pooja Bohra
2	Vermicompost	1,300					
3	Weed mat	1,680 m^2					
4	Barbed wire	500					
5	Axe	95	Kakana, Pilpillow, ChotaEnaka and Hitui Villages of Nancowrie Islands 12.03.2025 to 13.03.2025	125	70	195	Dr. I. Jaisankar
6	Hand Saw	55					
7	Crow bar	102					
8	Spade	102					
9	Bent Knief	105					
10	Garden pruner	2					
11	Dweep Bioconsortia	250					
12	Life jacket	42	Car Nicobar 03.04.2025	40	2	42	Dr. Chittaranjan Raul Dr. R. Kiruba Sankar Dr. J. Praveenraj
13	Angling with hook	26					
14	Ice box	28					
15	Dweep leaf separator	50	Hitui, Pilpillow, Kakana, chottaenaka, Nancowrie Islands, 05.04.2025	132	73	205	Dr. I. Jaisankar
16	Vegetable seed kit	75					
17	Pheromone and yellow sticky traps	170	RS Minicoy 12.06.2025	52	33	85	Dr. Gladston Y. Smt. Ajina S.M.
18	Dweep Leaf separator	50	Sanu, Kamorta, Vikas Nagar and Bada Enaka of Nancowrie Islands, 16.06.2025 to 18.06.2025	97	21	118	Dr. I. Jaisankar
19	Tapioca cuttings	500					
20	Sweet Potato cuttings	500					
21	Sweet Potato cuttings	500	Rajiv nagar, Afra Bay and New Chingen of Great and Little Nicobar 16.06.2025 to 18.06.2025	113	33	146	
22	Tapioca cuttings	1000					
23	Grow bags	300					
24	Dweep leaf separator	50					
25	Dweep micro consortia	100					
26	Vegetable seed kit	50					
27	Grass cutter	1					
28	Dweep Go fly	40	Kakana village Car Nicobar 24.06. 2025 to 26.06.2025	28	12	40	
29	Dweep Leaf Separator	50					
30	Vegetable seed kit	40					
31	Small Implements and Machineries	150	Car Nicobar 24.07.2025	100	89	189	Dr. Santosh Kumar

S. No	Particulars	Qty/Kgs/ Litres	Venue & Date	No. of beneficiaries			Coordinators
				M	F	T	
32	Biofertilizers	1200	RS Minicoy 29.07.2025	40	25	65	Dr. Gladston Y. Smt. Ajina S.M.
33	Poultry	35	Car Nicobar 08.10.2025	5	5	10	Dr. Santosh Kumar
34	Fish ponds	11	Car Nicobar 08.10.2025	8	3	11	
35	Poultry feed and water additives	395	ICAR-CIARI 07.11.2025 to 10.11.2025	15	0	15	Dr. T. Sujatha
36	Khurpi Carbon steel(3")	50		50	0	50	Shri. D. Karunakaran
37	Multi purpose knife	50		50	0	50	
38	Insulated Ice-box (25 lit)	18		18	0	18	
39	Philip touch light	18		18	0	18	
Male- 99 Female-384 Total-1323							

(iv) Demonstration of technology under STC

S. No.	Technology	Venue & Dates	No. of Participants			Coordinators
			M	F	T	
1	Fisheries advisories during cyclone	RS, Minicoy 07.06.2025	20	0	20	Dr. Gladston Y. Dr. Ajina S.M.
2	Coconut based balanced feeding for rural poultry	ICAR-CIARI 10.11.2025	15	0	15	Dr. T.Sujatha
3	Mini incubator	ICAR-CIARI 07.11.2025	15	0	15	Dr. T. Sujatha
4	Elevated brooding structure for chicks and housing for rural poultry	ICAR-CIARI 07.11.2025	15	0	15	
5	Coconut climbing device	RS, Minicoy 07.11.2025	7	0	7	Dr. Saneera E.K.
6	Ethno Veterinary medicinal formulations of Morinda based tonic and Dweep tickure	ICAR-CIARI 12.11.2025	15	0	15	Dr. T. Sujatha
7	Dweep CinnRub	Harminder Bay, Little Andaman 03.12.2025	48	18	66	Dr. Ajit Arun Waman
Male-135 Female-18 Total- 153						

(v) Kitchen garden/ demonstration block/ nursery development

S. No.	Particulars	Venue & date	Coordinators	Area covered
1	Nutritional gardening	Big lapathy	Dr. Santosh Kumar	0.03 ha
2	Nutritional gardening	Tapoiming	Dr. Santosh Kumar	0.03 ha
3	Nutritional gardening	Arong	Dr. Santosh Kumar	0.02 ha
4	Nutritional gardening	Tamaloo	Dr. Santosh Kumar	0.04 ha
5	Kitchen garden in Schools	Minicoy	Dr. Gladston Y	0.05 ha

(vi) Exposure visit for tribal farmers

S. No.	Exposure visit with target group	Venue	Number of participants			Coordinators
			M	F	T	
1	Tribal Farmers (Nicobar) 20/3/2025	Modern Goat Unit	10	0	10	Dr. Jai Sunder Dr. R.R Alyethodi Dr. P. Perumal
2	Exposure visit of the tribal farming community 07/11/2025	Poultry, dairy, pig, goat farm and fodder plot, ICAR-CIARI	65	0	65	Dr. T. Sujatha Dr. P. Perumal, Dr. Arun Kumar De Dr. P.A. Bala Dr. R R. Alyethodi
3	Exposure Visit cum hands on experience on technologies in field of Agriculture and Allied Sectors 07.11.2025 to 10.11.2025	ICAR-CIARI, Sri VijayaPuram	15	0	15	Dr. I. Jaisankar Dr. Y. Ramakrishna Dr. Abhilash
Male-90 Female-0 Total-90						

Total ST beneficiaries under capacity buildiing programmes of STC: 4744 numbers out of which 36 percent were female.

6. WOMEN PARTICIPATION (SC/ST)

A total of 1,654 women farmers benefited across various sectors. Among them, 68 beneficiaries were from Animal Science, 486 from Horticulture & Forestry, 424 from Natural Resource Management (NRM), 130 from Field Crops and 177 from Fisheries and 369 women farmers benefited from the Regional Station at Minicoy in Lakshadweep.

Fig. 30 Women farmers benefited

7. Technologies Developed/Transferred/Demonstrated

7.1 Technology Developed

7.1.1 A Double Recovery Protocol for Simultaneous Extraction of Agar and by Product from Red Seaweeds

Dr. R. Kiruba Sankar, Dr. T. Sujatha, Dr. Jai Sunder, Dr. Eaknath B. Chakurkar, Shri. Harshang T. & Dr. Abhilash

A double recovery protocol was standardised for the simultaneous extraction of agar and a hydrophilic biomass fraction from selected red seaweed species. The agar obtained through this process exhibits desirable gel strength and puritythat can be used for microbiological media preparations. In addition, the residual hydrophilic biomass recovered after agar extraction exhibits functional properties, including a high water-holding capacity and biopolymer content, indicating its potential use in food formulations and agricultural applications such as soil conditioners or biostimulants. This double recovery approach not only enhances the overall value of seaweed resources but also promotes the sustainable and eco-friendly utilisation of marine biomass. This can stimulate seaweed-based livelihood opportunities and strengthen the economic viability of seaweed aquaculture in the Andaman Islands by providing diversified product avenues and local processing potential.

7.1.2 Development of Organic Media for culture of live feed: *Moina micrura*

Shri. Chittaranjan Raul, Dr. J. Praveenraj & Dr. R. Kiruba Sankar

Mass production of *Moina micrura* is generally carried out using *Chlorella*-based algal cultures. However, algal-based production requires higher economic investment and considerable technical expertise due to the need for mass cultivation and maintenance of pure algal cultures. As an alternative, organic media such as baker's yeast have been used for *Moina* production; however, the cost of baker's yeast is approximately ₹100 per 100 g, and the production efficiency is relatively low. In this context, the Fisheries Science Division developed a cost-effective organic medium for *Moina micrura* culture using a combination of marine fish waste and coconut oilcake powder. This medium supported a maximum *Moina* production of approximately 1,000–2,000 individuals L^{-1}, which was significantly higher than that obtained with yeast-based media.

7.1.3 Dweep-Caprine Semen Collection Crate for Goats (Application No456154-001; Dated:22.04.2025)

Dr. P. Perumal, Dr. R.R. Alyethodi & Dr. Jai Sunder

The semen collection crate has been designed to facilitate safe, efficient and hygienic collection of semen from the breeding bucks with use of the artificial vagina (AV) technique. The crate is designed to restrain a doe and allowing the male to mount naturally while minimizing the movement and stress to both the goats. By providing a controlled environment, the crate ensures the animal safety as it prevents injury to both the male and female goats during mounting, improvement in semen collection efficiency, better semen quality and minimizing handling stress resulting in higher quality ejaculates for artificial insemination (AI) or cryopreservation. It sustains uniformity in semen collection which is useful for the research, training, AI in organized breeding programs, semen freezing laboratories and field AI centers.

7.1.4 Dweep-Caprine Artificial Insemination Crate (Application No456155-001; Dated: 22.04.2025)

Dr. P. Perumal, Dr. R. R. Alyethodi & Dr. Jai Sunder

This crate is a multipurpose and portable versatile tool and field-adapted restraining system designed for safe, efficient, and standardized artificial insemination and other reproductive and clinical procedures in goats under both organized farm and field conditions. It provides secure, ergonomic, and animal-friendly restraint, minimizing stress and ensuring optimal positioning for accurate semen deposition. The crate improves insemination success, enhances operator safety, and allows single-person operation, making it suitable for

mobile and large-scale AI programs. In addition to artificial insemination, the crate supports reproductive pathology investigations, diagnostic sampling, embryo collection and transfer and minor surgical interventions.

7.1.5 Biofloc system for culture of shrimp (*Penaeus vannamei*)

Shri. Chittaranjan Raul, Dr. K. Saravanan, Dr. J Praveenraj & Dr. R. Kiruba Sankar

Intensive culture of *Penaeus vannamei* was demonstrated in tarpaulin lined tanks using seawater of 30 ppt salinity, and provided with continuous and vigorous aeration to maintain optimal dissolved oxygen levels and keep biofloc particles in suspension. Shrimp seed of *P. vannamei* at the PL-10 stage (3,000 nos.) was stocked. Biofloc inoculum was prepared using commercial probiotic bacteria along with jaggery and rice bran powder as carbon sources maintaining carbon to nitrogen (C:N) ratio of 15–20. The shrimp were fed commercial feed containing 35% crude protein. The out put production under biofloc system was 10 kgs fish (Roopchanda, Rohu Mrigala), 60 kgs shrimp (Vannamei), 10000 nos carp seed (Catla and Rohu (fry and fingerlings)).

7.1.6 Dweep *MASMIN* Poultry Feed: (Patent Application No.: 202531098604 dated 13.10.2025)

Dr. T. Sujatha, Dr. Y. Gladston, Smti.S.M. Ajina, Dr.E. B. Chakurkar, Dr. K. Saravanan, &Dr.R. Kiruba Sankar

The invention is related to the development of a poultry feedformulation using MASMIN, the smoked and dried of tuna fish that is the leftover of human consumption reducing dependency on soya bean meal, the major protein source in poultry feed and thereby to reduce poultry feed cost

7.1.7 Polyherbal Acaricide Formulation and Its Efficacy(Applied for Patent; dated: 11.08.2025)

Dr. T. Sujatha, Dr. D. Bhattacharya, Dr. A.K. De, Dr.P.Perumal, Dr. Y. Sharath, Dr. E.B. Chakurkar & Dr. Jai Sunder

This invention describes the formulation of an herbal acaricide and its hitherto application.

7.1.8 Development of Larval Tarsal Test (LTT) Using Alternate Coating Agent (Patent Application No. 202531097162; Dated:09.10.2025)

Dr. T. Sujatha, Dr. D. Bhattacharya, Dr. A.K. De, Dr. R.R. Alyethodi, Dr. E.B. Chakurkar & Dr. Jai Sunder

This invention describes alternative and cheap coating that reduced the cost involved in the test. This in-house component can be prepared in any laboratory with moderate facilities.

7.1.9 Dweep Cockroach Rearing Unit (Design Patent Application No: 462101-001Dated: 13.06.2025)

Dr. T. Sujatha, Dr. D. Bhattacharya, Dr. E.B. Chakurkar, Dr. Arun Kumar De, Dr. Jai Sunder & Dr. Zachariah George

This design is for rearing of cockroach to develop protocol in a controlled environment to study the efficacy of formulations to kill or control them. The advantages of the design are; the inbuilt structure of feeding part is easy to remove for replacing the old feed and water, bedding material can be placed in a proper way at the bottom of the unit which not contaminates feed and water offered to cockroach and colony built in the unit does not contain any infection.

7.1.10 Dweep Fly Rearing Cage (Patent Application No.: 462103-001; Dated: 13.06.2025)

Dr. T. Sujatha, Dr. D. Bhattacharya, Dr. Arun Kumar De, Dr. Jai Sunder, Dr. E.B. Chakurkar & Dr. B.W. Narladkar

The salient features of the design are; both house and flesh flies can be reared for experimental studies, Flies reared in the cage will not bear any contamination that leads to infection, Life cycle of the fly in difference agro climatic region can be studied and this cage is suitable for in-vitro study to develop proper fly control measures.

7.1.11 Brooder System for Ducklings (Design patent Application No: 480714-001; Dated: 18.11.2025)

Dr. T. Sujatha & Dr. D. Bhattacharya

The purpose of the design are; Separation of ducklings from waste, reducing moisture on the

floor, sustainable waste management, increased production efficiency and lower veterinarycost.

7.1.12 Rabbit Semen Collector: Design Patent granted (Design No: 440867-001 Dated: 27.01.2025)

Dr. E.B Chakurkar, Dr. R.R. Alyethodi, Dr. P Perumal & Dr. Jai Sunder

An indigenous, cost-effective semen collector has been developed specifically for rabbit breeding applications. The device is fabricated using locally available plastic materials and single use contraceptive tubing, ensuring affordability, ease of fabrication, and reduced dependence on imported equipment. Its lightweight, ergonomic, and user-friendly design allows for easy handling under both field and laboratory conditions. This innovation promotes self-reliance by encouraging local production and technological innovation in rabbit reproductive management.

7.2 Technology Commercialized

7.2.1 Dweep Leaf Separator: A Labour-Saving Innovation for the Coconut Industry

Dr. I. Jaisankar, Dr. B. Augustine Jerard, Dr. T. Subramani & Dr. E.B. Chakurkar

The patented design "Dweep Leaf Separator" was licensed to M/s Jai Sankar Industries Pvt. Ltd., Sri VijayaPuram, South Andaman, on 17 January 2025. It is alabour-saving hand-held implement developed to enhance efficiency in coconut-based operations. It enables rapid and ergonomic separation of coconut leaflet midribs, achieving up to 500 midribs per hour compared to about 380 midribs per hour through conventional manual methods, while producing cleaner and more uniform outputs suitable for broom making and other cottage industries. The tool reduces labour drudgery, improves productivity, and supports rural livelihood generation in coconut-growing regions, particularly in Island Ecosystems.

Fig. 31 IPatented design "Dweep Leaf Separator" licensed to M/s Jai Sankar Industries Pvt. Ltd.

7.2.2 Cinnamon Bark Rubbing Tool

Dr. Ajit Arun Waman & Dr. Pooja Bohra

Cinnamon, a valuable spice used in flavoring, medicine, and the fragrance industry, is largely imported to meet domestic demand, which amounts to approximately Rs 900 Cr annually. To reduce this reliance, there is a need to promote cinnamon cultivation in India. However, the labor-intensive harvesting process has deterred many farmers. The traditional harvesting method, which involves scraping the outer bark, rubbing the stems, and carefully removing the inner bark, requires skill and adds to harvesting costs. No suitable tools are available in the market, and the traditional methods often lead to quality loss. The *DweepCinnRub*—a user-friendly cinnamon bark rubbing tool that saves time and energy. The tool is expected to benefit existing cinnamon cultivators in coastal and island states, as well as regions where cinnamon cultivation is expanding. The technology was transferred to Ms. R. Karthika Devi, KT Enterprises, South Andaman on March 4, 2025.

Fig. 32 DweepCinnRub technology transferred to Ms. R. Karthika Devi, KT Enterprises

7.2.3 Innovative *MASMIN* based poultry feed technology in Lakshadweep Islands

Dr. T. Sujatha, Dr. Y. Gladston, Dr. S.M. Ajina, Dr. E.B. Chakurkar, Dr. K. Saravanan & Dr. R. Kiruba Sankar

The *Dweep MASMIN-Poultry Feed* is a novel, MASMIN-based feed derived from processed

(smoked and dried) tuna fish — a resource abundantly available in the Lakshadweep Islands. This innovative formulation serves as a sustainable alternative to conventional soybean meal, which is commonly used in poultry feed.With a high crude protein content of 70%, superior digestibility, and excellent nutrient availability, the feed has been designed to support various poultry stages. The technology enables the preparation of five distinct feed types: starter, grower, layer, broiler starter, and finisher feed. This breakthrough technology was licensed to local entrepreneur Mr. Ibrahim Manikfen on 22 April 2025. The Technology License Agreement was formally signed at the Regional Station of ICAR-CIARI in Minicoy. The new feed is expected to reduce poultry feed costs by up to 30% in the region. This could play a pivotal role in enhancing the self-sustainability of poultry farming across the Lakshadweep Islands, minimizing reliance on imported feed components and strengthening the local agricultural economy.

7.2.4 Dweep Go-Fly formulation: A Step towards Sustainable Fly Management

Shri. Talaviya Harshangkumar, Dr. Arun Kumar De, Dr. D. Bhattacharya, Dr. P. Perumal, Dr. Abhilash, Dr. T. Sujatha, Dr. Jai Sunder & Dr. E.B. Chakurkar

Marketing and commercialization of the process for Dweep Go-Fly formulation were granted to Mr. Sainath Shenoy, C/o Mahalasa Agro Products, South Andaman on 23 June, 2025**,** It is a ready-to-use spray formulation designed to repel house flies and flesh flies. The product is a blend of safecompounts for humans, animals, and the environment. Dweep Go-Fly offers effective fly repellency for up to 4 hours in open environments such as fish markets and livestock sheds, and up to 24 hours in enclosed spaces like homes, bakeries, and sweet shops. The product will be launched in the market under the brand name “Fly Free Natural.” This technology is not only expected to serve the needs of theisland communities but also holds significant market potential across mainland India**,** promoting hygienic surroundings and enhancing food safety standards.

7.2.5. Dweep Microclimate Monitor: A Step towards Precision Farm Micro-Climate Monitoring

Dr. Abhilash, Dr. I. Jaisankar, Shri. Talaviya Harshangkumar & Dr. E. B. Chakurkar

Agricultural productivity and livestock health are closely influenced by microclimatic variations, especially temperature and humidity, which determine crop growth stages, livestock comfort, and overall resource use efficiency. Conventional instruments for monitoring such parameters often provide single-point data, lack remote accessibility, and are not suited for rugged, field-level applications. To bridge this gap, Dweep Microclimate Monitor, a low-cost, IoT-enabled device capable of real-time monitoring and transmission of microclimate data has been developed and granted design patent. The instrument offers vertical profiling, remote data access through a cloud-based dashboard, and solar-powered operation, making it highly suitable for crop fields, greenhouses, and livestock sheds in off-grid or remote locations. The technology was commercialized on 29th September 2025 with AgriClimSense, Liwan, Sonipat, Haryana, through a Memorandum of Understanding (MoU). This milestone marks an important step in promoting

Fig. 33 Commercialization of Dweep Go-Fly Formulation

Fig. 34 Dweep Microclimate Monitor” commercialized with AgriClimSense

climate-resilient agriculture and facilitating applications such as growing degree day (GDD) studies, livestock comfort monitoring, and validation of satellite-derived weather products.

7.3 Technologies tested

7.3.1 Enhancing Seaweed Farming Resilience: Evaluation of Small Plastic Raft Design for *Gracilaria edulis* Cultivation in Andaman and Nicobar Islands (Design patent Application No:62105-001 dated: (13.06.2025)

Dr. R. Kiruba Sankar, Dr. K. Saravanan, Dr. J. Praveenraj & Shri. Chittaranjan Raul

The feasibility and performance of *Gracilaria edulis* cultivation were evaluated using small plastic rafts of 1 m² area for their ability to withstand rough sea conditions. Seventy-two small rafts designed to evaluate endurance under rough weather conditions for the culture of *Gracilaria edulis* seaweeds.Small net pouches were fixed on the rafts and tested to evaluate growth rates and survival under field conditions during the Northeast Monsoon as well as the Southwest Monsoon (November 2024 to July 2025). Over a 60-day culture period, by Day 30, the biomass of *Gracilariaedulis*increased significantly from 1.2 kg to to3.2–3.3 kg.By Day 60($p < 0.05$), biomass accumulation further improved, ranging between 5.6–5.9 kg, indicating a five fold increase from the initial stocking weight. This vigorous growth performance indicated that the design is highly suitable for higher attachment efficiency and survival of sea weeds.Small plastic rafts present a practical, weather-resilient alternative to bamboo structures with potential for adoption in community-based seaweed farming.

7.3.2 Protocol for Ornamental Betta Fish Breeding and Seed Production under Island Conditions

Dr. J. Praveenraj, Dr. K. Saravanan & Dr. R. Kiruba Sankar

Protocols were standardised for breeding and seed production of ornamental varieties such as Half Moon Betta, Nemo Candy Betta, Dragon Betta, and Giant Betta. The process includes broodstock conditioning, controlled spawning, and bubble-nest breeding and larval rearing under regulated temperature and water quality conditions. With survival rates exceeding 80%, the technology ensures continuous seed availability of high-value color strains suited for aquarium trade. It offers a low-cost, space-efficient, and profitable option for small-scale ornamental fish entrepreneurs and hobbyists in island ecosystems. Its unique features requirenon-dependability on tubifex worms or bloodworms for larval rearing and growout, instead depending on the use of different combination live feeds and commercial pellets at various life stages for growout.Each breeding pair can produce 150–250 eggs per spawning, with a survival rate of 70–80% under controlled conditions.With 10–15 active breeding pairs, the unit can produce approximately 1,500–3,000 healthy fry per month. Assuming 8–10 breeding cycles per year, the annual seed production potential is 15,000–30,000 juveniles.The average market price of a Siamese fighting fish ranges between ₹300–₹500 per fish, depending on strain, colour, and fin type.

7.4 Patents granted

7.4.1 Fly Repellent Composition (Patent no: 570615 dated: 12/09/2025)

Dr. Talaviya Harshangkumar, Dr. Arun Kumar De, Dr. D. Bhattacharya, Dr. P. Perumal, Dr. Abhilash, Dr. T. Sujatha, Dr. Jai Sunder & Dr. E. B. Chakurkar

ICAR–Central Island Agricultural Research Institute has been granted a patent for its novel invention titled 'Fly Repellent Composition and Method of Preparation Thereof'. Flies pose a significant threat to both human and animal health as they act as vectors of various diseases, either through mechanical transmission or by serving as intermediate hosts of parasites. While adult flies spread infections, their larvae cause myiasis, commonly known as maggot wounds. Traditionally, chemical and biological methods have been employed to control fly populations. In response to this challenge, a unique fly repellent formulation that blends selected chemical compounds with indigenous components. The ready-to-use spray formulation has demonstrated high efficacy, repelling houseflies and flesh flies for up to four hours in open spaces such as fish

markets and animal sheds, and up to 24 hours in enclosed environments like sweet shops, bakeries, and households.

7.4.2. Microclimate Monitor(Design No. 462104-001; dated 13/06/2025)

Dr. Abhilash, Dr. I. Jaisankar, Mr. Talaviya Harshangkumar & Dr. Eaknath B. Chakurkar

It is an affordable, rugged, and IoT-enabled solution for real-time microclimate monitoring.. Its compact and field-ready design enables deployment across diverse environments such as open fields, greenhouses, integrated farming systems, and livestock sheds. It supports the generation of long-term, site-specific microclimate datasets, enhances the precision of agro-meteorological advisories, strengthens climate change impact assessments, and aids modelling studies across varied agro-climatic zones. It also facilitates heat unit and growing degree day analyses, livestock comfort assessment, validation of satellite-derived weather products, and field-level datasets for agrometeorological research, thereby contributing to informed farm-level decision-making and sustainable agricultural practices.

Fig. 35 IoT-enabled device for real-time microclimate monitoring and smart farming

7.4.3 Pandanus Fruit Pulp Extractor (Design No. 451313-001; dated 19/06/2025)

Dr. I. Jaisankar, Dr. T. Subramani & Dr. E.B. Chakurkar

Pandanus Fruit Pulp Extractor is an efficient, labour-saving, hand-held tool for extracting fruit pulp from the fibrous keys of Pandanus (Kewdi) fruits. It significantly improves extraction efficiency, enabling processing of about320 fruit keys per hour,compared to180 keys per hourusing conventional methods, while producingcleaner and fibre-free pulp**.** The ergonomic and easy-to-use design reduces manual drudgery and enhances processing efficiency, making it suitable for research laboratories, small-scale processing, and preparation of fruit pulp cakes and other value-added products.

7.5 Technologies Transferred

7.5.1 Culinary paste from mango ginger

Dr. Pooja Bohra and Dr. Ajit Arun Waman

The technology was transferred through paid training to Ms. M. Venni, Chouldari, South Andaman for facilitating production of this product on large scale.

7.5.2 Value added products from Andaman Kokum

Dr. Pooja Bohra and Dr. Ajit Arun Waman

The technology of preparation of value added products of Andaman Kokum viz. syrup, dehydrated rind and candy were transferred through paid training to Ms. Sneha Horo, School Line, South Andaman for facilitating production of these products on large scale.

7.6 Technologies demonstration

Sl. No.	Name of the technology	Date	Venue	Beneficiaries (M/F/T)	Coordinators
1	Dweep CinnRub	05/03/2025	Garacharma	33/39/72	Dr. Ajit Arun Waman Dr. Pooja Bohra
2	Improved varieties of Malabar tamarind and tejpat	05/03/2025	Garacharma	33/39/72	Dr. Ajit Arun Waman Dr. Pooja Bohra
3	Dweep Goottee 365	05/03/2025	Garacharma	33/39/72	Dr. Ajit Arun Waman Dr. Pooja Bohra
4	Protected cultivation of Woody Pepper	05/03/2025	Garacharma	33/39/72	Dr. Ajit Arun Waman Dr. Pooja Bohra
5	Andaman Kokum as a novel crop	05/03/2025	Garacharma	33/39/72	Dr. Ajit Arun Waman Dr. Pooja Bohra
6	Blood fruit as a novel crop	05/03/2025	Garacharma	33/39/72	Dr. Ajit Arun Waman Dr. Pooja Bohra
7	Weed mat as a non-chemical means of weed management	05/03/2025	Garacharma	33/39/72	Dr. Ajit Arun Waman Dr. Pooja Bohra
8	Potted cultivation of West Indian Cherry	05/03/2025	Garacharma	33/39/72	Dr. Ajit Arun Waman Dr. Pooja Bohra
9	Controlled breeding programme and artificial insemination in goat	20/05/2025 to 22/05/2025	Rangat, North and Middle Andaman	10/25/35	Dr. P. Perumal
10	Demonstration and Hands on experience for use of Dweep Go-Fly and Dweep Leaf Separator.	04/06/2025	Car Nicobar Island	21/32/53	Shri. Talaviya Harshangkumar Dr. Abhilash Dr. I. Jaisankar
11	Controlled breeding programme and artificial insemination in goat	18/08/2025 to 19/08/2025	ICAR-CIARI, Sri Vijaya Puram	17/21/38	Dr. P. Perumal Dr. R.R. Alyethodi
12	Controlled breeding programme and artificial insemination in goat	30/08/2025 to 31/08/2025	Indira Nagar, South Andaman	15/22/37	Dr. P. Perumal
13	Weed mat as a non-chemical means of weed management	04/09/2025	Sippighat	0/23/23	Dr. Ajit Arun Waman
14	DweepCinnRub	23/10/2025	Sippighat	61/47/108	Dr. Ajit Arun Waman

Sl. No.	Name of the technology	Date	Venue	Beneficiaries (M/F/T)	Coordinators
15	Controlled breeding programme and artificial insemination in goat	22/11/2025-26/11/2025	Baratang, Rangat, Nimbudera, Mayabunder & Baratang	80/85/165	Dr. P. Perumal Dr. R. R. Alyethodi
16	Weed mat as a non-chemical means of weed management	03/12/2025	Harminder Bay, Little Andaman	48/18/66	Dr. Pooja Bohra Dr. Ajit Arun Waman
17	DweepCinnRub	18/12/2025	Sippighat	08/10/18	Dr. Ajit Arun Waman Dr. Pooja Bohra
18	DweepCinnRub	03/12/2025	Harminder Bay, Little Andaman	48/18/66	Dr. Ajit Arun Waman
19	Protected cultivation of Woody Pepper	17/12/2025	Garacharma	08/10/18	Dr. Ajit Arun Waman
20	Potted cultivation of West Indian Cherry	17/12/2025	Garacharma	08/10/18	Dr. Pooja Bohra
21	Andaman Kokum as a novel crop	17/12/2025	Garacharma	08/10/18	Dr. Pooja Bohra
22	Blood fruit as a novel crop	17/12/2025	Garacharma	08/10/18	Dr. Pooja Bohra
23	Improved varieties of Malabar tamarind and tejpat	20/12/2025	Garacharma	08/10/18	Dr. Ajit Arun Waman Dr. Pooja Bohra
24	DweepGoottee 365	20/12/2025	Garacharma	08/10/18	Dr. Ajit Arun Waman Dr. Pooja Bohra
25	Tuna FAD for Fish productivity enhancement	01/05/2025	Minicoy	22/0/22	Dr. Gladston Y Smti. .Ajina S M
26	An awareness programme on Tuna fish aggregating device and its importance	05/05/2025	Minicoy	28/8/36	Dr. Gladston Y Smti.Ajina S M
27	Dweep MASMIN poultry feed	23/06/2025	Minicoy	20/0/20	Dr. T.Sujatha Dr. Y.Gladston Smti. S.M. Ajina Dr. E.B. Chakurkar Dr. R. Kiruba Sankar Dr. K.Saravanan
Male-720 Female-693 Total- 1413					

7.7 Seed & Planting Material

Crops	Variety /Produced	Category	Qty Nos/Kg
Rice (*Oryza sativa* L.)	Dweep Dhan 1	Breeder seed	10.00 kg
Rice (*Oryza sativa* L.)	Dweep Dhan 2	Breeder seed	10.00 kg
Rice (*Oryza sativa* L.)	Dweep Dhan 3	Breeder seed	10.00 kg
Rice (*Oryza sativa* L.)	Dweep Dhan 4	Breeder seed	56.00 kg
Rice (*Oryza sativa* L.)	Dweep Dhan 5	Breeder seed	63.00 kg
Rice (*Oryza sativa* L.)	Dweep Dhan 6	Breeder seed	62.00 kg
Rice (*Oryza sativa* L.)	Dweep Dhan 7	Breeder seed	88.00 kg
Rice (*Oryza sativa* L.)	Dweep Dhan 8	Breeder seed	20.00 kg
Rice (*Oryza sativa* L.)	Dweep Dhan 9	Breeder seed	25.00 kg
Rice (*Oryza sativa* L.)	Dweep Dhan 10	Breeder seed	40.00 kg
Rice (*Oryza sativa* L.)	Dweep Dhan 11	Breeder seed	62.00 kg
Mung (*Vigna radiata* L.)	Dweep Mung 1	Breeder seed	5.50 kg
Mung (*Vigna radiata* L.)	Dweep Mung 2	Breeder seed	15.00 kg
Mung (*Vigna radiata*L.)	Dweep Mung 3	Breeder seed	20.00 kg
Mung (*Vignaradiata* L.)	Dweep Mung 4	Breeder seed	4.00 kg
Mung (*Vigna radiata* L.)	Dweep Mung 5	Breeder seed	3.50 kg
Urd (*Vigna mungo* L.)	Dweep Urd 1	Breeder seed	2.50 kg
Urd (*Vigna mungo* L.)	Dweep Urd 2	Breeder seed	20 kg
Brinjal (*Solanum melongena* L.)	Dweep Brinjal 1	TFL seed	50 kg
Brinjal (*Solanum melongena* L.)	Dweep Brinjal 2	TFL seed	80 kg
Rice (*Oryza sativa* L.)	Dweep Dhan 5	TFL seed	680.00 kg
Rice (*Oryza sativa* L.)	Dweep Dhan 6	TFL seed	630.00 kg
Rice (*Oryza sativa* L.)	Dweep Dhan 7	TFL seed	580.00 kg
Rice (*Oryza sativa* L.)	Dweep Dhan 10	TFL seed	200.00 kg
Rice (*Oryza sativa* L.)	Dweep Dhan 11	TFL seed	362.00 kg
Rice (*Oryza sativa* L.)	Gayatri	TFL seed	1729.00 kg
Mung (*Vigna radiata* L.)	Dweep Mung 1	TFL seed	20.00 kg
Mung (*Vigna radiata* L.)	Dweep Mung 4	TFL seed	6.00 kg
Pumpkin- *Cucurbita moschata*	Arjun	Seeds	2.00 kg
Brinjal -*Solanum melongena*	CIARI 1 & 2	Seeds	11.00 kg
Carp Grower Feed	-	Product	860 kgs
Coconut (*Cocos nucifera*)	Dweep Haritha, Dweep Sona, Dweep Annapurna, AOT, Chowghat Orange Dwarf,	Seedlings	1530 nos
Arecanut (*Areca catechu*)	Samruddhi and Mangala	Seedlings	30,854 nos
Acerola (*Malpighia glabra*)	IC-371804	Rooted cuttings	100 nos
Passion fruit (*Passiflora edulis*)	Purple and Yellow	Seedlings	1,406 nos
Andaman Kokum (*Garcinia dhanikhariensis*)	collections	Grafts	65 nos

Crops	Variety /Produced	Category	Qty Nos/Kg
Andaman Kokum (*Garcinia dhanikhariensis*)	collections	Seedlings	434 nos
Malabar Tamarind (*Garcinia gummi-gutta*)	Dweep Agrim, Dweep Vishal and identified mother plants	Seedlings	530 nos
Malabar Tamarind (*Garcinia gummi-gutta*)	Local	Seedlings	7,641 nos
Kydia and cowa mangosteen (*Garcinia kydia* and *G. cowa*)	Local	Seedlings	1,480 nos
Kydiaand cowa mangosteen (*Garcinia kydia*a and *G. cowa*)	Identified collections	Grafts	73 nos
Mysore gamboge (*Garcinia xanthochymus*)	Identified collection	Seedlings	40 nos
Surinam cherry (*Eugenia uniflora*)	Identified collection	Seedlings	400 nos
Khatta phal (*Baccaurea ramiflora*)	Identified collection	Grafts	28 nos
Watery rose apple *(Syzygium aqueum*)	Identified collection	Air layers	234 nos
Jackfruit (*Artocarpus heterophyllus*)	Local	Seedlings	245 nos
Guava (*Psidium guajava*)	White and pink fleshed	Air layers	603 nos
Dragon fruit (*Selenicereus costaricensis*)	Purple fleshed	Rooted cuttings	60 nos
Banana (*Musa x paradisiaca*)	Grande Naine (TC), Korangi, Cheena Kela suckers	Tissue culture plants and suckers	680 nos
Acid lime (*Citrus aurantifolia*)	Identified collections	Seedlings	426 nos
Bilimbi (*Averrhoa bilimbi*)	Local	Seedlings	168 nos
Pummelo (*Citrus grandis*)	Identified collections	Seedlings	114 nos
Carambola (*Averrhoa carambola*)	Sweet type	Seedlings	60 nos
Bullock's heart (*Annona reticulata*)	Local	Seedlings	57 nos
Blood fruit (*Haematocarpus validus*)	Local	Seedlings	34 nos
Cinnamon (*Cinnamomum verum*)	Konkan Tej, Konkan Tejpatta, YCD-1, IISR Nithyasree, IISR Navasree	Air layers	791 nos
Cinnamon (*Cinnamomum verum*)	Local	Seedlings	10,377 nos
Tejpat (*Cinnamomum tamala*)	Dweep Tej 1 and identified collection	Air layers/ Seedlings	786 nos
Black pepper (*Piper nigrum*)	P-2, P-5, IISR Girimunda, IISR Malabar Excel	Rooted cuttings	947 nos
Long pepper (*Piper longum*)	Viswam	Rooted cuttings	250 nos
Andaman Pippali (*Piper sarmentosum*)	Identified collection	Rooted cuttings	369 nos

Crops	Variety /Produced	Category	Qty Nos/Kg
Woody pepper (*Piper pendulispicum*)	INGR25029	Rooted cuttings	1,016 nos
Brazilian pepper (*Piper colubrinum*)	-	Rooted cuttings	125 nos
Lemongrass (*Cymbopogon flexuosus*)	OD-19	Slips	280 nos
Medicinal and aromatic plants	Citronella, Coleus, Pattharchoor, Aloe, Kalmegh, brahmi *etc*.	Rooted cuttings	313 nos
Ornamental plants	Variety of foliage and flowering plants	Rooted cuttings	1,721 nos
Fodder	Super Napier	Stem cuttings	8632 nos
Chilli	Local,NS105	Seeds	55 nos
Brinjal- *Solanum melongena*	CIARI 1 & 2	Seedlings	230 nos
Chilli- *Capsicum annuum*	Local,NS105	Seedlings	554 nos
Tomato- *Lycopersicon esculentum*	Anirudh	Seedlings	88 nos
Amaranthus- *Amaranthus tricolor*	Lakshadweep local	Seedlings	86 nos
Rose- Rosa spp.	Panineer rosa	Seedlings	550 nos

8. Success Stories / Case Reports

Success Story: 1

Scientific Breeding Interventions for Sustainable Goat Farming in Andaman

Smt. Sarojini, a 50-year-old smallholder woman farmer from Rangachang-4, South Andaman, supports a family of three and manages 25 goats comprising adults, growers, kids and bucks, along with two cattle and ten desi poultry. Starting with just two goats nearly 25 years ago, she gradually developed her enterprise and was selling about four goats annually, earning approximately ₹48,000 with a net profit of ₹30,000, mainly during festival seasons when prices were higher. Despite her long experience, the productivity of her flock remained low due to minimal concentrate feeding, lack of fodder supplementation and unmanaged grazing, resulting in slow kid growth, low twinning rate, prolonged kidding intervals, poor body conformation, high kid mortality and low market value.

To improve herd performance, Smt. Sarojini participated in training programmes conducted by ICAR–CIARI on scientific goat management, controlled breeding and artificial insemination (AI) and adopted a package of practices suited to the humid tropical conditions of the Andaman Islands. Selected breeding does with normal reproductive history were prepared for one month through deworming with Doramectin, supplementation with Tonophosphan injections, Cyclomin-7 capsules and germinated Bengal gram (100 g/day), followed by estrus synchronization using two doses of $PGF_2\alpha$ at a 9–10 day interval. Goats exhibiting estrus were inseminated using quality-checked elite buck semen from the ICAR–CIARI nucleus herd, and pregnancy was confirmed after 45–60 days. Out of eight selected goats, six expressed estrus and four conceived, recording a conception rate of 66.66% and resulting in seven kids, of which five were successfully marketed. AI-born kids exhibited superior growth and fetched higher prices, leading to an increase in annual income from ₹48,000 to ₹62,000 and net profit from ₹30,000 to ₹45,000. Encouraged by the outcomes, Smt. Sarojini acknowledged the support of ICAR–CIARI and NABARD and expressed her willingness to continue scientific goat farming and promote these technologies among smallholder farmers in the islands.

Contributors: *Dr. P. Perumal and Dr. Sharath S. Yeligar*

Success Story: 2

Scientific Breeding Interventions for Increasing Farmer Income in Goat Production

Mr. P. Rameshwaran, a 40-year-old progressive farmer from Guptapara, South Andaman, manages a diversified livestock enterprise comprising 69 dairy cattle, 60 goats, 30 desi poultry and four ducks, supporting a family of five. Starting with only three goats five years ago, he expanded his goat unit to 60 animals and was selling about 18 goats annually, generating a gross income of ₹3.30 lakh with a net profit of ₹1.85 lakh. Although he maintained good infrastructure, fodder production and separate sheds for different age groups, the goat unit faced constraints such as poor kid growth, low litter size, prolonged kidding intervals, worm-related bloat, reproductive disorders, high mortality, delayed market age and low sale price, mainly due to irregular deworming, mineral deficiencies, dependence on poor-quality local bucks, inadequate heat detection and lack of access to artificial insemination (AI).

To overcome these limitations, Mr. Rameshwaran participated in training programmes conducted by ICAR–CIARI on scientific goat management, controlled breeding and AI and adopted a location-specific reproductive management package suitable for humid tropical island conditions. Selected breeding does with normal reproductive history and 45–60 days post-kidding were prepared through a one-month health protocol comprising deworming with Doramectin, Tonophosphan injections, Cyclomin-7 capsules and supplementation with germinated Bengal gram (100 g/day), followed by estrus synchronization using two doses of $PGF_2\alpha$ at a 9–10 day interval. Goats expressing estrus were inseminated using quality-checked elite buck semen from the ICAR–CIARI nucleus herd, and pregnancy was confirmed after 45–60 days. The intervention resulted in an overall conception rate

of 50.35%, producing 30 kids from 17 kiddings with a low mortality rate of 6.66%. AI-born kids showed superior growth, reduced kidding interval of 240–250 days and fetched higher market prices. Consequently, Mr. Rameshwaran's annual income increased from ₹3.30 lakh to ₹4.50 lakh, with net profit rising from ₹1.85 lakh to ₹2.50 lakh. He acknowledged the support of ICAR–CIARI and NABARD and expressed willingness to continue scientific goat farming and promote these technologies among island farmers.

Contributors: *Dr. P. Perumal and Dr. Sharath S. Yeligar*

Success Story: 3

Conservation-Oriented Scientific Goat Farming Enhancing Farmer Income in Middle Andaman

Mr. Tarun Biswas, a progressive goat farmer from Shantipur village, Middle Andaman, has been engaged in goat rearing for over 15 years and is widely recognized for his commitment to scientific and conservation-oriented farming. Adopted under the AICRP on Goat Improvement project in 2020, he currently maintains 21 goats along with poultry and earns an annual income of ₹80,000–1,00,000 by selling 10–12 goats per year. His enterprise is largely based on the indigenous Andamani goat, reflecting his dedication to breed conservation while ensuring sustainable income through improved management and quality breeding practices.

With technical guidance from ICAR–CIARI, Mr. Biswas adopted a range of scientific interventions, including regular deworming, mineral mixture supplementation to enhance fertility and productivity, periodic body weight monitoring, and improved housing with raised, clean and well-ventilated sheds. He also adopted eco-friendly tick control using herbal acaricides and strengthened genetic improvement through the use of an elite buck provided under the project in 2024. These interventions resulted in healthier animals, improved growth performance and production of genetically superior offspring. His consistent efforts in maintaining true-to-breed Andamani goats and supplying quality breeding bucks to fellow farmers have contributed significantly to the dissemination of superior germplasm in the region. In recognition of his exemplary contributions to goat farming and breed conservation, Mr. Tarun Biswas was conferred the *Best Farmer Award for Goat Farming* during the Kisan Mela 2025 organized by ICAR–CIARI in March 2025, further motivating him to expand scientific goat farming and support livelihood improvement among island farmers.

Contributors:*Dr. Jai Sunder, Dr. R.R. Alyethodi and Dr. P. Perumal*

Success Story: 5

Coconut Shell Handicraft as a Pathway for Women Empowerment and Income Diversification in North and Middle Andaman

Mrs. Rama Guha, a 45-year-old farmwoman from Swadeshnagar Gram Panchayat, North and Middle Andaman, has emerged as a role model for women empowerment through skill-based entrepreneurship. With a high school education and a family of three members, she was earlier engaged along with her husband in agriculture and animal husbandry activities, including cattle rearing, goat farming and backyard poultry, which provided a modest but steady income to support household needs and her son's education. In 2017, she took an important initiative by forming a Self-Help Group (SHG) named "ROSE," which enabled her to work collectively with other women and explore additional livelihood opportunities, though her income continued to rely mainly on traditional farming activities.

A major transformation occurred when Mrs. Guha participated in a six-day vocational training programme on preparation of coconut shell handicrafts for SHGs, organized by ICAR–KVK, North and Middle Andaman in collaboration with the Coconut Development Board, Sri Vijaya Puram. The training exposed her to value addition using coconut shells, a locally abundant resource, and helped her acquire technical skills and entrepreneurial confidence under continuous guidance from the Subject Matter Specialist (Home Science) and the Senior Scientist & Head of KVK. Following the training, she started producing a variety of coconut shell handicraft items, focusing on quality and durability, and gradually established a niche in the local market. Her products gained wider recognition after being showcased at the ICAR–CIARI Kisan Mela 2025 and later at the

"AVSAR" outlet at Veer Savarkar International Airport, Sri Vijaya Puram, significantly expanding market access. At present, her agriculture and animal husbandry enterprises generate about ₹30,000 per month, while coconut shell handicrafts contribute an additional ₹15,000 per month, resulting in a combined household income of nearly ₹45,000. Encouraged by this success, Mrs. Guha plans to diversify product designs, strengthen market linkages and train other SHG members to promote group entrepreneurship, employment generation and sustainable livelihoods in the district.

Contributors: *Shri. Manoj Kumar, Shri. Yatharth Sharma and Dr. V. Damodaran.*

Fig: 35 Mrs. Rama Guha with coconut shell handicrafts—empowering livelihoods through skill-based entrepreneurship

Success Story: 6

Integrated Farming for Nutritional Security and Income Enhancement in Car Nicobar

Shri Patrick Jerimah, a 75-year-old progressive farmer from Tapoiming Village, Car Nicobar, manages a 3.5-acre integrated farm and supports a family of seven. With formal education up to 7th standard and decades of farming experience, he has emerged as a role model by adopting diversified and sustainable farming practices with technical support from ICAR–KVK, Nicobar. His farm includes cultivation of vegetables such as okra, brinjal, cowpea, bitter gourd, chilli, radish, amaranths and spinach, along with fruit crops including papaya, banana, pineapple, custard apple, breadfruit, jackfruit and breadnut, all well suited to the island ecosystem. These enterprises ensure year-round household food and nutritional security while generating regular income through direct farm-gate sales without middlemen.

With consistent interventions from ICAR–KVK, Nicobar, Shri Patrick strengthened his farming system through rainwater harvesting using a Jalkund with HDPE lining and efficient irrigation using a treadle pump. Productivity was enhanced through the introduction of improved brinjal varieties (CIARI-1, CIARI-2 and IIHR lines), supply of bio-inputs such as Trichoderma and bio-consortia, mechanization support including brush cutter, power weeder and power tiller, and adoption of the DweepVertigrow vertical gardening system for leafy vegetables. Livestock integration through piggery, backyard poultry and goats further improved income diversification and nutrient recycling. As a result, the net returns from his farm increased substantially, with overall net income rising from ₹0.82 lakh before intervention to ₹3.92 lakh after intervention, and the benefit–cost ratio improving from 2.08 to 2.60. Apart from economic gains, the farm has generated local employment, promoted environmentally sustainable practices and inspired neighboring farmers to adopt integrated farming. Shri Patrick Jerimah's success highlights how scientific support and diversification can ensure income stability, environmental sustainability and resilience for smallholder farmers in the Nicobar Islands.

Contributors: *Dr. Santosh Kumar, Dr. Sanketh. G.D., Shri. Deepoo Meena, Dr. Ajmal S and Dr. Akshay.*

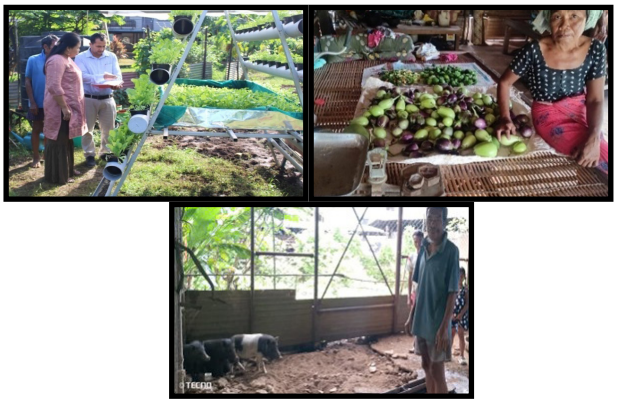


Fig: 36 Progressive Farmer Practicing Integrated Farming in Car Nicobar

Success Story: 7

Tribal Women Empowerment through Intensive and Sustainable Farming in Car Nicobar

Mrs. Esther Reginal, a progressive tribal woman farmer from Big Lapathy village, Car Nicobar Island, initiated an intensive farming system on her land with strong family support and comprehensive technical backing from ICAR–KVK, Nicobar. Through systematic planning and scientific guidance, she transformed a portion of her land into a diversified, multi-crop intensive farming garden comprising vegetables such as brinjal, okra, bottle gourd, sweet corn and green gram, along with perennial fruit crops including coconut. The cropping pattern was designed to ensure year-round production, household nutritional security and regular income. KVK Nicobar supported her from the initial stage through site selection, land preparation and supply of quality seeds and planting materials, while promoting soil health through organic compost, bio-consortia and eco-friendly crop protection measures. Regular hands-on training and field-level guidance enabled her to adopt scientific planting, irrigation and pest management practices, ensuring sustained productivity.

To enhance crop performance, high-yielding varieties such as CIARI-1 and CIARI-2 brinjal, Pusa Sweet Corn and Pusa Vishal green gram were introduced, along with bio-inputs including Trichoderma, bio-consortia, Neemastra and lure traps, and mechanization support through power tillers and weeders. As a result, farm productivity and profitability improved substantially, with net returns increasing from ₹28,400 before intervention to ₹68,000 after intervention and the overall benefit–cost ratio rising from 1.71 to 2.55. Direct marketing of fresh produce ensured better price realization, particularly for high-value crops like sweet corn and green gram. Beyond economic gains, Mrs. Esther's adoption of eco-friendly practices enhanced soil health and biodiversity while reducing dependence on chemical inputs. Her success has inspired neighboring women farmers and SHGs, leading to wider adoption of intensive farming practices in the region. The initiative has also received recognition from district administration officials, highlighting the role of women-led intensive farming in improving income, nutrition and sustainable livelihoods in Car Nicobar.

Contributors: *Dr. Santosh Kumar, Dr. Sanketh G.D. Shri. Deepoo Meena, Dr. Ajmal S. and Dr. Akshay*

Fig: 37 Mrs. Esther Reginal practicing intensive farming—empowering tribal livelihoods through sustainable agriculture.

Success Story: 8

Integrated Farming System for Sustainable Income and Resource Efficiency in Car Nicobar

Mr. Leslie, a 42-year-old progressive farmer from Tamaloo Village, Car Nicobar, manages an integrated farming system on about 2000 m² of land, excluding coconut plantation, and supports a family of ten. With education up to 7th standard and strong motivation, he transformed his farm into a diversified and resource-efficient unit with consistent technical support from ICAR–KVK, Nicobar. His farming system integrates cultivation of vegetables such as okra, brinjal, chilli, leafy vegetables and cucurbits, along with fruit crops including banana, papaya and pineapple, all suited to the local agro-climatic conditions. In addition, he maintains poultry, goats and pigs, along with copra production from coconut and beekeeping, ensuring year-round household nutrition, steady income and reduced dependency on a single enterprise.

With scientific interventions from ICAR–KVK, Nicobar, Mr. Leslie adopted improved and disease-resistant crop varieties, regular use of bio-fertilizers and bio-pesticides, low-cost rainwater harvesting structures, mechanization support and integration of beekeeping to enhance pollination and income. Livestock waste is efficiently recycled as organic manure, improving soil fertility and reducing input

costs, while poultry, piggery and goats provide additional revenue and support a closed nutrient cycle. As a result, farm profitability improved substantially, with overall net returns increasing from ₹14,000 before intervention to about ₹2.43 lakh after intervention and the benefit–cost ratio improving from 2.00 to 2.55. Direct sale of farm produce further enhanced profit margins by eliminating middlemen. Beyond economic gains, the integrated system strengthened environmental sustainability through improved soil health, biodiversity conservation and climate resilience. Mr. Leslie's farm has emerged as a demonstration model, inspiring neighboring farmers and youth to adopt integrated farming systems, thereby contributing to improved livelihoods, food security and sustainable agricultural development in the Nicobar Islands.

Contributors: *Dr. Santosh Kumar, Dr. Sanketh. G.D., Shri. Deepoo Meena, Dr. Ajmal S. and Dr. Akshay*

Fig. 38 Mr. Leslie demonstrating integrated farming for sustainable income and resource efficiency

Success Story: 9

Integrated Farming System as a Catalyst for Tribal Youth Engagement in Agriculture in Car Nicobar

Shri Jackson, a 35-year-old educated tribal youth from Tapoiming Village, Car Nicobar, manages an integrated farming system on about 1500 m² of land and supports a family of eight. With a proactive mindset and strong interest in scientific farming, he has emerged as a role model for youth engagement in agriculture in the Nicobar Islands. His farming system integrates cultivation of vegetables, fruits and leafy greens with livestock components, ensuring year-round household food security and additional income through local sales. A notable achievement is the establishment of a scientific piggery unit—one of the first structured pig rearing initiatives in the area—marking a shift from traditional open ranching to modern livestock management. Backyard poultry further supplements income and provides organic manure, strengthening the integrated and resource-efficient nature of his farm.

With consistent technical and input support from ICAR–KVK, Nicobar, Shri Jackson adopted high-yielding varieties of crops, integrated pest management practices, mechanization support and the DweepVertigrow vertical farming system to enhance productivity within limited space. Scientific piggery management was strengthened through improved feed, mineral supplementation and veterinary support, while exposure visits and regular advisory services enhanced his technical capacity. As a result, diversified enterprises significantly improved farm profitability, with net returns increasing from ₹12,500 before intervention to about ₹1.65 lakh after intervention and the overall benefit–cost ratio improving from 2.50 to 2.87. Recycling of organic waste and reduced dependence on external inputs promoted environmental sustainability and efficient nutrient cycling. Beyond economic gains, Shri Jackson's success has inspired local youth to view agriculture as a viable and dignified livelihood. His integrated farming model demonstrates how scientific support and diversification can attract youth participation, strengthen income stability and contribute to sustainable agricultural development in the Nicobar Islands.

Contributors:*Dr. Santosh Kumar, Dr. Sanketh G.D., Shri. Deepoo Meena, Dr. Ajmal S. and Dr. Akshay*

Fig. 39 Shri. Jackson showcasing integrated farming—engaging tribal youth in sustainable agriculture.

9. Information on other Section

9.1 Priority Setting, Monitoring and Evaluation (PME) Cell

The Priority Setting, Monitoring and Evaluation (PME) Cell coordinated priority planning, monitoring, and evaluation projects and research activities of the Institute and ensured timely compilation and submission of all statutory and institutional reports, including the Institute Annual Report, DARE/ICAR reports, Cabinet Monthly and Quarterly Reports, Annual Plan, NEST submissions, 12-Point Programme reports, parliamentary questions, RTI replies, newsletters, and women participation reports. The Cell is monitoring and verifying documents being submitted for CAS and direct selection. It is facilitating institutional committees and meetings such as the Institute Research Council (IRC), PME Committee (PMEC), Germplasm Identification Committee, Award Screening Committee, and Publication Review Committee, and maintained a centralized repository of RPFs/RPPs of institute-funded projects along with annual reports and publications. The XVI Institute Research Council of ICAR-Central Island Agricultural Research Institute, S.V. Puram, was held during 24–25 April 2025 whereinprogress of29 ongoing projectsandone new institute-funded project was reviewed. PME was involved in compilation and submission of reports for EFC (2025-2031) and Vikshit Bharat 2025. A study circle has been initiated to strengthen scientific discourse, including refinement of research manuscripts, presentation of research outputs, and discussion of recent scientific advancements.

9.2 ICAR- CIARI Library

The library houses 7,319 books covering agriculture, island-specific research, CCS rules, Rajbhasha, and allied disciplines. The library has adopted the Koha Integrated Library Management System, with data updation currently in progress. It maintains journals and scientific literature dating back to 1980, along with annual reports, newsletters, technical bulletins of ICAR institutes and SAUs, commission and committee reports, and reference books in Hindi, English, and other languages. The library building also served as a venue for major institutional activities, including the visit of the Parliamentary Standing Committee on Agriculture, 68 online and offline meetings, 6 interviews, 7 training programmes and 3 national conferences. A book fair was organized during school visits to promote reading and awareness of library resources.

9.3 राजभाषा गतविधियाँ (Official Language Cell activities)

वर्ष 2025 के दौरान भा.कृ.अनु.प.– केन्द्रीय द्वीपीय कृषि अनुसंधान संस्थान, श्रीविजयपुरम में राजभाषा हिंदी के प्रभावी कार्यान्वयन हेतु तिमाही आधार पर राजभाषा कार्यान्वयन समिति की बैठकें आयोजित की गईं। संस्थान में हिंदी के प्रयोग को सुदृढ़ बनाने के उद्देश्य से प्रशिक्षण, क्षमता निर्माण तथा प्रसार संबंधी गतिविधियाँ नियमित रूप से संचालित की गईं।

इस क्रम में ई-ऑफिस एवं ई-HRMS प्रणाली पर हिंदी माध्यम में एक दिवसीय कार्यशाला, कौशल समर्थन स्टाफ हेतु मूल कंप्यूटर साक्षरता पर आधारित दो दिवसीय हैंड्स-ऑन प्रशिक्षण तथा iGOT प्लेटफॉर्म के माध्यम से मोबाइल एवं कंप्यूटर प्रशिक्षण कार्यक्रम आयोजित किए गए। सभी प्रशिक्षण कार्यक्रम राजभाषा हिंदी में संपन्न हुए, जिनमें संस्थान के विभिन्न वर्गों के कर्मचारियों ने सक्रिय सहभागिता की।

राजभाषा हिंदी के प्रचार-प्रसार के अंतर्गत हिंदी पखवाड़ा-2025 का आयोजन किया गया, जिसके दौरान विभिन्न साहित्यिक एवं भाषायी प्रतियोगिताएँ आयोजित की गईं तथा विजेताओं को पुरस्कृत किया गया। इस अवसर पर संस्थान की राजभाषा पुस्तिका 'द्वीप कृषि' (प्रथम अंक) का विमोचन भी किया गया।

राजभाषा के प्रभावी कार्यान्वयन के लिए किए गए प्रयासों के फलस्वरूप संस्थान को नगर राजभाषा कार्यान्वयन समिति (नराकास), श्रीविजयपुरम द्वारा राजभाषा सांत्वना पुरस्कार (2024–25) से सम्मानित किया गया।

9.4 Institute Technology Management Unit

The Institute Technology Management Unit (ITMU) strengthened the institute's innovation-to-market pipeline through focused technology commercialization, structured IP management, and targeted outreach. Emphasis remained on patent monetization, licensing, and entrepreneurship

support in alignment with PME objectives. A total of 05 technologies were commercialised. To ensure transparent evaluation and commercialization, 16 Intellectual Property Management Committee (ITMC) and Techno-Commercial Assessment Expert Committee meetings were conducted. Regular coordination was maintained with AGRINNOVATE India Limited (AgIn) for valuation, pricing, and licensing decisions.The institute expanded its IP portfolio with granted patent (01), design patents (04), one copy right (01), grants (05). During this period, ITMU has filed Patents(05), designs (07) and copyright (01).

9.5 Agricultural Knowledge Management Unit

The Agricultural Knowledge Management Unit (AKMU) strengthened institutional ICT support and digital service delivery during the year by maintaining a robust IT infrastructure across the Institute. AKMU managed a campus-wide Local Area Network (LAN) connecting 120 computers, supported by optical fiber and CAT-6 structured cabling, and ensured uninterrupted digital operations through a 50 Mbps leased internet line. This infrastructure enabled smooth functioning of e-Office, ERP, eHRMS, PFMS, GeM, SPARROW, online reporting systems, and access to national and international web portals. The Unit regularly updated and managed the Institute website (http://ciari.res.in) and disseminated institutional activities, technologies, and advisories through official Facebook, Twitter, and YouTube platforms, enhancing outreach and visibility. AKMU also undertook procurement, installation, and maintenance of IT hardware and software, provided continuous LAN and desktop support across divisions, and delivered technical assistance for audio-visual systems in the Conference Hall, Auditorium, and Director's Committee Room during workshops and official meetings. In addition, AKMU maintained the Aadhaar Enabled Biometric Attendance System (AE-BAS) for the Institute. As part of its HRD initiatives, AKMU organized a two-day hands-on training programme on Basic Computer Literacy on 28–29 August 2025, benefiting 25 Skilled Supporting Staff, thereby strengthening digital competency at the operational level.

9.6 Sports Activities

The Annual Sports Meet of ICAR–CIARI was conducted successfully during the year, reinforcing the Institute's commitment to employee welfare, physical fitness, and team cohesion. Designed as an inclusive, institute-wide event, it encouraged healthy competition and sportsmanship among scientific, technical, administrative, and supporting staff, along with their families. A total of 27 disciplines (14 indoor and 13 outdoor) were organized. Outdoor events included track races (100 m, 200 m, 400 m, and relays) and field events such as javelin throw, shot put, discus throw, high jump, and long jump. Team sports like cricket, football, volleyball, badminton, table tennis, carrom, chess, and tug of war witnessed enthusiastic participation. Family events for children added vibrancy and strengthened community bonding. The Institute also participated in the Eastern Zonal Sports Tournament 2025 at ICAR–IVRI, Bareilly, securing 10 medals. Qualified players further competed at the Inter-Zonal Tournament at ICAR–IISR, Lucknow, winning one medal in carrom. The meet significantly promoted fitness, teamwork, talent identification, and institutional harmony.

Fig: 40 Annual Sports Meet

9.7 Women's empowerment activities

Skilling Krishi Sakhis in Natural Farming

A one-day training programme on "Skilling Krishi Sakhis in Natural Farming" was organized by the team (Mr. Rakesh Dawar, Er. Manoj Kumar, Mr. Yatharth Sharma, Mr. Subham Debroy) of ICAR-Krishi Vigyan Kendra, Nimbudera on 01 July 2025 to strengthen women's participation in sustainable agriculture. The programme focused on building technical capacity of 21 rural women (Krishi Sakhis) in low-input, chemical-free farming practices suitable for the island ecosystem. The programme emphasized on the role of natural

farmingin improving soil health and reducing production costs for small and marginal farmers and technical inputs were provided. Preparation and field application of Beejamrit, Jeevamrit, Neemastra, and Agniastra was demonstrated.

Fig: 41 Krishi Sakhis in Natural Farming

Maternal Nutrition and Wellness for Pregnant and Lactating Mothers

Fig. 42 Three-day training on maternal nutrition

ICAR–KVK, North and Middle Andaman conducted a three-day training programme on "Maternal Nutrition and Wellness for Pregnant and Lactating Mothers" from 17–19 November 2025 for extension functionaries, including Anganwadi Workers of Basantipur Gram Panchayat. Mr. Yatharth Sharma (SMS, Home Science) highlighted the importance of strengthening community-level support for maternal nutrition, especially in rural and tribal areas. Er. Manoj Kumar, In-charge, encouraged participants to enhance nutrition awareness in their field areas. Chief Guest Dr. S. Triveni Manju, GDMO (Ayurveda), PHC Billyground, emphasized early risk identification and timely referral to improve maternal health outcomes.

9.8 Swacch Bharat Abhiyan

Waste to Art Initiative:

Under the Swachh Bharat Abhiyan observance (17 September–2 October 2025), , ICAR–Central Island Agricultural Research Institute, Sri Vijaya Puram, organized targeted cleanliness and awareness activities. A Waste to Art Initiative was conducted by Dr. Abhilash on 27 September 2025 at the Bloomsdale Research Farm, Chouldari, Farm-based biodegradable wastes such as coconut leaves and straw were creatively repurposed into functional and artistic structures, demonstrating practical, low-cost approaches to waste reuse, on-site waste reduction, and sustainable resource management in agricultural settings.

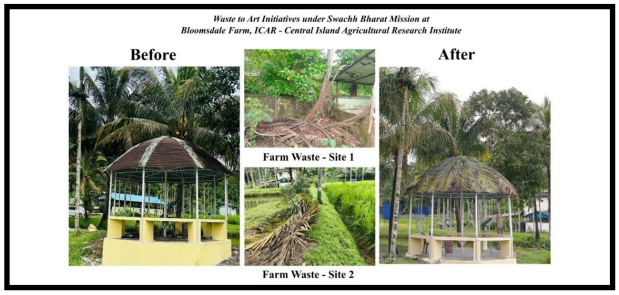


Fig. 43 Waste to Art initiative showcasing sustainable reuse of farm waste under Swachh Bharat Abhiyan.

Engagement with School Children

Fig. 44 Essay competition promoting plastic-free and clean living.

An essay competition was organized on 19 September 2025 at Government Senior Secondary School, Bathubasti, Sri Vijaya Puram, involving 20 students from Secondary and Senior Secondary classes. The themes: "My Island, My Responsibility: Say No to Plastic" and "Clean Surroundings, Healthy Living"- focused on plastic reduction, cleanliness, and public health. Dr. Abhilash and Dr. Prabhu delivered an awareness talk highlighting the role of youth in sustaining cleanliness initiatives, while Mr. Dasan Pushparaj, Principal, presided over the programme and encouraged continued student participation in Swachh Bharat activities. Prizes were distributed during the school assembly to recognize merit and reinforce behavioural change towards a clean and plastic-free environment.

Waste to Wealth

A "Waste to Wealth" workshop was organized on 20 December 2025 at the Integrated Farming System (IFS) Farm, CIARI, Garacharama. The workshop focused on scientific management of agricultural waste, particularly coconut fronds,

which are commonly burnt or dumped in coconut-growing areas, causing environmental pollution. Practical demonstrations showed the conversion of coconut fronds into nutrient-rich organic manure through mechanical shredding followed by vermicomposting, which significantly reduces decomposition time and improves compost quality. The initiative highlighted measurable benefits such as improved soil health, reduced dependence on chemical fertilizers, and creation of value-added organic inputs for farming systems. The programme directly aligned with Swachh Bharat objectives by promoting on-farm waste recycling, reducing open burning, and encouraging sustainable and environmentally responsible agricultural practices, thereby effectively demonstrating the concept of waste-to-wealth.

Fig. 45 "Waste to Wealth" workshop demonstrating sustainable conversion of farm waste into organic manure.

9.9 PG Cell

During 2025, the PG Cell coordinated internship programmes for 19 students at ICAR–CIARI, comprising 07 M.Sc. and 12 B.Sc./B.Tech students. Internship durations ranged from 1 to 6 months, during which students received structured academic mentoring and practical exposure through field experiments, laboratory work, and farmer-oriented extension activities across various scientific divisions. The programme strengthened academic–research linkages, enhanced students' practical and research skills, and supported ongoing research and extension activities of the Institute. The internships generated a revenue of ₹3.00 lakh, contributing to institutional resources while promoting capacity building and experiential learning among undergraduate and postgraduate students.

9.10 Estate Section

During the year, the Estate Section supported institutional research and residential facilities through infrastructure creation, utility management, and maintenance works. New infrastructure worth ₹46.54 lakh was created, including construction of a 100 m^2 polyhouse, 45 m^2 hatchery shed, 60 m^2 field distillation unit shed, 20 m^2 fisheries information hub, and four security kiosks at farm boundaries. A farm pond of 10.50 lakh litre capacity was constructed for irrigation, and 900 m^2 of rocky land was developed for establishing an agro-meteorological observatory. Irrigation infrastructure was strengthened with installation of four 5,000-litre PE tanks, one 15 HP electric pump, and G.I. pipeline for horticultural experimental blocks. Renewable energy capacity was augmented with installation of an additional 10 KW solar power plant, and 23 solar street lights were commissioned in residential and farm areas. Align and maintenance works amounting to ₹44.53 lakh were carried out in residential and non-residential buildings, including replacement of damaged G.I. water pipelines, provision of slatted flooring in livestock sheds, arresting of roof leakages in office buildings, fencing of 200 m cyclone-damaged boundary, and renovation and painting of staff quarters, laboratories, guest house, and extension facilities. Farm infrastructure upgrades included renovation of a 300 m^2 polyhouse, extension and partitioning of animal sheds, renovation of Nicobari hut and threshing floor, improvement of internal roads and gate access, and safety upgrades to water storage facilities. Measures were also implemented to address sanitation and health concerns in residential quarters by sealing structural gaps to prevent bird infestation. Continuous water supply, electrical maintenance, air-conditioning, RO systems, and uninterrupted power to critical facilities through standby DG sets were ensured throughout the year.

9.11 Central Instrumentation Facility

Central Instrumentation Facility (CIF) provides centralized analytical and laboratory support to

all research divisions of the Institute, catering to scientists, students, and interns. The facility houses over 20 major scientific instruments, including GC–MS, lyophilizer, thermal cycler, gel electrophoresis and documentation systems, spectrophotometers, biosafety cabinet, refrigerated and mini centrifuges, analytical balances, BOD incubators, deep freezers, water purification and double distillation units, along with routine laboratory infrastructure. All instruments were kept operational through scheduled maintenance and timely servicing during the year. One biosafety cabinet was newly procured and commissioned to strengthen biosafety compliance. The facility conducted orientation programmes for all newly inducted scientific and technical staff and organized two hands-on demonstration sessions on GC–MS sample processing to enhance in-house analytical capability.

9.12 Round up of Institute Activities

Parliamentary Standing Committee on Agriculture, Animal Husbandry; Food Processing visited ICAR-CIARI, Sri Vijaya Puram

The Parliamentary Standing Committee on Agriculture, Animal Husbandry and Food Processing visited ICAR–Central Island Agricultural Research Institute (ICAR-CIARI), Sri Vijaya Puram, from 19–21 January 2025 to review institute performance and assess implementation of the National Mission on Agricultural Extension and Technology (NMAET) in island conditions. The visit was conducted under the Chairmanship of Shri Charanjit Singh Channi, Hon'ble Member of Parliament, along with 13 Members of Parliament. Senior officials from ICAR Headquarters, including Dr. S. K. Singh, Deputy Director General (Horticultural Sciences) and Dr. V. B. Patel, Assistant Director General (Fruits & Plantation Crops), and representatives from the Department of Agriculture & Farmers Welfare, Government of India, participated in the review. The Director, ICAR-CIARI, presented institute achievements in research, extension and technology dissemination through KVKs and regional research stations, with emphasis on island-specific farming systems. The Committee visited key facilities, including the World Coconut Germplasm Centre, spice-based plantation system, KVK South Andaman, plant propagation units, livestock (dairy, goat &duck) units, ornamental fish breeding facility, and fodder development plots, and reviewed technology exhibits on crop varieties, value-added products and conserved germplasm. The Committee interacted with progressive and award-winning farmers and entrepreneurs, including Smt. K. Chellamel (Padma Shri awardee), Shri Chintaharan Biswas (developer of 'Chinta Mango'), Smt. Rajeswari and Smt. Meenakshi (poultry entrepreneurs), Smti. Nitu Sindhu (mushroom entrepreneur) and tribal farmers from the Nicobar Islands, to assess on-ground impact of ICAR interventions. As part of the visit, the Committee also planted saplings of improved coconut varieties, reinforcing the focus on sustainable plantation development in the islands.

Fig. 46 Parliamentary Standing Committee visits ICAR–CIARI

Upgradation of Agro-meteorological Observatory at ICAR-CIARI

The Agro-meteorological Observatory ICAR-CIARI, has been upgraded under the IMD-sponsored Gramin Krishi Mausam Seva (GKMS) project to strengthen weather monitoring and agro-advisory support. The observatory is now equipped with eight core instruments—rain gauge; Stevenson screen with four thermometers (dry bulb, wet bulb, maximum and minimum); grass minimum thermometer; open pan evaporimeter; soil thermometer; wind vane; and wind anemometer—while one additional instrument, a sunshine recorder, has been procured and is scheduled for installation. The upgraded facility enables routine

observation of nine key agro-meteorological parameters: rainfall, maximum and minimum air temperature, relative humidity, soil temperature, wind speed, wind direction, evaporation, sunshine duration, and grass minimum temperature. To improve data quality, the observatory has been relocated to Garacharma Farm, providing better wind fetch and open exposure, thereby enhancing measurement accuracy.

Fig. 47 Upgraded agro-met observatory for improved weather monitoring.

Summer School on "Livestock Reproduction Management under Climate Change"

ICAR–Central Island Agricultural Research Institute (ICAR-CIARI), Sri Vijaya Puram, conducted a 21-day ICAR-sponsored Summer School on "Livestock Reproduction Management Under Impending Climate Change" from 12 February to 4 March 2025, with participation of 20 scientists (14 male, 6 female) drawn from 10 states- Rajasthan, Uttar Pradesh, Bihar, Haryana, Karnataka, Tamil Nadu, Andhra Pradesh, Gujarat, Madhya Pradesh, and Assam. The Summer School adopted a multidisciplinary, application-oriented approach, combining climate risk assessment, reproductive management strategies, and hands-on training in advanced biotechnological tools for livestock reproduction. The valedictory function was held on 4 March 2025 and was graced by Dr. R.C. Agrawal, Deputy Director General (Education), ICAR, New Delhi, as Chief Guest in virtual mode, who emphasized climate adaptation, technology integration, and the role of emerging tools including Artificial Intelligence in improving efficiency in livestock reproduction management. Certificates were distributed by Dr. E.B. Chakurkar, who commended the organizers and resource persons and emphasized the importance of translating acquired knowledge into field-level climate mitigation strategies for sustainable livestock productivity.

Fig. 48 21-day ICAR Summer School on climate-resilient livestock reproduction management

ICAR-CIARI Hosts various Travel and Tour Associations; Representative for Agro-eco Tourism Initiative

ICAR–Central Island Agricultural Research Institute (ICAR-CIARI) organized an interaction meeting with representatives of three major tourism bodies Andaman Association of Tour Operators, Andaman Travel Agent Association, and Andaman Nicobar Tour Operators Association at its Sippighat and Garacharma farms to explore collaboration under the proposed Agro-Eco Tourism initiative. The visiting delegation was briefed and guided by Dr. E.B. Chakurkar, Director, ICAR-CIARI, and Dr. Ajit Arun Waman, In-charge, Sippighat Farm, who showcased key research-based attractions and farm facilities relevant for tourism integration. Core facilities identified for agro-tourism development included the Nakshatra Garden, Horticulture Plant Propagation Unit, Dweep Medicinal Garden, World Coconut Germplasm Centre, Plantation-Based Organic Spice Garden, Ornamental Fish Breeding Unit, Fancy Birds Unit, guided nature

Fig. 49 ICAR-CIARI engages travel and tour associations to promote agro-eco tourism initiatives

trekking routes, and an organic farm produce sale counter. Representatives of the tourism associations provided focused inputs on visitor engagement, emphasizing structured guided tours, live demonstrations of farming technologies, medicinal plant interpretation, and biodiversity-centric experiences. The interaction resulted in consensus on positioning ICAR-CIARI farms as a science-based agro-eco tourism destination for both domestic and international visitors, with emphasis on sustainable agriculture, biodiversity conservation, and experiential learning. The feedback received will be used to operationalize and refine the institute's Agro-Eco Tourism framework in the Andaman and Nicobar Islands.

State Level Seminar on Spices, Arecanut and Medicinal Plants

A three-days State Level Seminar (5–7 March 2025) on "Entrepreneurship Opportunities for Island Youth and Women in Spices, Arecanut and Medicinal Plants" was organized by ICAR–Central Island Agricultural Research Institute (CIARI), Sri Vijaya Puram, in collaboration with the Directorate of Arecanut and Spices Development, Kozhikode and ICAR-AICRP on Plantation Crops, Kasaragod. The seminar was inaugurated by Ms. Pallavi Sarkar, IAS, Secretary (Agriculture), Andaman & Nicobar Administration, in the presence of Dr. E.B. Chakurkar, Director, ICAR-CIARI, who highlighted CIARI's ongoing technical support for island-specific agripreneurship and the need for inter-sectoral coordination to enable start-ups. The Chief Guest emphasized aggregation of dispersed island produce, along with focused packaging, branding, and marketing for national and international competitiveness. A key highlight was the felicitation of Mrs. R. Karthika Devi, a local entrepreneur who licensed Dweep CinnRub technology from ICAR-CIARI. The technical programme featured expert lectures by Dr. T.E. Sheeja (ICAR-IISR, Kozhikode) on spice sector entrepreneurship, Dr. R.S. Matche (CSIR-CFTRI, Mysuru) on packaging technologies, Dr. Smitha G.R. (ICAR-IIHR, Bengaluru) on value addition in medicinal and aromatic plants, and Dr. Nagaraja N.R. (ICAR-CPCRI, RS Vittal) on arecanut waste utilization. Island-specific agripreneurship opportunities were addressed by Dr. Pooja Bohra, Co-Organizing Secretary, while Dr. Ajit Arun Waman, Organizing Secretary, conducted hands-on sessions on scientific harvesting, post-harvest processing, value addition, machinery use for drudgery reduction, and facilitated field visits on spice- and plantation-crop-based agro-ecotourism. Dr. Pooja Bohra also coordinated exposure visits to CIARI's nursery enterprises and medicinal plant garden. The seminar recorded participation of 71 participants from South Andaman, North & Middle Andaman, Car Nicobar, Shaheed Dweep, Baratang, and Little Andaman, including officials from the Departments of Agriculture and Rural Development. Participants received scientifically processed island spices and quality planting material as part of the programme outcomes, reinforcing the seminar's focus on practical, enterprise-oriented capacity building.

Fig. 50 State-level seminar promoting agripreneurship in spices, arecanut and medicinal plants for island youth and women

Workshop on "Harnessing the Potential of Agro-Ecotourism in the A & N Islands"

A one-day workshop on "Harnessing the Potential of Agro-Ecotourism in the Andaman & Nicobar Islands" on 27 March 2025 was jointly organised by ICAR–Central Island Agricultural Research Institute (ICAR-CIARI), and the Andaman Science Association. The workshop recorded participation of 96 stakeholders, including officials from the Directorate of Agriculture, A&N Administration, representatives of tour operators, tourist vehicle associations, hotel and resort industry, progressive farmers, entrepreneurs, and scientists. During the workshop, it was highlighted the need to expand agro-ecotourism beyond Swaraj Dweep (Havelock Island) and Shaheed Dweep (Neil Island), emphasizing integration of bird and butterfly

watching, given the islands' global biodiversity significance, and stressed social-media-based promotion of agro-ecotourism sites. ICAR-CIARI Agro-Ecotourism Model developed at Garacharma and Sippighat farms, underlined its potential for farm income enhancement, rural livelihood diversification, and cultural conservation, and informed that the newly developed agro-ecotourism site is operational, with entry ticket rates under finalization. The technical session featured presentations by Dr. E.B. Chakurkar on ecotourism models, Dr. Ajit Arun Waman, Senior Scientist, on horticulture-based agro-ecotourism, and Dr. Jai Sunder, Principal Scientist & Head, on integration of aquatic life and animals in ecotourism systems. Mr. Ankit Tripathy (General Secretary, Tourist Vehicle Owners' Association), Mr. T.K. Jijith Rekh (Owner, Junglee Mirchi Hotel & Resort), Mrs. Bhanumathi (progressive farmer and agri-entrepreneur), and Mrs. Rani (progressive farmer) stressed the need for policy facilitation, digital promotion, identification of potential sites by the Tourism Department, and targeted subsidies for rural agro-ecotourism development. The programmeconcluded with an Agro-Eco Walk at Garacharma and Sippighat farms. The programme was organised by Dr. T. Sujatha, Organizing Secretary.

Fig. 51 Workshop on agro-ecotourism highlighting livelihood diversification and sustainable tourism in the islands

Kisan Mela 2025 at CIARI

The two-day Kisan Mela 2025 at ICAR-CIARI concluded with a valedictory function on 19 March 2025, with the participation of over 400 farmers from South, Middle, and North Andaman & Nicobar Islands. Dr. S. K. Chaudhary, Director General, Fertilizer Association of India and former DDG (NRM), ICAR, New Delhi, as Chief Guest, appreciated the strong farmer response and emphasized effective technology transfer by CIARI and KVK scientists, encouraging farmers to disseminate the acquired knowledge within their villages. He highlighted the relevance of organic farming, drones, IT applications, and farm mechanization for enhancing productivity, and stressed the role of youth participation, noting that young achievers and students were recognized during the Mela to motivate engagement in agriculture, entrepreneurship, and research. He also advised farmers to utilize institutional scientific support and explore agro-eco tourism by integrating crops, livestock, flowers, culture, and heritage. In his presidential address, Dr. E. B. Chakurkar, Director, ICAR-CIARI, expressed satisfaction with the successful conduct of the event, noting the active participation of farmers and stakeholders, the consistent positive feedback received annually, and the importance of farmer inputs in shaping future research projects to address region-specific challenges and improve product quality. During the Mela, five progressive farmers from three districts were honored for successful technology adoption and entrepreneurship, and best stall awards were presented to ICAR-CIARI, the Department of Agriculture, and Self-Help Groups (SHGs). The programme commenced with a welcome by Dr. V. Damodaran, Senior Scientist & Head, KVK North & Middle Andaman; an overview by Dr. Santosh Kumar, Senior Scientist & Head, KVK Nicobar; and concluded with a vote of

Fig 52 Kisan Mela 2025

thanks by Dr. Y. Ramakrishna, Principal Scientist & Head of KVKs. The event was coordinated by Shri Mohit, Subject Matter Specialist (SMS).

Training cum Exhibition on "Integrated Farming System (IFS) for Sustainable Livelihoods in Nicobar" at community hall Tapoiming, Car nicobar.

"Integrated Farming System (IFS) for Sustainable Livelihoods in Nicobar" at Tapoiming Village, Car Nicobar to promote income diversification and livelihood resilience under island conditions. The programme was inaugurated by Shri Amit Kale, IAS, Deputy Commissioner, Nicobars, in the presence of key dignitaries and representatives from line departments and the local community. Technical sessions covered IFS planning, crop–livestock–fish integration and resource recycling suited to the island ecosystem. An exhibition on IFS components, farm tools, improved technologies and local products was also organised. Agricultural inputs were distributed to support adoption of improved practices. A total of 70 farmers (27 men and 43 women) participated, with active interaction and discussions on practical implementation of IFS in Nicobar conditions.

Fig. 53 IFS programme at Car Nicobar promoting sustainable livelihoods and income diversification among farmers

ICAR-CIARI and NABL Organize Awareness Program on Laboratory Accreditation

An awareness program on laboratory accreditation was organized by ICAR-CIARI in collaboration with the National Accreditation Board for Testing and Calibration Laboratories (NABL) at the Sri Vijayapuram campus to strengthen understanding of NABL accreditation requirements and quality systems. The program focused on accreditation scope, documentation, quality management systems, technical competence, compliance with ISO/IEC standards, internal audits, and the role of accreditation in improving reliability, traceability, and acceptance of laboratory test results. Practical aspects of the accreditation process, common non-conformities, and preparedness strategies were discussed to support laboratories intending to seek or maintain NABL accreditation. The program was attended by 50 participants representing research institutions, academic laboratories, and allied organizations from across the Andaman Islands. The event was coordinated by Dr. R. R. Alyethodi, Senior Scientist, ICAR–CIARI, and witnessed active participation from stakeholders interested in aligning laboratory practices with national and international benchmarks.

Fig. 54 ICAR-CIARI and NABL Organize Awareness Program on Laboratory Accreditation

World Intellectual Property Day, 2025

World Intellectual Property Day 2025 was observed at ICAR-CIARI to highlight the role of intellectual property in protecting innovations and strengthening India's knowledge-driven economy. Dr T. Sujatha, Principal Scientist and In-charge, Institute Technology Management Unit (ITMU), informed that the institute has significantly strengthened its IPR portfolio, with 10 granted patents, 9 registered animal and plant genetic germplasms, 11 commercialised technologies, 6 ICAR-certified technologies, and 1 registered trademark, reflecting sustained efforts in research translation and technology protection. Dr E. B. Chakurkar, Director, ICAR-CIARI, emphasized that every researcher generates intellectual assets that must be identified, protected, and responsibly utilized, and stressed the need for continued awareness on IPR among stakeholders. The programme was attended by 72 participants,

including scientists, project staff, and students from ICAR-CIARI, ICMR, and NIOT, marking active inter-institutional engagement in IPR awareness.

National Workshop on "Sustainable Agriculture through Natural Farming"

A National Workshop on "Sustainable Agriculture through Natural Farming" was organized on 13 May 2025 at Sri Vijaya Puram by ICAR–Central Island Agricultural Research Institute (CIARI) in collaboration with the Andaman Science Association (ASA) and Gujarat Natural Farming Science University (GNFSU). The inaugural session began with the ICAR song and lamp lighting, followed by a welcome address by Mr. Talaviya Harshangkumar, Scientist and Organizing Secretary. Dr. E.B. Chakurkar, Director, ICAR-CIARI and President, ASA, delivered the opening remarks. Dr. R.A. Gurjar, Dr. N. Ravisankar and Dr. A. Velmurugan addressed the participants as Guests of Honour, highlighting the importance of natural farming for sustainable soil and resource management. Several publications were released during the session. The Chief Guest, Dr. C.K. Timbadia, Hon'ble Vice-Chancellor, GNFSU, delivered the keynote address, emphasizing the scientific basis and practical applicability of natural farming. The session concluded with a vote of thanks by Dr. I. Jaisankar.

The technical session featured expert lectures on principles, microbial dynamics, agro-ecological benefits, and bio-input preparation in natural farming. The workshop witnessed participation from scientists, farmers, KVK South Andaman, and virtual participants from Minicoy and other KVKs, promoting knowledge exchange for island ecosystems.

Fig. 55 National workshop on natural farming promoting sustainable agriculture and soil health

केंद्रीय द्वीपीय कृषि अनुसंधान संस्थान में हिंदी पखवाड़ा–2025 का समापन समारोह श्रीविजयपुरम, 29 सितम्बर 2025

भा. कृ. अनु. प.– केंद्रीय द्वीपीय कृषि अनुसंधान संस्थान, श्रीविजयपुरम के डॉ. टी. आर. दत्ता सम्मेलन हॉल में दिनांक 29 सितम्बर 2025 को हिंदी पखवाड़ा–2025 का समापन समारोह आयोजित किया गया। पखवाड़े के दौरान हिंदी के प्रयोग एवं प्रोत्साहन हेतु विभिन्न प्रतियोगिताएँ एवं गतिविधियाँ आयोजित की गईं, जिनमें हिंदी एवं अहिंदी भाषी कर्मचारियों की सक्रिय सहभागिता रही।

इस अवसर पर संस्थान की राजभाषा पत्रिका का लोकार्पण भी किया गया। समापन समारोह के अंतर्गत तत्काल भाषण प्रतियोगिता का आयोजन हुआ, जिसमें दोनों वर्गों के कर्मचारियों ने उत्साहपूर्वक भाग लिया।

पखवाड़े के दौरान आयोजित सभी प्रतियोगिताओं के विजेताओं को नकद पुरस्कार एवं प्रमाण-पत्र प्रदान किए गए। कार्यक्रम में कुल 81 प्रतिभागियों ने भाग लिया, जिनमें वैज्ञानिक, तकनीकी, प्रशासनिक, कुशल सहायक एवं संविदात्मक कर्मचारी सम्मिलित थे।

समापन समारोह में कार्यालयीन कार्यों में हिंदी के प्रयोग को बढ़ावा देने, अहिंदी भाषी कार्मिकों को हिंदी से जोड़ने तथा राजभाषा संबंधी संवाद को सरल एवं प्रभावी बनाने पर विशेष बल दिया गया।

हिंदी पखवाड़ा–2025 का आयोजन संस्थान में राजभाषा हिंदी के प्रयोग को सुदृढ़ करने की दिशा में एक महत्वपूर्ण पहल सिद्ध हुआ।

Fig. 56 संस्थान में राजभाषा हिंदी के प्रभावी कार्यान्वयन हेतु प्रशिक्षण, कार्यशालाएँ एवं हिंदी पखवाड़ा आयोजन।

ICAR–CIARI Conducted Training Programme on Scientific Approaches to Crop Protection and Nutrient Management

ICAR–Central Island Agricultural Research Institute (CIARI) conducted a 7-day training programme on "Scientific Approaches to Crop Protection and Nutrient Management in Natural Farming, Organic Farming and Integrated Farming Systems" from 11–17 December 2025. The programme focused on scientifically validated, chemical-free crop protection and

nutrient management practices suitable for the agro-ecological conditions of the Andaman & Nicobar Islands. Technical sessions and hands-on demonstrations covered preparation and field application of Jeevamrit, Beejamrit, Ghan Jeevamrit, vermicompost, botanical extracts, and use of microbial bioagents (Trichoderma, Pseudomonas) for pest, disease, and nutrient management, along with on-farm resource recycling under integrated farming systems. The programme was inaugurated by Dr. Jai Sunder, Director, ICAR–CIARI, who emphasised climate-resilient and sustainable agriculture for island ecosystems, while Dr. R. Kiruba Sankar, Nodal Officer (HRD) highlighted capacity building of ICAR human resources. The training was coordinated by Dr. I. Jaisankar, Dr. Y. Ramakrishna, Dr. Abhilash, and Dr. Prabhu as Course Directors. Dr. I. Jaisankar outlined the objectives and relevance of the programme, and Dr. Y. Ramakrishna explained the course structure and field-oriented modules. Resource persons from the Division of Natural Resource Management, ICAR–CIARI, and KVK Sippighat, South Andaman delivered the sessions. Pre- and post-training evaluation indicated a significant improvement in participants' knowledge levels. A Hindi training manual titled "प्राकृतकि खेती, जैवकि खेती एवं एकीकृत कृषि प्रणाली में फसल संरक्षण एवं पोषक तत्व प्रबंधन हेतु आवश्यक आदान" was released and distributed as a field reference. The programme strengthened the technical capacity of staff to support farmers in adopting low-cost, eco-friendly and sustainable farming practices.

Renewal of MoU for Gramin Krishi Mausam Seva (GKMS) Project

The Memorandum of Understanding (MoU) for the Gramin Krishi Mausam Seva (GKMS) project was renewed on 1 July 2025 between the ICAR–Central Island Agricultural Research Institute (ICAR-CIARI), Sri Vijaya Puram and the India Meteorological Department (IMD), Ministry of Earth Sciences, Government of India, to continue collaborative implementation of weather-based agro-advisory services in the islands. The MoU was signed by Dr. Abhilash, Scientist and Principal Investigator (GKMS), and Dr. E. B. Chakurkar, Director, ICAR-CIARI, along with the Head, Agrometeorology Advisory Services Division (AASD), IMD, and was witnessed by the PME In-charge, ICAR-CIARI. Under this renewed agreement, the GKMS project led by Dr. Abhilash will continue operational coordination between ICAR-CIARI and IMD for generation and dissemination of timely, location-specific agrometeorological advisories to support climate-responsive agricultural decision-making for the island farming community.

48th Foundation Day Celebration

The 48th Foundation Day of ICAR-Central Island Agricultural Research Institute, Sri Vijaya Puram, was celebrated on June 23, 2025. The occasion marked the Institute's continued commitment to multidisciplinary agricultural research and development in the island ecosystem.Shri G. Santhanam, General Manager, NABARD, Sri Vijaya Puram, graced the event as the Chief Guest and highlighted the Institute's role in advancing agriculture and allied sectors in the Islands. He emphasized NABARD's initiatives in rural development and expressed interest in collaborative efforts for improving rural livelihoods. Dr. Aparup Das, Director, ICMR-RMRC, Sri Vijaya Puram, delivered the Foundation Day lecture on "Genomic Evidence for Zoonotic Origin of Malaria in India" and underscored the scope for collaboration under the One Health approach.During the programme, 10 publications were released. Progressive farmers were recognized for adopting CIARI technologies, and scientists and staff were felicitated for their contributions. On this occasion, the Institute commercialized the technology "Dweep Go Fly," a synthetic and herbal-based fly repellent.

Fig. 57 48th Foundation Day Celebration

One-Day Workshop on e-Office and e-HRMS in Official Language Hindi

A one-day workshop on "Application and Management of e-Office and e-HRMS Systems in Official Language Hindi" was organized at ICAR-Central Island Agricultural Research Institute (ICAR-CIARI), Sri Vijaya Puram, on July 9, 2025, at Dr. T. R. Dutta Conference Hall, under the chairmanship of Dr. E. B. Chakurkar, Director, ICAR-CIARI.Shri Alex Praveen Barla, In-Charge, Hindi Cell, briefed the participants on the objectives of the programme. Shri Kanishk Bhukar, Administrative Officer, delivered a lecture with live demonstration on the use of e-Office and e-HRMS systems in Hindi. The Director emphasized the importance of promoting the use of Hindi in official administrative work.The programme was attended by about 85 participants, including scientists, technical, administrative, and supporting staff.

Fig. 58 Workshop on e-Office and e-HRMS promoting official work in Hindi

Celebration of National Goat Day

ICAR-Central Island Agricultural Research Institute (ICAR-CIARI), Sri Vijaya Puram, celebrated National Goat Day on July 12, 2025, at Namunaghar village, South Andaman. An Awareness Campaign-cum-Animal Health Camp was organized under the AICRP on Goat Improvement in the newly adopted village.The programme was chaired by Dr. Jai Sunder, Head and Principal Scientist, Division of Animal Science, and inaugurated by Mr. Venketeshwar, Panchayat Pradhan, Namunaghar village. Dr. Rafeeque R. Alyethodi, Principal Investigator, AICRP on Goat Improvement and Senior Scientist, welcomed the farmers and highlighted the importance of National Goat Day and ongoing project activities. Dr. Jai Sunder addressed the gathering on scientific goat farming practices, emphasizing the role of the project in improving goat productivity, and interacted with farmers on health and management issues. A total of 25 farmers participated in the programme, which contributed to promoting scientific goat rearing and animal health awareness in the Andaman Islands.

Fig. 59 Celebration of National Goat Day

Farmers' Fair and PM Kisan Samman Nidhi Live Streaming

ICAR-Central Island Agricultural Research Institute (ICAR-CIARI), Sri Vijaya Puram, organized a Farmers' Fair along with the live streaming of the PM Kisan Samman Nidhi programme on August 2, 2025, at Dr. T. R. Dutta Conference Hall.The programme featured farmer–scientist interaction and an exhibition of technologies developed by ICAR-CIARI for the benefit of the island farming community. The event was coordinated by Dr. R. Kiruba Sankar, Senior Scientist, with participation of scientists from agriculture, animal science, and fisheries, under the guidance of Dr. E.B. Chakurkar, Director, ICAR-CIARI.A total of 130 participants from various villages of Sri Vijaya Puram and Ferrargunj taluk attended the programme.

Fig. 60 Farmers' fair with PM-KISAN live streaming and farmer–scientist interaction

79th Independence Day Celebration

ICAR-Central Island Agricultural Research Institute (ICAR-CIARI) commemorated the 79th Independence Day at its Garacharma campus and

at KVK South Andaman, KVK North and Middle Andaman, KVK Nicobar, and the Regional Station, Minicoy. The National Flag was hoisted by Dr. E. B. Chakurkar, Director, ICAR-CIARI, followed by the National Anthem. About 250 staff members and their families participated in the programme. On the occasion, the Director highlighted the Institute's achievements, including the grant of six patents and commercialization of five technologies during the year, namely DweepTickure, Dweep Leaf Separator, DweepCinn Rub, Dweep MAS Poultry Feed, and Dweep Go Fly. He also noted that 18 varieties developed by the Institute were recommended for release by the UT Sub-Committee on Seeds (SVRC), with Malabar tamarind and Indian bay leaf released for the first time in the country. The Director appreciated the efforts of the Institute staff in advancing research and outreach for the benefit of the island farming community.

Fig. 61 79th Independence Day Celebration

Two-Day Training Programme on Artificial Insemination in Goats

The Division of Animal Sciences, ICAR–Central Island Agricultural Research Institute (ICAR-CIARI), Sri Vijaya Puram, in collaboration with the Department of Animal Husbandry and Veterinary Services (AH&VS), A&N Administration, organized a two-day training programme on Artificial Insemination (AI) in goats on August 18–19, 2025, under the AICRP on Goat Improvement. The programme aimed at capacity building of field veterinarians and para-veterinary staff in advanced reproductive technologies for goat improvement. The training was coordinated by Dr. T. Perumal, Senior Scientist (Animal Reproduction), Dr. Prakash Bala, Principal Scientist (Animal Nutrition), and Dr. R. R. Alyethodi, Senior Scientist (Animal Genetics). Dr. E. B. Chakurkar, Director, ICAR-CIARI, inaugurated the programme and emphasized the role of AI in enhancing goat productivity and farmers' livelihoods. Hands-on training was imparted on semen collection, evaluation, processing, and insemination techniques at the CIARI Goat Farm. The programme was jointly organized with the Human Resource Development (HRD) Cell of ICAR-CIARI. AH&VS officials expressed their intent to utilize superior goat germplasm for genetic improvement of local breeds.

Fig. 62 Training on artificial insemination in goats

Basic Computer Literacy Training for Skilled Supporting Staff

A two-day hands-on training programme on Basic Computer Literacy for Skilled Supporting Staff was conducted at the Agricultural Knowledge Management Unit (AKMU), ICAR-Central Island Agricultural Research Institute (ICAR-CIARI), on August 28–29, 2025, under the Human Resource Development (HRD) initiative.The programme was inaugurated by Dr. E. B. Chakurkar, Director, ICAR-CIARI, who emphasized the importance of computer literacy for effective use of digital platforms such as e-HRMS and SPARROW in official and service-related activities. Dr. R. Kiruba Sankar, Senior Scientist and HRD Nodal Officer, provided an overview of the programme and upcoming HRD initiatives. Shri D. Karunakaran,

Fig. 63 Hands-on training on basic computer literacy for supporting staff under HRD initiative.

Scientist and Course Director, welcomed the participants and outlined the training objectives. Hands-on training covering basic computer skills, e-HRMS, email usage, and related applications was imparted by Smt. Asma Bibi, Senior Technical Assistant, Shri K. Ali Akbar, Technician, and Mr. C. P. Vijayan, Young Professional-I. A total of 25 Skilled Supporting Staff participated in the programme.

Farmer–Scientist Interaction and PM Dhan Dhanya Krishi Yojana Live Streaming

ICAR-Central Island Agricultural Research Institute (ICAR-CIARI), Sri Vijaya Puram, organized a Farmer–Scientist Interaction along with the live streaming of the PM Dhan Dhanya Krishi Yojana on October 11, 2025, at the T. R. Dutta Conference Hall.The programme was led by Dr. Jai Sunder, Director, ICAR-CIARI, with participation of scientists from agriculture, animal science, and fisheries science. The event included interaction with farmers and dissemination of ICAR-CIARI technologies aimed at promoting sustainable and productive agriculture in the island ecosystem.

A total of 141 participants (72 male and 69 female) attended the programme, including 101 farmers (43 male and 62 female). The programme facilitated awareness and understanding of the PM Dhan Dhanya Krishi Yojana among the farming community.

Fig. 64 Farmer–scientist interaction with live streaming of PM Dhan Dhanya Krishi Yojana.

Vigilance Awareness Week

ICAR-Central Island Agricultural Research Institute (ICAR-CIARI), Sri Vijaya Puram, in coordination with its KVKs across three districts, observed Vigilance Awareness Week on the theme “Vigilance: Our Shared Responsibility” from October 27 to 31, 2025. The week-long programme included administration of the Vigilance Pledge, Gram Sabha for farmers, awareness programmes, drawing, slogan writing and painting competitions for school students, and a walkathon, with participation from farmers, citizens, teachers, students, and staff, including participants from Nicobar Island. Three lectures were delivered on cyber-crime awareness and trafficking vigilance by Shri Bhupender Kumar Singh, Head Constable, Cyber-Crime Branch, Sri Vijaya Puram; timely clearance of files by Shri Kanishk Bhukar, Administrative Officer, ICAR-CIARI; and preventive vigilance from a financial perspective by Shri Santhosh Kumar Satapathy, Finance and Accounts Officer, ICAR-CIARI. A total of 439 participants, including ICAR-CIARI staff, took part in the programme. The activities were coordinated by Dr. T. Sujatha, Vigilance Officer, ICAR-CIARI, under the guidance of Dr. Jai Sunder, Director (A), ICAR-CIARI.

Fig. 65 Vigilance Awareness Week 2025

Rashtriya Ekta Diwas

ICAR–Central Island Agricultural Research Institute (ICAR–CIARI), Sri Vijaya Puram, observed Rashtriya Ekta Diwas on October 31, 2025, at the Institute Headquarters, Sri Vijaya Puram, and the Regional Station, Minicoy, to commemorate the birth anniversary of Sardar Vallabhbhai Patel. The observance included administration of the Rashtriya Ekta Diwas Pledge, in which 134 staff members participated, reaffirming their commitment to national unity, integrity, and security. A Unity Run was organized

Fig. 66 Rashtriya Ekta Diwas

within the campus to promote national integration and harmony, followed by screening of a documentary film on "Sardar Vallabhbhai Patel: Life and Work," highlighting India's cultural and linguistic diversity and the importance of mutual understanding and cooperation. The programme was conducted under the guidance of Dr. Jai Sunder, Director (A), ICAR–CIARI.

150 Years of the National Song "Vande Mataram"

ICAR–Central Island Agricultural Research Institute (ICAR–CIARI), Sri Vijaya Puram, organized the inaugural event commemorating 150 years of the National Song "Vande Mataram" on November 7, 2025, at Dr. T. R. Dutta Hall. Dr. Jai Sunder, Director, ICAR–CIARI, addressed the gathering and highlighted the origin and national significance of "Vande Mataram," composed by Bankim Chandra Chatterjee, emphasizing its role in fostering unity, patriotism, and dedication to the nation. The programme included mass singing of "Vande Mataram" followed by live telecast of the Hon'ble Prime Minister's address. A total of 80 participants, comprising scientists, technical, administrative, research scholars, and contractual staff, attended the event, which was simultaneously observed at all three KVKs of the Andaman and Nicobar Islands and at the Regional Centre, Minicoy. The programme was coordinated by Shri D. Karunakaran, Scientist, with support from AKMU staff, under the guidance of Dr. Jai Sunder, Director (A), ICAR–CIARI.

Fig. 65 150 Years of the National Song "Vande Mataram"

Janjatiya Gaurav Varsh Pakhwada

Janjatiya Gaurav Diwas 2025 was observed from November 1–15, 2025 at ICAR–Central Island Agricultural Research Institute (ICAR-CIARI), Sri Vijaya Puram, along with its KVKs at Sippighat and Car Nicobar, and the Regional Station, Minicoy (Lakshadweep), as per the directions of the Ministry of Tribal Affairs and ICAR, New Delhi. Celebrated under the theme "Janjatiya Gaurav Varsh Pakhwada," the programme commemorated the 150th Birth Anniversary of Bhagwan Birsa Munda.

A series of activities were organized involving tribal leaders, youth, farmers, and school children. These included awareness programmes through street plays and group discussions, skill development training for tribal youth, and livelihood promotion through hands-on training for farmers and women. Nutritional kitchen gardening was promoted for health and wellness, while low-cost polyhouses were introduced for year-round vegetable production. Efforts towards institutional strengthening included the formation of self-help groups and farmer producer companies.

Awareness on government schemes related to agriculture, animal husbandry, and fisheries was disseminated. Educational programmes highlighted tribal freedom fighters, and a Tribal Farmers' Market was established at KVK Car Nicobar. Field visits, demonstrations, and distribution of small agricultural implements were also conducted. The programme witnessed active participation from scientists, farmers, NGOs, and departmental officials.

Fig. 67 Janjatiya Gaurav Varsh Pakhwada

World AMR Awareness Week 2025

ICAR–Central Island Agricultural Research Institute (ICAR–CIARI), Sri Vijaya Puram, observed World Antimicrobial Resistance (AMR) Awareness Week 2025 from 18 to 24 November 2025 in alignment with the global theme "Act Now: Protect Our Present, Secure Our Future" and as part of the "Go Blue for AMR" campaign. The programme focused on promoting responsible

antimicrobial use and awareness among farmers, livestock owners, veterinary professionals, students, and the public through poster display at veterinary dispensaries in South Andaman and Car Nicobar, outreach visits to Animal Husbandry and Veterinary establishments at Port Mout, Rangachan, Garacharma, and Goal Ghar, training on antibiotic sensitivity testing for para-veterinary staff, farmer awareness programmes, and essay, drawing, and e-poster competitions for students. A workshop on AMR was conducted in which Dr. Jai Sunder, Director, ICAR–CIARI, highlighted the AMR status in the Andaman and Nicobar Islands and emphasized the One Health approach. The valedictory programme on 24 November 2025 was graced by Dr. K.A. Naveen, Director, Directorate of Animal Husbandry and Veterinary Services, A&N Administration, as Chief Guest, and Dr. Kalyan P. Kadbhane, Deputy Director (Ayush), Directorate of Health Services, A&N Administration, as Guest of Honour. The programme was coordinated by Dr. T. Sujatha, Organizing Secretary, ICAR–CIARI.

Fig. 68 World AMR Awareness Week 2025

Live Telecast of Release of 21stInstallment of PM-KISAN

ICAR–Central Island Agricultural Research Institute (ICAR–CIARI), Sri Vijaya Puram, in collaboration with ICAR–Krishi Vigyan Kendra (KVK), South Andaman, organized the live telecast of the release of the 21st installment of the Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) on November 19, 2025, at ICAR–CIARI, Sri Vijaya Puram, KVK North & Middle Andaman, and KVK Nicobar. The programme was attended by the Hon'ble Member of Parliament Shri Bishnu Pada Ray, Dr. Jai Sunder, Director (A), ICAR–CIARI, PRI members, and farmers from various villages. Shri Bishnu Pada Ray interacted with farmers and emphasized adoption of scientific technologies and natural farming practices, while Dr. Jai Sunder highlighted the importance of natural farming, the Gokul Mission, and poultry vaccination for sustainable agriculture. Technical sessions were delivered by Dr. Y. Ramakrishna, Principal Scientist and Head, KVK South Andaman, on natural farming-based pest and disease management; Dr. Ajit Waman, Senior Scientist, ICAR–CIARI, on whitefly management and productivity enhancement of spice crops; and Shri Chittaranjan Raul, Scientist, on biofloc technology and inland fish farming. A total of 271 farmers and farmwomen participated in the programme across the islands.

Fig. 69 Live Telecast of Release of 21st Installment of PM-KISAN

Constitution Day (Samvidhan Diwas)

ICAR–Central Island Agricultural Research Institute (ICAR–CIARI), Sri Vijaya Puram, observed Constitution Day (Samvidhan Diwas) on 26 November 2025 to mark the 75th anniversary of the adoption of the Constitution of India, at the Institute Headquarters along with its Regional Station, Minicoy, and KVKs at South Andaman, North & Middle Andaman, and Nicobar. The observance included a pledge-taking ceremony held at Dr. T.R. Dutta Hall, in which staff from all categories- scientific, technical, administrative, supporting, research scholars, and contractual staff- participated by taking the pledge in both English and Hindi. The programme also featured screening of a film on the Constitution, discussions on constitutional values, fundamental rights and duties, and democratic principles, as well as reading of the Preamble and an online quiz programme,

Fig. 70 Constitution Day (Samvidhan Diwas)

with certificates awarded to participants. As part of the outreach initiative, school students visited the Institute, interacted with staff, and delivered brief talks on constitutional values.

Online Training Programme on Packages and Practices of Major Crops

ICAR–Central Island Agricultural Research Institute (ICAR–CIARI), Sri Vijaya Puram, organized an Online Training Programme on Packages and Practices of Major Crops for the Andaman and Nicobar Islands from 02 to 04 December 2025 to strengthen the capacity of agriculture officials and field functionaries. The programme was inaugurated virtually by Dr. Jai Sunder, Director, ICAR–CIARI, who emphasized adoption of modern technologies, good agricultural practices, and effective field and post-harvest management to address the Islands' climatic challenges, and highlighted the role of extension personnel in technology dissemination. Mrs. Sri Dewi, Joint Director of Agriculture, highlighted environmental issues and region-specific farming practices suitable for island conditions. Dr. Raj Narayan, Principal Scientist and Head, Horticulture and Crop Improvement, ICAR–CIARI, coordinated the programme. Scientists from ICAR–CIARI and its KVKs, including Dr. P. K. Singh, Dr. Y. Ramakrishna (KVK South Andaman), Dr. Santosh Mishra (KVK Nicobar), and Dr. Ajit Arun Waman, Dr. Pooja Bohra & Dr. Prabhu P. participated as resource persons.ICAR–Central Island Agricultural Research Institute (ICAR–CIARI), Sri Vijaya Puram, observed Agriculture Education Day (AED)–2025 on 3 December 2025 to commemorate the birth anniversary of Dr. Rajendra Prasad, first President of India and former Union Minister of Agriculture. As part of the observance, a series of student-oriented activities were conducted from 27 November to 03 December 2025, including drawing and painting competition on "Agricultural Farms in 2047" (Classes V–VIII), quiz competition on "Agriculture Basic & General Knowledge", and elocution competition on "Role of Agriculture in Making India a Developed Nation" (Classes IX–XII). A total of 120 students from 12 schools participated. Students also visited the Garacharma campus for a Technology Exposition and Demonstrations, interacting with scientists and visiting facilities such as the Integrated Farming System, livestock and pig units, horticulture and medicinal gardens, butterfly museum, fisheries museum, and central laboratories. The valedictory programme was graced by Dr. Dilip Kumar Jha, Scientist-F and Officer-in-Charge, National Institute of Ocean Technology (NIOT), Sri Vijaya Puram, as Chief Guest, who highlighted career opportunities in agriculture and the role of ICAR-CIARI in island agricultural development. Dr. Jai Sunder, Director, ICAR-CIARI, addressed the students on emerging opportunities in agriculture, entrepreneurship, and the role of modern technologies such as AI, robotics, and drones in transforming the sector. The programme was coordinated by Shri D. Karunakaran, Scientist and Nodal Officer, ICAR-CIARI.

Fig. 71 Agriculture Education Day (AED) – 2025

9. Awards and Recognition

Sl. No.	Name of person	Award/ Recognition	Awarding agency
1	Dr. J. Praveenraj	Dr. C.V. Kulkarni Young Scientist Award	Foundation day of ICAR-CIFE held on 6th June 2025
2	Dr. Ajit Arun Waman	Associate Fellow- 2025	Society for Promotion of Horticulture, Bengaluru (October 17, 2025)
		Best Presenter Award	XXXIV AGM of AICRP on Plantation Crops at AC&RI, Madurai, Tamil Nadu (May 9, 2025)
		Invited Panelist in the Workshop on Spices during Indian Horticulture Congress-2025 and International Meet	Indian Academy of Horticultural Sciences, New Delhi (November 6-9, 2025)
		Appreciation Certificate for DweepAgro-Eco Walk	ICAR-CIARI Foundation Day-2025
		Editor	Current Agriculture Research Journal (Enviro Research Publishers), Journal of the Andaman Science Association (ASA), Institute Newsletter
		Lead Speaker, Online Discussion Series VI for Researchers of KAU	Kerala Agricultural University, Madakkathara, Kerala
		Member of Expert Team constituted for ascertaining the Status of Rugose Spiralling Whitefly and Mealy bug Infestation in the Plantations of the Andaman and Nicobar Islands.	DPPQS, Ministry of Agriculture and Farmer's Welfare, New Delhi
		Expert, Technical Enrichment Programme	Coconut Development Board

Sl. No.	Name of person	Award/ Recognition	Awarding agency
3	Dr. Pooja Bohra	Editor	BMC Plant Biology (Springer-Nature), Frontiers in Horticulture (Frontiers)
		Elected Zonal Councillor (East Zone)	Society for Promotion of Horticulture, ICAR-IIHR, Bengaluru
		External Examiner for Doctoral thesis	Nirwan University, Jaipur, Rajasthan
		Judge for State Level Baal Vaigyanik Puraskar and Flower Show	Department of Education, A&N Administration and CBSE, New Delhi
5	Dr. Ajit Arun Waman Dr. Pooja Bohra	Technology Development Award (Dweep CinnRub)	ICAR-CIARI Foundation Day-2025
		Best Stall Award of the Kisan Mela 2025 to the Division of Horticulture and Crop Improvement	ICAR-CIARI, Sri Vijaya Puram
		Member, Technical Support Group, SPICE PRAVAH of Andaman and Nicobar Islands	Andaman and Nicobar Administration
6	Dr. Sharath S. yeligar	First Prize in mixed Doubles at Eastern Zonal Sports meet	IVRI, Izatnagar, Bareilly, UP
7	Dr. Raj Narayan	Chairman of Technical Committee of HVADA	Andaman & Nicobar Adminstration
8	Dr. I. Jaisankar	Certificate of Excellence	IJPSS
9	Dr. I. Jaisankar Dr. Abhilash Shri. T. Harshang Kumar	Appreciation certificate from Chairperson Tribal Council, Kamorta	Tribal Council, Kamorta
10	Dr. I. Jaisankar Dr. B. A. Jerard Dr. E.B. Chakurkar Dr. T. Subramani	Technology commercialized award for Dweep Leaf Separator	ICAR–Central Island Agricultural Research Institute (CIARI)
11	Dr. Abhilash Shri. T. Harshang Kumar	Appreciation Certificate	ICAR–Central Island Agricultural Research Institute (CIARI)
12	Dr. Abhilash Shri. T. Harshang Kumar Dr. I. Jaisankar	Appreciation Certificate	First Captain, Kakana Village, Car Nicobar Island
13	Shri. T. Harshang Kumar Dr. Abhilash	Technology Commercialized award for Dweep Go-Fly Formulation Process	ICAR–Central Island Agricultural Research Institute (CIARI)
14	Dr. P. Perumal	Best Poster Presentation Award	Society of Veterinary Biochemists & Biotechnologists of India

Sl. No.	Name of person	Award/ Recognition	Awarding agency
15	Dr. P. Perumal	Best Oral Presentation Award	Astha Foundation, Meerut, Uttar Pradesh, India
16	Dr. P. Perumal	Appreciation certificate for Commercialization of Technology on Dweep Go-Fly Formulation& Sex determination kits for non-ratite birds	ICAR-CIARI, Sri Vijaya Puram, Andaman and Nicobar Islands
17	Dr. P. Perumal	Appreciation Certificate for invaluable contribution towards promoting scientific livestock farming	Tribal Council, Car Nicobar
18	Dr. P. Perumal	Appreciation Certificate	ICAR-CIARI, Sri Vijaya Puram, Andaman and Nicobar Islands
19	Dr. P. Perumal	Editorial Board Member	Science Explore, Indian Academic Researchers Association
20	Dr. P. Perumal	Editorial Board Member	Research Explore, , Indian Academic Researchers Association
21	Dr. P. Perumal	Editorial Board Member	Acta Scientific Veterinary Sciences
22	Dr. T.Sujatha	DG, ICAR appreciation certificate	ICAR, New Delhi for excellent work and pivotal in fostering a robust IP environment & creating agri-business ecosystemon 06.02.2025
23	Dr. Sharath. S. Yeligar	ICAR-IVRI-First Prize in mixed Doubles at Eastern Zonal Sports meet	ICAR-IVRI, Izatnagar, Bareilly, Uttar Pradesh
24	Shri. Chittaranjan Raul Dr. J.Praveenraj	Award for Best experimental unit “Biofloc culture unit	48th Foundation Day of ICAR-CIARI, Sri Vijaya Puram held on 23.06.2025.
25	Dr. J. Praveenraj Dr. K Saravanan Dr. R Kiruba Sankar	Certificate of appreciation	Parliamentary Standing Committee on Agriculture, Animal Husbandry and Food Processing held at ICAR-CIARI during 19-21 January, 2025.
26	Dr. R. Kiruba Sankar	Best Research Publication award	Foundation day held on 23 June 2025 in ICAR-CIARI
27	Dr. R. Kiruba Sankar	Best Oral Presentation Award	MECOS International Symposium on Marine Ecosystems organized by ICAR CMFRI, Kochi during 04-06 November 2025 at Kochi.

Sl. No.	Name of person	Award/ Recognition	Awarding agency
28	Dr. R.R. Alyethodi	Invited Expert Lecture	KVK, ICAR CIARI, and Animal Husbandry, Sri Vijaya Puram. on "Scientific Breeding Strategies in Small and Large Animals for Andaman and Nicobar Islands"
29	Dr. R.R. Alyethodi	Appreciation Letter	Tribal Council Car Nicobar for Capacity Development programs and Input Distribution

11. ONGOING RESEARCH PROJECTS

11.1 Institute funded

Sl. No.	Title	PI/ Co-PIs	Budget (Lakhs) (2025-2026)
1	Mapping the brackish water resources of South Andaman foraquaculture site suitability using GIS approach **(2022-2025)**	**Dr. R. Kiruba Sankar** Dr. K. Saravanan Dr. Sirisha Adamala Dr. J. Praveenraj	20.0
2	Standardisation of high stocking density carp seed rearing in biofloc system.**(2024-2025)**	**Dr. Chittaranjan Raul** Dr. J. Praveenraj	37.1
3	Application of Artificial Intelligence and Internet of things in Agriculture for efficient management.**(2024-2027)**	**Shri. D. Karunakaran** Dr. Abhilash Dr. Pooja Bohra Shri. Chittaranjan Raul	55.0
4	Development of control & treatment measures for the management of parasitic diseases in freshwater fishes**. (2023-2026)**	**Dr. J. Praveenraj** Shri. Chittaranjan Raul Dr. Ajit Arun Waman	38.0
5	Development of Island-based information management system for decision making in agriculture. **(2022-2026)**	**Shri. D. Karunakaran** Dr. Sirisha Adamala Dr. R. Kiruba Sankar	44.0
6	Exploration of fishery, biology and market potential of tuna resources of Minicoy Islands. **(2022-2025**)	**Dr. Gladston Y.** Smti. Ajina S.M. Shri.V.M Abdul Gafoor Shri. Chittaranjan Raul	84.50
7	Integrated Farming System (IFS) for enhancing sustainable Livelihood of rural tribal community of Minicoy Islands. **(2022-2025)**	**Smti. Ajina S.M** Dr. Gladston Y Shri.V.M. Abdul Gafoor Dr. E. B. Chakurkar	85.50
8	Assessment and strengthening of year-round vegetable cultivation through strategic introduction, acquisition and utilization of germplasm**(2025-2028)**	**Dr. Raj Narayan** Dr. Pooja Bohra Dr. P. Prabhu Dr. Sharath S. Yeligar	68.12
9	Identification and characterization of superior germplasm of cinnamon, tejpat, long pepper and clove under Bay Islands condition**(2021-2026)**	**Dr. Ajit Arun Waman** Dr.Pooja Bohra Dr. P.K. Singh	49.25
10	Conservation, bioprospection and utilization of selected fruit species of Bay Islands**(2021-2026)**	**Dr. Pooja Bohra** Dr. Ajit Arun Waman Dr. P. Prabhu	58.24
11	Harnessing variability of multi-parent advance generation intercross (MAGIC) population of rice for genetic improvement**(2022-2026)**	**Dr. P.K. Singh** Dr.Y Ramakrishna Dr.Prabhu P. Dr. Pooja Kapoor	24

Sl. No.	Title	PI/ Co-PIs	Budget (Lakhs) (2025-2026)
12	Introduction of sesame and safflower oilseed crops to Island conditions: Evaluating performance in the Andaman Islands **(2024-2027)**	**Dr. Prabhu P.** Dr. P K Singh Dr. Abhilash	43
13	Collection, conservation, characterization and evaluation of cucurbitaceous germplasm for the Andaman and Nicobar Islands**(2024-2027)**	**Dr. Prabhu P.** Dr. Jaisankar I.	36
14	Evaluation of Andaman Padauk (*Pterocarpus dalbergioides*) based sequential cropping system**.(2022-2025)**	**Dr. I. Jaisankar** Dr. B. Augustine Jerard Dr. T.P. Swarnam Dr. Jayakumara Varadan R. Dr. T. Subramani	31.50
15	Determining suitable cropping window and varieties in rice-based cropping system under Island ecosystem**.(2024-2027)**	**Dr. Abhilash** Dr. T. Subramani Dr. P.K. Singh Dr. Subhash Nataraja Pillai	33.48
15	Impact assessment of CIARI technologies on Andaman and Nicobar Islands Farmers **(2024-2027)**	**Dr. S. Sharath Yeligar** Dr. Y. Ramakrishna Dr.V. Damodaran, Dr. Santosh Kumar	33.32
16	Reproductive performance of cattle and goat in modern and traditional housing models in Andaman and Nicobar Islands **(2024-2027)**	Dr. P. Perumal Dr. Abhilash Dr. Sharath S. Yeligar	40.99
17	Evaluation of traditional knowledge of plants in the management of *Rhipicephalus microplus* in cattle and goat. **(2022-2025)**	**Dr. D. Bhattacharya** Dr. T. Sujatha Dr. Jai Sunder Dr. Arun Kumar De Dr. P. Perumal Dr. Ajit Arun Waman	25.00
18	Molecular epidemiology and vaccine development for caseous lymphadenitis in goat **(2024-2027)**	**Dr. Arun Kumar De** Dr.Jai Sunder Dr. D. Bhattacharya	19.5
19	Nutrient intake and digestibility of the Andaman local and Nicobari pigs in intensive system of rearing. **(2021-2025)**	**Dr. P. A. Bala** Dr. Arun Kumar De	20.00
20	Tree fodder resources of A & N islands for its nutrient analysis and digestibility in livestock**. (2023-2028)**	**Dr. P.A. Bala** Dr. I. Jaisankar Dr. T. Subramani Dr. Abhilash Dr. S. Sharath Yeligar	28.2
21	Sorting of X and Y bearing spermatozoa in Rabbit Model **(2023-2025)**	**Dr. R.R.Alyethodi** Dr. P. Perumal	10.00

Sl. No.	Title	PI/ Co-PIs	Budget (Lakhs) (2025-2026)
22	Evaluation of Serum levels of ERBB2, FGFR1, MAP3K19, GDF9, and IGF1R as goat fecundity biomarkers **(2023-2026)**	**Dr. R.R. Alyethodi** Dr. K. Muniswamy	10.00
23	Studies on the prevalence of antimicrobial resistance in bacteria of zoonotic importance in food chain and environment **(2023-2026)**	**Dr. Jai Sunder** Dr. A K. De Dr.T. Sujatha Dr. D. Bhattacharya	7.50
24	Exploring the transcript variants and expression profile of germ line markers Vasa and Dazl genes in Goat**.(2023-2026)**	**Dr. K. Muniswamy** Dr.R. R. Alyethodi Dr.P. Perumal	21.00
25	Mitigation of heat stress of endemic poultry breeds of Andaman and Nicobar Islands under seasonal and climate change scenario **(2022-2026)**	**Dr. T. Sujatha** Dr. D.Bhattacharya Smti.Nivedita	15.50

11.2 ICAR funded

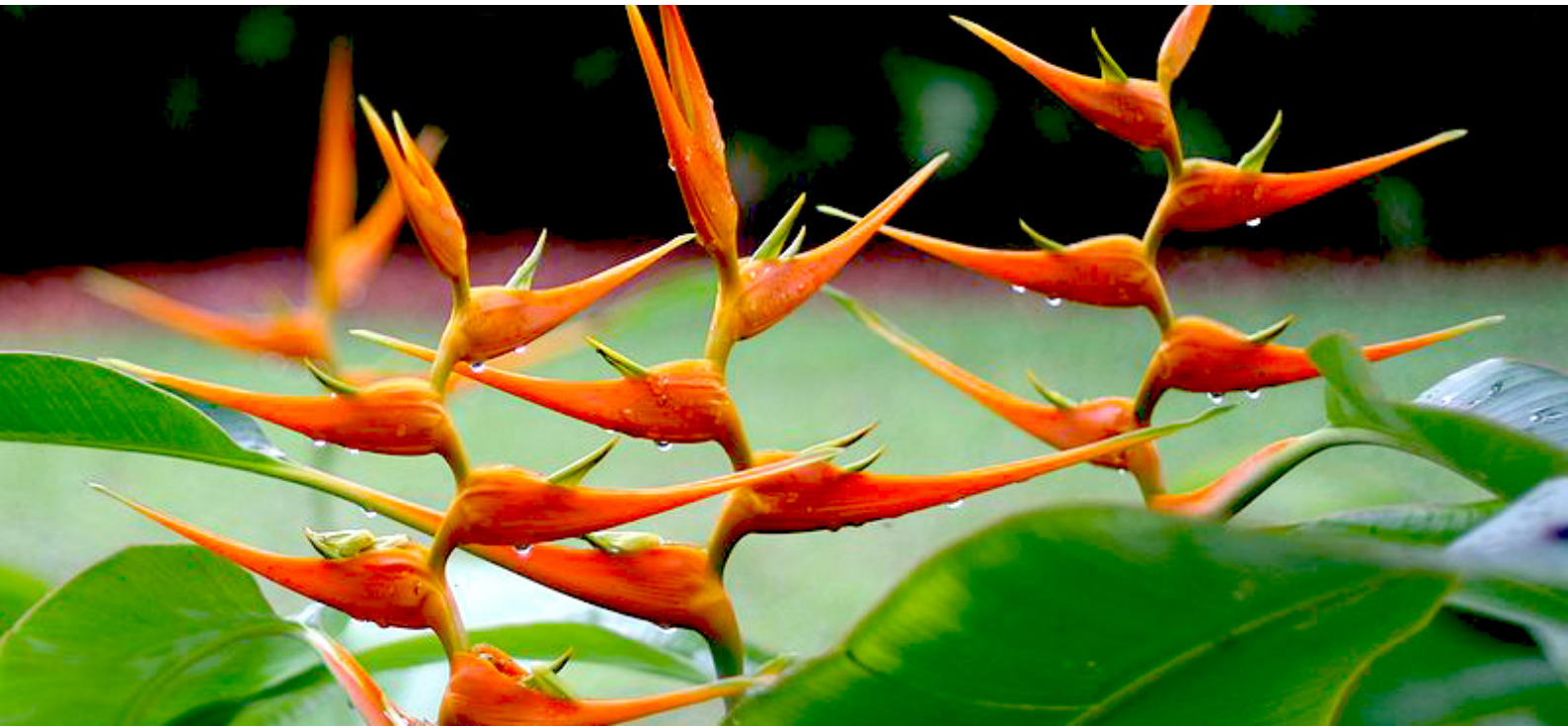
Sl. No.	Title	PI/ Co-PIs	Budget (Lakhs) (2025-2026)
1	All India Network Project on Mariculture **(2018-2025)**	**Dr. R. Kiruba Sankar** Dr. J. Praveenraj Dr. K. Saravanan Dr. Chittaranjan Raul	07.00
2	All India Network Project on Antimicrobial Resistance (AMR) in Fisheries and Livestock (Fisheries component) **(2024-2026)**	**Dr. J. Praveenraj** Dr. Chittaranjan Raul Dr. K. Saravanan	11.00
3	AICRP on Seed (Crop) **(2006- continuous)**	**Dr. P.K. Singh**	09.50
4	AICRP on Vegetables **(2005- continuous)**	**Dr. Raj Narayan** Dr. Puneeth .P.V	02.90
5	AICRP on Rice **(2008- continuous)**	**Dr. P.K. Singh**	-
6	AICRP on Sesame & Niger **(2023- continuous)**	**Dr. Prabhu P.**	0.73
7	AICRP on Plantation Crops **(2015-continuous)**	**Dr. Ajit Arun Waman**	03.60
8	AICRP on Spices **(2025-continuous)**	**Dr. Ajit Arun Waman**	-
9	AICRP on Tuber crops **(2010- continuous)**	**Dr. I. Jaisankar**	06.50

Sl. No.	Title	PI/ Co-PIs	Budget (Lakhs) (2025-2026)
10	AICRP on Integrated farming system **(2015-continuous)**	**Dr. I. Jaisankar** Dr. Abhilash Dr. Ramakrishna Y. Dr. Perumal P. Dr. Chitranjan Raul Dr. Gurunath Raddy	26.46
11	National Animal Disease Control Programme on Foot and Mouth Disease **(2014-continuous)**	**Dr. Jai Sunder** Dr. Arun Kumar De Dr. D. Bhattacharya	14.80
12	All India Network Project on Antimicrobial Resistance (AMR) in Fisheries and Livestock (Animal component) **(2024- continuous)**	**Dr. Jai Sunder** Dr. T. Sujatha Dr. Arun Kumar De	13.00
13	National Animal Disease Epidemiology Network **(2014-continuous)**	**Dr. Jai Sunder** Dr. D. Bhattacharya Dr. T. Sujatha	07.00
14	AICRP on Goat Improvement **(2014-continuous)**	**Dr. R.R. Alyethodi** Dr. Jai Sunder Dr. P. Perumal	34.66
15	AICRP on Pig (2014- **continuous)**	**Dr. A.K. De** Dr. D. Bhattacharya Dr. P. Perumal Dr. Jai Sunder Dr. P.A. Bala	45.50
16	Out scaling of natural farming through Krishi Vigyan Kendras**(2022-2025)**	**Dr. Y. Ramakrishna** Dr. Pooja Kapoor	-
17	National Innovation on climate resilient agriculture **(2011-2025)**	**Dr. Y. Ramakrishna** Dr. Pooja Kapoor	8.93

11.3 External funded

Sl. No.	Title	PI/CO-PIs	Budget (lakhs) (2025-2026)	Funding Agency
1	Promotion of socioeconomic status and self-employment of Nicobarese tribes through scientific validation of ethno veterinary tribal medicinal knowledge and herbal product development **(2025-2028)**	**Dr. T. Sujatha** Dr. Anirban Pal Dr. A.K.De Dr. Jai Sunder Dr. Pankaj Arvind Dhole	42.54	DST, GoI
2	National Surveillance Programme for Aquatic Animal Diseases (NSPAAD) in Andaman and Nicobar Islands (Second phase) **(2022-2025)**	**Dr. J. Praveenraj** Dr. R. Kiruba Sankar Dr. K Saravanan	17.65	Department of Fisheries, Govt. of India
3	Augmenting livelihood, resilience and knowledge generation through coastal fisheries information hub for Nicobari tribes of Car Nicobar Island. **(2021-2025)**	**Dr. R. Kiruba Sankar** Shri. D. Karunakaran Dr. Sirisha Adamala Dr. K. Saravanan, Dr. J. Praveenraj Dr. Gladston Y Smti. Ajina SM	24.24	Department of Science & Technology, New Delhi
4	CSS (MIDH) NHM Project on Spices **(2022-continuous)**	**Dr. Ajit Arun Waman**	4.20	Directorate of Arecanut and Spices Development, Kozhikode, Kerala
5	Standardization of agro-techniques and nursery protocol for *Centratherum anthelminticum* (L.) Kuntze ex Gamble**. (2023-2025)**	**Dr. Ajit Arun Waman** Dr. Jishin Prakash T.S.	09.1	Central Council for Research in Ayurvedic Sciences, Ministry of Ayush, Govt. of India, New Delhi
6	Monitoring Pesticide Reside at National level (MPRNL) **(2017- continuous)**	**Dr. Abhilash**	11.10	Ministry of Agriculture and Farmer Welfare, Govt. of India

Sl. No.	Title	PI/CO-PIs	Budget (lakhs) (2025-2026)	Funding Agency
7	Integrated Agromet Advisory Services for Andaman and Nicobar Islands (Gramin Krishi Mausam Seva) **(2008- continuous)**	**Dr. Abhilash**	16.97	IMD, Ministry of earth Science, Govt. of India, New Delhi
8	Development and Standardization of DUS Characteristics Procedures for Noni (*Morinda citrifolia* L.) **(2013-continuous)**	**Dr. I. Jaisankar**	6.54	Protection of Plant Varieties &Farmers Rights Authority (PPV & FRA), Govt. of India, New Delhi
9	Bio-prospecting of *Pandanus* sp. (Kewda) of Andaman and Nicobar Islands for its medicinal properties. **(2021-September, 2025)**	Dr. I. Jaisankar Dr. B. Augustine Jerard Dr. A. Velmurugan Dr. M. Rajkumar Dr. R.Jaya Kumaravaradan	8.01	National Medicinal Plants Board, Ministry of Ayush, Govt. of India, New Delhi
10	Third party monitoring report preparation for State CAMPA Projects **(2025- March 2026**	Dr. I. Jaisankar Dr. Abhilash Dr. P. Prabhu	2.55	Department of Environment and Forests, A&N Administration, Sri Vijaya Puram



12. PUBLICATIONS

Research Articles

Abhilash, Satpathi, A., Harshangkumar, T., Subramani, T., Jaisankar, I. and Shahi, N.K. (2025). Climatological and Hydrological Extremes of the Andaman and Nicobar Islands, India, and Its Database for Public Users. *Atmosphere*, 16(3), 301. (NAAS Score: 8.30)

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Alyethodi,R.R., Sunder, J., Perumal, P. and Bala, P.A. (2025). Understanding goat farming-carring for the newborn and young ones-Andamani goat dewoming-taolored for Andaman condition.Extension Folder, ICAR-CIARI, Sri Vijaya Puram, pp. 1-4.

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आर. आर. अल्येथोडी, जयसुंदर, पी. पेरुमल, और पी.ए. बाला रीकब ।(५२०२)पालन की समझन वजात और छोटे बच्चों की देखभाल —अंडमान परिस्थितियो के अनुसार बकरी काकृमिनाशन। तकनीकी फ़ोल्डर, भा.कृ.अनु.प.-केंद्रीय द्वीपीय कृषि अनुसंधान संस्थान, श्रीविजयपुरम, अंडमान और निकोबार द्वीप समूह, पृ.सं. 1-4.

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Video Films

Ajit Arun Waman and Pooja Bohra (2025). Cinnamon harvesting technique for Andaman and Nicobar Islands. ICAR-CIARI, Sri Vijaya Puram.

अजित अरुण वामन एवं पूजा बोहरा (2025). अंडमान और निकोबार द्वीप समूह में दालचीनी कटाई की तकनीक. भा. कृ. अनु. प.- केंद्रीय द्वीपीय कृषि अनुसंधान संस्थान, श्री विजयापुरम, अंडमान और निकोबार द्वीप समूह.

13. Participation of Scientist in Conference/ Seminar/ Symposium/ Meeting

Name of Scientist	Programme	Organizer	Date
Dr. Gladston.Y. Smti. Ajina.S.M	ICAR Sponsored winter school on genetic and genomic tools for sustainable aquaculture and fisheries management	ICAR-CMFRI, Kochi	15/01/2025 to 04/02/2025
Dr. Raj Narayan	Chaired 62nd, 63rd, 64th, and 65th Technical Committee meeting of HVADA	Directorate of Agriculture, Haddo, Sri Vijaya Puram	29/01/2025, 23/07/2025 &14/11/2025
	Awareness programme on NABL accreditation & its benefits.	ICAR-CIARI Sri Vijaya Puram.	29/04/2025
Dr. Sharath. S. Yeligar	Economic Strategies for Livestock Sustainability in Island Ecosystems		12/02/2025 to 04/03/2025
Dr. P.K. Singh	Scientific Advisory Committee (SAC) Meeting of Krishi Vigyan Kendra of ICAR-CIARI, Sri Vijaya Puram	ICAR-KVK South Andaman	17/02/2025
	43rd Annual Group Meeting of AICRP (VC)	PAU, Ludhiana, Punjab	03/03/2025 to 05/03/2025
	Sustainable Agriculture through Natural Farming	ASA, ICAR-CIARI, Sri Vijaya Pyram and GNFSU, Gujarat.	13/05/2025
	60th Annual Group Meeting of AICRP on Rice held at	ICAR-IIRR, Hyderabad	26/04/2025 to 29/04/2025
Shri. D. Karunakaran	Harnessing the Potential of Agro-ecotourism in the Andaman and Nicobar Islands	ASA and ICAR-CIARI, Sri Vijaya Puram	27/03/2025
	Participated State Level Seminar Concludes with a Commitment towards the development of Agripreneurship in the Islands	ICAR-CIARI Sri Vijaya Puram	05/03/2025 to 07/03/2025
All Scientists and staff of CIARI	Workshop on Harnessing the Potential of Agro-ecotourism in the Andaman and Nicobar Islands		27/03/2025

Name of Scientist	Programme	Organizer	Date
Dr. Eaknath B. Chakurkar Dr. Jai Sunder Dr. Waman Ajit Arun Dr. Pooja Bohra Dr. R. Kiruba Sankar Dr. Prabhu P. Dr. P.K. Singh Dr. Raj Narayan	SANGITI-2025 (Survey of Andaman & Nicobar Governance Initiatives for Transformative Islands)	Andaman & Nicobar Administration, S.V. Puram	28/04/2025 to 29/04/2025
Dr. Gladston.Y Smti. Ajina .S.M.	Celebration of World Intellectual Property Day 2025	RS Minicoy	02/05/2025
Shri. D. Karunakaran	Participated in World Intellectual Property Day, 2025, which was celebrated on 02.05.2025	ICAR-CIARI Sri Vijaya Puram	02/05/2025
	Participated National Workshop on "Sustainable Agriculture through Natural Farming"		13/05/2025
Dr Prabhu P.	Sustainable Agriculture through Natural Farming	ASA, ICAR-CIARI, Sri Vijaya Pyram and GNFSU, Gujarat.	13/05/2025
Dr. P. Perumal Dr. T. Sujatha	National Workshop on Sustainable Agriculture through Natural Farming	ICAR-CIARI Sri Vijaya Puram	13/05/2025
Shri. Talaviya Harshangkumar Dr Abhilash Dr I. Jaisankar	Workshop on "Sustainable Agriculture Through Natural Farming"	ICAR-Central Island Agricultural Research Institute (CIARI), in collaboration with the Andaman Science Association (ASA) and Gujarat Natural Farming Science University (GNFSU)	13/05/2025

Name of Scientist	Programme	Organizer	Date
Dr. Ajit Arun Waman	XXXIV AGM of AICRP on Plantation Crops	AC&RI, Madurai, Tamil Nadu	07/05/2025 to 09/05/2025
	Annual Review Meeting of CSS-MIDH (NHM) Project on Spices	Dr. PDKV, Akola at Nagpur, Maharashtra	26/06/2025 to 27/06/2025
	Annual General Meeting of the Society for the Promotion of Horticulture	ICAR-IIHR, Bengaluru	17/10/2025
	Annual Group Meeting of AICRP on Spices	ICAR-RCNEH, Barapani, Meghalaya	28/10/2025 to 31/10/2025
	Indian Horticulture Congress- 2025 and International Meet	UAS, Bengaluru, Karnataka	06/11/2025 to 09/11/2025
Dr. J. Praveenraj	Review meeting of INFAAR (AINP-AMR-FL)	ICAR-NBFGR, NASC complex New Delhi	20/08/2025 to 21/08/2005
	12th International Symposium on Diseases in Asian Aquaculture (DAA12)	ICAR-Central Institute of Brackish water Aquaculture, Chennai	23/09/2025 to 27/09/2025
	Technical meeting to oversee the activities of RGCA, Kodiyaghat	RGCA, Kodiyaghat and ICAR-CIBA	07/04/2025 to 08/04/2025
Dr P.K. Singh	One Line Hybrid Crops through Synthetic Apomixis	society of advance rice research, IIRR, Hyderabad	12/09/2025
Dr. Abhilash	17th Annual workshop on "Monitoring of Pesticide residues at National Level" at Kerala Agricultural University, Vellayani	All India Network Project on Pesticide Residues & Contaminants, ICAR- IARI &Kerala Agricultural University	13/10/2025
Dr. Pooja Bohra	Annual General Meeting of the Society for the Promotion of Horticulture	ICAR-IIHR, Bengaluru	17/10/2025
	12th International Conference on Emerging Issues in Agricultural, Food Technology, Biological & Applied Sciences for Global Development (virtual mode)	AEDS, Rampur, Uttar Pradesh	15/11/2025 to 17/11/2025
Dr. R.R. Alyethodi	QRT review Meet (Online)	AICRP on Goat	03.11.2025
	Annual Review Meet		10.11.2025 to 11.112025

Name of Scientist	Programme	Organizer	Date
Dr. R. Kiruba Sankar	Participated in the Guest Lecture program organised by the Department of Science and Technology (DST), New Delhi to deliver a lecture on the Island Management Plan works at Car Nicobar Island	DST, New Delhi	18/12/2025
	Workshop on High-level Inter Agency Co-ordination Meeting (IACM) organized by Wildlife poaching wing at Office of PCCF, Van Sadan, Department of Environment, Forest and Climate change	Dept of Environment, Forests and Climate Change, Andaman and Nicobar Administration	14/02/2025
	Union Territory Wetland Management Authority Meeting under the Chairmanship of the Chief Secretary, Andaman and Nicobar Administration	Andaman and Nicobar Administration	17/10/2025
Dr. I. Jaisankar	Participated AICRP on IFS Annual Group meeting and presented ICAR-CIARI	RARI, Jaipur, Rajasthan	28.11.2025 to 30.11.2025
	International conference on Tropical root & tuber crops for Nutrition, Agri-Food Systems, Entrepreneurship and Sustainability (ISTRTC 4 NARES)	ICAR-CTCRI, Thiruvananthapuram	17/11/2025 to 21/11/2025
	Participated and presented the project achievement in 25th Annual Group Meeting on AICRP on Tuber Crops	CTCRI, Thiruvananthapuram	19/05/2025 to 20/05/2025
	Participated National Workshop on Celebrating Tribal Ingenuity: Strategies for Protecting, Valuing, and Marketing Tribal Farmers' Varieties, Innovations and Geographical Assets	Regional Station of ICAR- Central Tuber Crops Research Institute, Bhubaneswar, Odisha (Virtual).	01/05/2025

Name of Scientist	Programme	Organizer	Date
Dr. P. Perumal	National Symposium on Advancing Animal Health and Production through Biochemical and Biotechnological Innovations	WBUAFS–Faculty of Veterinary and Animal Sciences, Kolkata, West Bengal, India	28/11/2025 to 29/11/2025
	State Level Workshop on Preparation of Actionable Points as a Follow-up of VKSA-2025	ICAR-CIARI, Sri Vijaya Puram	16/12/2025
	10th International Conference on Global Research Initiatives for Sustainable Agriculture & Allied Sciences	Astha Foundation, Meerut, Uttar Pradesh, India	05/10/2025 to 07/10/2025
	Workshop on Fostering Harmony: Building Positive Workplace Relationships	ICAR-CIARI, Sri Vijaya Puram	30/04/2025

14. Human Resource Development programme

Sl. No.	Scientist	Programme	Organizer	Date
1.	Shri.Talaviya Harshangkumar	Hands-on training on Estimation of Pesticide Residues in Cereals and Vegetables.	Project co-ordinating Cell of the Pesticide Residue Laboratory at New Delhi, India	06-10 January, 2025
2	Dr. Prabhu P.	21 days WinterSchool Training on "Genetic and GenomicApproaches forImprovement ofStress Resilienceand NutritionalQuality in Crops'	ICAR-IARI, New Delhi	28 Feb- 20 March, 2025
3	Shri. Talaviya Harshangkumar Dr Abhilash Dr I. Jaisankar	National Workshop on Sustainable Agriculture through Natural Farming	ICAR-Central Island Agricultural Research Institute (CIARI), in collaboration with the Andaman Science Association (ASA) and Gujarat Natural Farming Science University (GNFSU)	May 13, 2025
6	All Scientist	Application and Management of e-Office and e-HRMS Systems in Official Language Hindi	ICAR-CIARI, Sri Vijaya Puram	09 July 2025
7	Dr. Perumal P.	Climate change scenario-Impact on agriculture & allied science	ASTHA Foundation, Meerut	08-22 August 2025
9	Dr. Gurunath Raddy	115th Foundation Course For Agricultural Research Service	Rashtriya Karmayogi Jan Seva training	11 August - 25 November 2025
12	Dr. R Kiruba Sankar Shri. Kanishk Bhukar	Rashtriya Karmayogi Jan Seva training	ICAR National Academy of Agricultural Research Management (NAARM), Hyderabad	15-17 December 2025
13	Dr. Raj Narayan	MDP on Leadership development (Pre RMP)		11-22 December 2025
14	Dr. I. Jaisankar Dr. Abhilash	Scientific approaches to crop protection and nutrient management in natural farming, organic farming, and integrated farming systems	ICAR-Central Island Agricultural Research Institute (CIARI) under HRD	11 to 17 December 2025

Sl. No.	Scientist	Programme	Organizer	Date
16	Dr. Jai Sunder Dr. Sharath S Yeligar Dr. K Munusamy Dr. Rafeeque Alyethodi Dr. Pooja Bohra Dr. Waman Ajit Arun Dr. P.A. Bala Dr. J Praveenraj Shri. Chittaranjan Raul Dr. Arun Kumar De Dr. Debasis Bhattacharya Dr. Perumal Ponraj Dr. P.K. Singh Dr. P. Prabhu Shri. D. Karunakaran Dr. Abhilash	Rashtriya Karmayogi Large Scale Jan Seva Program	ICAR-Central Island Agricultural Research Institute, Andaman and Nicobar Islands	26 December 2025

Administrative Staff

Sl. No.	Name	Programme	Organizer	Date
1	Shri. Kanishk Bhukar	Rashtriya Karmayogi Jan Seva training	ICAR National Academy of Agricultural Research Management (NAARM), Hyderabad	15-17 December 2025
2	Shri. K Erraya, Shri. P Kakesh Rao, Smti. Sheela Pal, Smti. G V Kantam & Shri. Tapan Shit	Rashtriya Karmayogi Large Scale Jan Seva Program	ICAR Central Island Agricultural Research Institute, Andaman and Nicobar Islands	26 December 2025

Category: Technical Staff

Sl. No.	Scientist	Programme	Organizer	Date
1	All Technical Staff	Application and Management of e-Office and e-HRMS Systems in Official Language Hindi	ICAR-CIARI Sri Vijaya Puram	09 July 2025
2	Shri. Alex Parveen Bala	SOUL 3.0: Installation & Operation	Information and Library Network (INFLIBNET) Centre, Gandhinagar, Gujarat	15-19 September 2025
3	Shri. Brajesh Kumar	Scientific Approaches to Crop Protection and Nutrient Management in Natural Farming, Organic Farming and Integrated Farming Systems	ICAR-CIARI Sri Vijaya Puram	11-17 December 2025
4	Shri. Satyanarayan K.		ICAR-CIARI Sri Vijaya Puram	11-16 December 2025
5	Smti. Naga Venkat Laxmi	Phytochemical analysis techniques in commercial crops	ICAR-National Institute for Research on Commercial Agriculture, Rajahmundry	08-16 December 2025
6	Shri. Arun Selvam Shri. A.K. Tripathi Shri. Mohit Kumar Smti. Asma Bibi Smti. Naga Venkat Laxmi Shri. Abhishek Kumar Shri. Chandan Smti. Shivani Kumari Shri. Ujjwal Kumar Shri. Brajesh Kumar Shri. Harsh Raj Shri. Hritik Raushan	Rashtriya Karmayogi Large Scale Jan Seva Program	ICAR Central Island Agricultural Research Institute, Andaman and Nicobar Islands	26 December 2025

Skilled Supporting Staff

Sl. No.	Name	Programme	Organizer	Date
1	Shri. Shyam Narayan Shri. Krishna Tigga Shri. P Nagaraj Shri. Lucas Minj Shri. N Gopinathan Shri. Telefer Minj Shri. Raja Rao Shri. N. Narasimulu Shri. P. Halder Shri Javed Shri. M. Peter Soreng Shri. Anoop Indwar Shri. Raja Rao Smti. D. Thangam Smti. A. Pandiyammal Shri. Mahadev Mondal Shri. Zakir Hussain Shri S. Thirupathi Rao Shri. Silvester Kerketta Shri. G. Soreng Shri Sanichar Barik Shri. Y. Vijay Rao Shri. Jetu Lohar Shri. J.P. Lakra	Basic Computer Literacy: Hands-on Training for Skilled Support Staff	ICAR-CIARI Sri Vijaya Puram	28-29 July 2025

Sl. No.	Name	Programme	Organizer	Date
2	Shri. Kishore Tete Shri. Abbubaker K Shri Satya Narayan Shri. Anup Indewar Shri. B Tulsi Rao Shri. S Mohan Rao Shri. Peter Soreng Shri. M. Javed Shri. Shyam Narayan Shri. Surender Singh Shri. Mahadev Mondal Shri. S. Thirupathi Rao Shri. G Tata Rao Smt. D. Thangam	Scientific Approaches to Crop Protection and Nutrient Management in Natural Farming, Organic Farming, and Integrated Farming Systems	ICAR-CIARI Sri Vijaya Puram	11-16 December 2025

iGOT HRD training details

Category	No of enrollment	No of trainings completed by CIARI staff	Training hours
Scientist (34)	432	347	520.61
Administrative (20)	332	227	396.23
Technical (45)	782	532	883.87
Skilled Support Staff (SS) (49)	112	38	42.35
Total= 148	**1658**	**1144**	**1843.06**

15. TRAINING AND CAPACITY BUILDING

a) Training to stakeholders

Sl. No	Training	Date	Participants (No.)M/F/T	Type of participants	Venue	Coordinators
1	Quality seed production techniques of Urd and Mung bean	01.01.2025	11/1/12	Farmers	KVK, Nimbudera, N & M Andaman	Dr. P.K.Singh Dr.Prabhu Dr. P. Rakesh Dawar Shri.K. Shyam Sunder Rao Shri. Bikash Chand Mondal
2	Quality seed production techniques of Urd and Mung bean	03.01.2025	9/3/12	Farmers	Keralapuram, Diglipur, N & M Andaman	
4	An Awareness Programme on Tuna Fish Aggregating Device	10.01.2025	12 /0/12	Village Moopans and President Maliku Fishermen Society	RS Minicoy	Dr. Gladston.Y. Smti. Ajina.S.M. Shri. Shareefuddeen Hassan K. Shri. Arif.M.I. Dr. Kiruba Sankar Dr. E.B. Chakurkar
5	An awareness programme on Integrated farming system and components	10.01.2025	7/15/22	Tribal participants of Minicoy Island, Lakshadweep		
7	Field day on “organic Integrated farming system “	31.01.2025	12/08/20	Farmers	ICAR-CIARI, Sri Vijaya Puram	Dr. Abhilash
8	Customized hands on training programme on Nursery Management in Horticultural Crops	04.02.2025 to 06.02.2025	10/8/18	Officials of UT Department of Agriculture		Dr. Ajit Arun Waman Dr. Pooja Bohra
10	Customized hands-on training programme on Nursery Management in Horticultural Crops	06.02.2025 to 08.02.2025	9/1/10	Officials of UT Department of Agriculture		Dr. Ajit Arun Waman Dr. Pooja Bohra
11	ICAR Sponsored Summer School on Livestock Reproduction Management under Impending Climate Change	12.02.2025 to 04.03.2025	12/08/20	Assistant Professors	ICAR-CIARI, Sri Vijaya Puram	Dr. E.B. Chakurkar Dr. R.R. Alyethodi Dr. P. Perumal

Sl. No	Training	Date	Participants (No.)M/F/T	Type of participants	Venue	Coordinators
12	Awareness Programme on National Surveillance Programme for Aquatic Animal Diseases (NSPAAD)	12.02.2025	24/0/24	Farmers	Madhpur	Dr. K. Saravanan Dr. J. Praveenraj Dr. R. Kiruba Sankar
13	Training programme on "Scientific Pig Farming" in collaboration with "ICAR-NRC on Yak", Dirang, Arunachal Pradesh	19.02.2025	60/45/105	Tribal Farmers	Dirang, Arunachal Pradesh	Dr.A. K. De, Dr. D. Bhattacharya
15	Awareness on Nutritious kitchen garden to school students	04.03.2025	20/30/50	Tribal participants of Minicoy Island, Lakshadweep	RS Minicoy	Dr. Gladston.Y. Smti. Ajina.S.M. Shri. Shareefuddeen Hassan K. Shri. Arif.M.I. Dr. Kiruba Sankar Dr. E.B. Chakurkar
16	Skill development programme for entrepreneurship in rural poultry	06.03.2025 to 07.03.2025	7/0/7	Farmers	ICAR-CIARI, Sri Vijaya Puram	Dr.T. Sujatha Dr. Sharath S. Yeligar
17	Training programme on "Scientific management of Pigs" in collaboration with KVK, AAU, Kharua, Baksa, Assam	21.03.2025	90/47/137	Farmers	Baksa, Assam	Dr.A. K. De, Dr. D. Bhattacharya
18	Training programme on "Sustainable pig farming for livelihood security" in collaboration with ICAR-IVRI ERS Kolkata	22.03.2025	50/37/87	Farmers	Kalyani, West Bengal	Dr.A. K. De, Dr. D. Bhattacharya

Sl. No	Training	Date	Participants (No.)M/F/T	Type of participants	Venue	Coordinators
19	Training on "Organic Integrated Farming System for livelihood improvement" and input distribution	02.04.2025 to 03.04.2025	15/0/15	Tribal Farmers from Nicobar	ICAR-CIARI, Sri Vijaya Puram	Dr. I. Jaisankar, Dr. Y. Ramakrishna, Dr. Abhilash Dr.Talaviya Harshankumar
20	Awareness programme on Marine fish diseases" under NSPAAD project	05.04.2025	20/7/27	Farmers	Car Nicobar	Dr.Chittaranjan Raul Dr. R Kiruba Sankar Dr.J Praveenraj
21	Conducted Sensitization Programme on Sustainable Masmin Production and Byproduct Utilization	01.05.2025	11/120/131	Tribal participants of Minicoy Island, Lakshadweep	RS Minicoy	Dr. Gladston.Y. Dr. Ajina.S.M. Dr. Shareefuddeen Hassan K. Dr. Arif.M.I. Dr.Kiruba Sankar Dr. E.B. Chakurkar
22	Capacity building programme on Goat management	20.05.2025 to 22.05.2025	10/15/35	Goat Farmers	Rangat, North and Middle Andaman	Dr. P. Perumal Dr. Arun Kumar De
23	Farmer led Quality Seed production in Paddy: Techniques and Practice	28.05.2025	20/5/25	Farmers	Keralapuram, Diglipur, N & M Andaman	Dr. P.K.Singh, Dr.Prabhu P. Dr.Rakesh Dawar Dr. Bikash Chand Mondal
24	Empowering Nicobarese Tribal Fishers: DAT Awareness Program by ICAR-CIARI	29.05.2025	22/03/25	Tribal participants of Car Nicobar Island	The Office of The Tribal Council, Big Lapathy	Dr.Kiruba Sankar Dr. E.B. Chakurkar Ms. Sonia Shri. Vinay Raj
25	Awareness program on the use of DAT(Distress Alert Transmitters) in marine fishing practices	30.05.2025	25/0/25	Tribal participants of Car Nicobar Island	Car Nicobar	Dr. R. Kiruba Sankar Dr. J Praveenraj Dr. Chittaranjan Raul Shri. Vinay Raj Ms. Sonia

Sl. No	Training	Date	Participants (No.)M/F/T	Type of participants	Venue	Coordinators
26	Awareness Programme on Aquatic Animal Diseases	31.05.2025	10/05/15	Farmers	Collinpur.	Dr. J. Praveenraj Dr. R. Kiruba Sankar
27	Awareness programme on "Report fish diseases App"	02.06.2025	14/22/36	Farmers	Bamboo Flat	
30	Three-Day Hands-on Training on Dweep Go-Fly Formulation	24.06.2025 to 26.06.2025	1/1/2	Business persons	NRM Division ICAR-CIARI	Shri. Talaviya H. Dr. D. Bhattacharya Dr.Abhilash Dr. E.B. Chakurkar
31	Sustainable Paddy Seed Production for Island Farmers	09.07.2025	20/2/22	Farmers	Keralapuram, Diglipur, N & M Andaman	Dr.P. K.Singh, Dr. V. Damodaran Dr. Prabhu P. Dr. P. Rakesh Dawar Shri. K. Shyam Sunder Rao Shri. Bikash Chand Mondal
32	Best Practices for Paddy Crop Management and Seed Production in Island Ecosystems	10.07.2025	22/3/25	Farmers	Hari Nagar, North and Middle	Dr. P.K.Singh Dr. V. Damodara Dr.Prabhu P. Dr. Rakesh Dawar Shri. K. Shyam Sunder Rao Shri. Bikash Chand Mondal
33	Training cum Field demonstration on Goat semen collection and AI for Veterinarians and Paravets.	18.08.2025 to 19.08.2025	18/20/38	Veterinary Doctors and Para vets	ICAR-CIARI, Sri Vijaya Puram	Dr. P. Perumal Dr. R.R Alyethodi
34	Days Short Course Training in Online Mode on Climate Change Scenario: Impact on Agriculture & Allied Sciences	08.08.2025 to 12.08.2025	45/35/80	Assistant Professors and Technical Officers	Astha Foundation, Meerut, Uttar Pradesh, India (Virtual)	Dr. P. Perumal

Sl. No	Training	Date	Participants (No.)M/F/T	Type of participants	Venue	Coordinators
35	Basic Computer Literacy: Hands-on Training for Skilled Supporting Staff	28.08.2025 to 29.08.2025	22/3/25	Skilled Supporting Staff	ICAR-CIARI, Sri Vijaya Puram	Shri. D. Karunakaran Dr. R Kiruba Sankar Smti. Asma Bibi
36	Awareness programme on aquatic animal diseases	29.08.2025	15/8/23	Farmers	Badmash pahad	Dr.J. Praveenraj Dr. Chittaranjan Raul Dr. R. Kiruba Sankar, Dr. Z. George Shri. Thanmai Paul Shri. Y. Ramakrishna
37	Scientific rearing and management of dairy cattle for the dairy farmer	30.08.2025 to 31.08.2025	15/22/37	Dairy Farmers	Indira Nagar, South Andaman	Dr. P. Perumal
38	Cattle feeding and management to improve milk production with ATMA and AH&VS, Andaman Administration	06.09.2025	24/15/39	Dairy Farmers	Indira Nagar, South Andaman	Dr. P. A. Bala Dr. P. Perumal
39	Hydroponics and Azolla with ATMA and AH&VS, Andaman Administration	13.09.2025	24/30/54	Dairy Farmers	Guptapara, South Andaman	Dr. P. A. Bala
40	Pig rearing in a scientific way with ATMA and AH&VS, Andaman Administration	20.09.2025	36/28/64	Dairy Farmers	Guptapara, South Andaman	Dr. P. A. Bala Dr. D. Bhattacharya
41	Awareness programme on aquatic animal diseases	29.09.2025	22/4/26	Farmers	ICAR-CIARI, Marine hill research lab	Dr. J. Praveenraj Dr. R. Kiruba Sankar Dr. Chittaranjan Raul
42	Awareness Training on Health and Wellness	04.11.2025	8/12/20	Tribal participants of Minicoy Island, Lakshadweep	RS Minicoy	Dr. Saneera E.K. Shri. Shareefuddeen Hassan K.

Sl. No	Training	Date	Participants (No.)M/F/T	Type of participants	Venue	Coordinators
43	Advance tuber crop cultivation for improving the productivity	08.11.2025	14/01/15	farmers	Experiment field, ICAR-CIARI, Vijaya puram	Dr. I. Jaisankar
44	Tuber crop based integrated farming system for livelihood improvement of Tribal Farmers	04.10.2025 to 07.10.2025	138/67/205	Farmers	Kakana, Pilpillow, ChottaEnaka villages of Nancowrie Island	Dr. I. Jaisankar Dr.Santosh Kumar Dr. Abhilash Shri. T. Harshangkumar
45	Skill development on application of technologies for entrepreneurship in rural poultry farming	06.11.2025 to 07.11.2025	0/5/5	Women Farmers	ICAR-CIARI, Sri Vijaya Puram	Dr. T. Sujatha
46	STC Input Distribution programme for Local Fishers	07.11.2025	19/0/19	Tribal participants of Minicoy Island, Lakshadweep	RS Minicoy	Dr. Saneera E.K. Shri. Shareefuddeen Hassan K
47	Training & Demonstration and Input Distribution on pig for Tribal Farmers	08.11.2025 to 09.11.2025	11/10/21	Farmers	ICAR-CIARI, Sri Vijaya Puram	Dr. P. A. Bala Dr. A.K.De
48	Awareness Training on Ongoing Schemes in Animal Husbandry Sector	09.11.2025	12/03/14	Tribal participants of Minicoy Island, Lakshadweep	RS Minicoy	Dr.Saneera.E.K Shri. Shareefuddeen Hassan K.
49	Intensive integrated farming system for improving the livelihood of the farmers	09.11.2025	14/01/15	Farmers	IFS field at ICAR-CIARI	Dr. I. Jaisankar Dr. Abhilash
50	Awareness Training on Government Schemes on Fisheries sector and STC Input Distribution	11.11.2025	04/13/20	Tribal participants of Minicoy Island, Lakshadweep	RS Minicoy	Dr.Saneera.E.K Shri. Shareefuddeen Hassan K.
51	Distribution of Vegetable seeds and Seedlings	15.11.2025	18/12/30	Tribal participants of Minicoy Island, Lakshadweep	Rammedu Village, Minicoy	

Sl. No	Training	Date	Participants (No.)M/F/T	Type of participants	Venue	Coordinators
52	Hands on training to Para vets on laboratory methods to study bacterial sensitivity.	19.11.2025 to 21.11.2025	2/0/2	Paravets	ICAR-CIARI, Sri Vijaya Puram	Dr. Jai Sunder, Dr. T. Sujatha Dr. A.K. De
53	Improvement of Minerals Management and Bypass Fat in Improving Productivity in Livestock under Island Eco System	20.11.2025	26/10/36	Farmers	Virtual	Dr. P.A. Bala
54	Awareness Program on Tribal Heritage Janjati Gaurav Diwas & Fisheries Day	21.11.2025 to 23.11.2025	27/02/29	Tribal participants of Car Nicobar Island	Coastal Fisheries Information Hub, Big Lapathy	Dr. Kiruba Sankar, Dr. E.B. Chakurkar Ms. Sonia Shri. Vinay Ra Smti. Tasneem Kauser
55	Scientific Pig Farming for Rural Livelihoods and Food Security in A & N Islands	02.12.2025 to 04.12.2025	99/69/168	Farmers	North and Middle Andaman	Dr. A.K. De Dr. P.A. Bala
56	Scientific Livestock Farming for improving farm productivity in island condition	02.12.2025 to 04.12.2025	81/79/160	Farmers	North and Middle Andaman	Dr. A.K. De Dr. P. A. Bala
57	Online training on "Packages and Practices of Major Crops for A&N Islands"	02.12.2025 to 04.12.2025	50/25/75	Agriculture Officials	ICAR-CIARI, Sri Vijaya Puram	Dr. Raj Narayan
58	Training on "Scientific approaches to crop protection and nutrient management in natural farming, organic farming, and integrated farming systems"	11.12.2025 to 17.12.2025	13/2/15	Technical Staff		Dr. I. Jaisankar Dr. Y. Ramakrishna Dr.Abhilash
59	Hands-on training programme on Scientific propagation techniques for major horticultural crops	17.12.2025 to 19.12.2025	08/10/18	Farmers, entrepreneurs, students		Dr. Ajit Arun Waman Dr. Pooja Bohra
60	Training programme on Harvest and postharvest management of major spice crops of Andaman and Nicobar Islands	22.12.2025	22/53/75	Farmers, entrepreneurs, students	DISHA-SURABI, Caddlegunj	

Sl. No	Training	Date	Participants (No.)M/F/T	Type of participants	Venue	Coordinators
61	Hands on training on Feeding management of livestock and feed technology	30.12.2025 to 07.01.2025	1/0/1	Technical staff of ICAR-CIARI	ICAR-CIARI, Sri Vijaya Puram	Dr. T. Sujatha
62	Skill Development Training on Application of Technology for Entrepreneurship in Rural Poultry Farming	06.03.2025 to 07.03.2025	4/5/9	Farmers / Entrepreneurs	ITMU	
Male -1250 Female-903 Total-2153						

b) Field day

Sl. No.	Training	Date	Participants (No.) M/F/T	Venue	Coordinators
1	Organic Integrated Farming System	31.01.2025	12/08/20	ICAR-CIARI, Garacharma experimental farm	Dr. T. Subramani Dr. I. Jaisankar Dr.Abhilash Shri. T. Harshankumar Dr. Y. Ramakrishna
2	Demonstrated technology on Fish based poultry feed preparation for labours at ICAR-CIARI RS MCY	05.03.2025	8/2/10	ICAR- CIARI Regional station Minicoy Tribal participants of Minicoy Island, Lakshadweep	Dr. Gladston.Y. Smti. Ajina.S.M. Shri. Shareefuddeen Hassan K.
3	Showcasing the potential of oil seed cultivation crops in Andaman Islands	17.04.2025	25/8/33	ICAR-CIARI Bloomsdale Farm, Chouldari	Dr. Prabhu. P. Dr. P.K. Singh Dr. Abhilash Dr. V. Damodaran Dr. Y. Ramakrishna Shri. Harshangkumar T. Shri. Mohit Shri. K. Shyam Sunder Rao Shri. Bikash Chand Mondal
4	Field day on Scientific Pig production	17.08.2025	11/10/21	Nimbudera, South Andaman	Dr. A.K. De Dr. P.A. Bala
5	Field day on Castration of piglets	26.08.2025	11/12/23	Nimbudera, South Andaman	

Sl. No.	Training	Date	Participants (No.) M/F/T	Venue	Coordinators
6	Demonstration of high yielding improved variety of rice for increasing production and productivity	23.09.2025	40/5/45	ICAR-CIARI, Bloomsdale Research Farm, Chouldari	Dr. P.K. Singh Dr.Abhilash Dr.Prabhu P. Shri. Bikash Chand Mondal Shri. Brajesh Kumar
7	Demonstration of Rice Growth and Yield under Different Transplanting Dates	23.09.2025	13/17/30	ICAR-CIARI, Bloomsdale Research Farm, Chouldari	Dr.Abhilash Dr. P.K. Singh Dr.Prabhu P.
8	Culture of shrimp in Biofloc system	02.10.2025	30/0/30	ICAR-CIARI, Marine Hill Lab	Dr. Chittaranjan Raul Dr. R. Kiruba Sankar Dr. J Praveenraj
9	Field Day on Sea Safety Practices and Applications	14.10.2025	21/5/26	Car Nicobar Island	Dr. R. Kiruba Sankar Ms. Sonia Shri. Vinay Raj
10	Field Day-Brinjal Cultivation under coconut plantation	01.11.2025	6/13/19	RS Minicoy	Dr. Saneera E.K. Shri. Shareefuddeen Hassan K.
11	Field day on Scientific brooding management of poultry chicks	18.11.2025	10/15/25	Rangachang, South Andaman.	Dr. K. Muniswamy Dr. T. Sujatha Dr. P. Perumal Dr.R. R. Alyethodi
Male 186 Female 82 Total 268					

c) Interaction Meet

Sl. No.	Training	Date	Participants M/F/T	Venue	Coordinators
1	Fishermen–Scientist Interaction Meet on Tuna Resources and Sustainable Fishing	05.05.2025	15/0/15	RS Minicoy	Dr. Gladston.Y. Smti. Ajina.S.M. Shri.Shareefuddeen Hassan K. Shri. Arif.M.I. Dr. R Kiruba Sankar Dr. E.B. Chakurkar

d) Field Demonstration

Sl. No.	Title	Date	Participants M/F/T	Type of participants	Venue	Coordinators
1	Demonstrated technology on Fish based poultry feed preparation for labours at ICAR-CIARI RS MCY	05.03.2025	8/2/10	Tribal participants of Minicoy Island, Lakshadweep	RS Minicoy	Dr. Gladston Y. Smti. Ajina S.M.

e) Workshop/Seminars organized

Sl. No.	Title	Date	Participants (No.) M/F/T	Type of participants	Venue	Coordinators
1	State Level Seminar on Entrepreneurship Opportunities for Island Youth and Women in Spices, Arecanut and Medicinal Plants Sector	05.03.2025 to 07.03.2025	33/39/72	Farmers, Entrepreneurs, Officials of UT Department of Agriculture and Rural Development	ICAR-CIARI, Sri Vijaya Puram	Dr. Ajit Arun Waman Dr. Pooja Bohra
2	Workshop on Import Substitution in Spices: Opportunities for Andaman and Nicobar Islands (WISS-2025)	02.04.2025	16/09/25	Officials of UT Department of Agriculture	ICAR-CIARI (Virtual mode)	Dr. Ajit Arun Waman Dr. Pooja Bohra Dr. E.B. Chakurkar
3	National Workshop on Sustainable Agriculture Through Natural Farming	12.05.2025	42/35/77	Scientists, Farmers, Scholars, Researchers etc	ICAR-CIARI, Sri Vijaya Puram	Shri. T. Harshang kumar Dr. I. Jaisankar Dr. Abhilash Dr.Prabhu P.

Sl. No.	Title	Date	Participants (No.) M/F/T	Type of participants	Venue	Coordinators
4	Environmental day celebration Beach cleaning drive	05.06.2025	08/03/11	Tribal participants of Minicoy Island, Lakshadweep	RS Minicoy	Dr. Gladston.Y. Smti. Ajina S.M. Shri. Shareefuddeen Hassan K. Shri. Arif M.I. Dr. R. Kiruba Sankar Dr. E.B. Chakurkar
5	Workshop on status of Antimicrobial Resistance in A&N Islands	24.11.2025	20/55/75	School students, Veterinarian, project staffs and staff of ICAR-CIARI	ICAR-CIARI, Sri Vijaya Puram	Dr. T.Sujatha, Dr. Jai Sunder Dr. A.K. De Dr. D. Bhattacharya
6	State Level Workshop on Viksit Krishi Sankalp Abhiyan-2025 (Kharif)	16.12.2025	26/15/41	Officials of ICAR-CIARI, KVK and UT Administration		Dr. Ajit Arun Waman
Male-161 Female-162 Total-323						

f) Awareness campaigns

Sl. No.	Title	Participants (No.) M/F/T	Date	Venue	Coordinators
1	Farmer Awareness Program on "Agromet Advisory Services for livelihood improvement in tribal farming community"	116/79/195	12.03.2025	Kakana, Pilpillow, ChottaEnaka and Hitui	Dr. I. Jaisankar, Dr. Abhilash Dr. T. Harshang Kumar Dr. Santosh Kumar

Sl. No.	Title	Participants (No.) M/F/T	Date	Venue	Coordinators
2	Farmer Awareness Program on "Enhancing Farmer Awareness on GraminKrishiMausamSewa (GKMS) and Integrated Pest & Disease Management in Vegetables during the Pre-Monsoon Season."	45/09/54	21.03.2025 to 23.03.2025	Krishna Nagar, SwarajDweep	Dr. Abhilash Shri. T. Harshangkumar Shri. Mohit
3	Delivered lecture and offered guidance to students in creating innovative projects focused on AI technology and its applications at the Science Center in Sri Vijaya Puram	25/0/25	30.03.2025	Science Center in Sri Vijaya Puram	Shri. D. Karunakaran
4	Gunvata Yatra on NABL Accreditation	21/19/40	29/04/2025	ICAR-CIARI Sri Vijaya Puram	Dr. R. Alyethodi
5	Beach cleaning drive	10/14/24	05.06.2025	Tribal participants of Minicoy Island, Lakshadweep	Dr. Gladston.Y. Smti. Ajina.S.M.
6	Plantation drive on mangrove	8/2/10	05.06.2025 to 06/06/2025	Tribal participants of Minicoy Island, Lakshadweep	
7	Plantation drive on medicinal plants	12/12/24	05.06.2025	Tribal participants of Minicoy Island, Lakshadweep	
8	Farmer Awareness Programme on Soil and Water Conservation Techniques for Resilient Farming during Monsoon season in Nicobar Islands	87/31/118	16.06.2025 to 18.06.2025	Sanu, Kamorta, Vikas Nagar, BadaEnaka and Munka Village of Nancowrie Island	Shri. I. Jaisankar Dr. Santosh Kumar Dr. Abhilash Shri. T. Harshangkumar
9	Yoga day celebration 2025	02/11/13	21.06.2025	RS Minicoy	Dr. Gladston.Y. Smti. Ajina.S.M. Shri. Shareefuddeen Hassan K. Shri. Arif.M.I. Dr. R. Kiruba Sankar Dr. E.B. Chakurkar
10	Backyard Vegetablecultivation during Monsoon and farmer awareness on Weather Based Advisory services by ICAR-ClARl	21/32/53	04.07.2025 to 06.07.2025	Car Nicobar	Dr. Abhilash Shri. T. Harshangkumar Dr. I. Jaisankar

Sl. No.	Title	Participants (No.) M/F/T	Date	Venue	Coordinators
11	National Goat Day	36/0/36	12.07.2025	Namunaghar, South Andaman	Dr. Jai Sunder Dr. R.R. Alyethodi
12	Celebration of World Coconut Day	0/23/23	04.09.2025	Sippighat	Dr. Ajit Arun Waman
13	Celebration of 10th Ayurveda Day	61/47/108	23.10.2025	Sippighat	
14	Vigilance Awareness week	200/239/439	27.10.2025 to 31.10.2025	ICAR-CIARI Villages	Dr. T.Sujatha Shri.Kanishk Bhukar
15	Scientific Goat farming	36/0/36	22.11.2025	Baratang	Dr. R.R. Alyethodi Dr. P Perumal
16	Scientific Goat Farming	17/0/17	23.11.2025	Rangat	
17	Scientific Goat Farming	42/0/42	24.11.2025	Nimbudera	
18	Awareness on Antimicrobial Resistance in A&N Islands	50/105/155	19.11.2025 to 24.11.2025	ICAR-CIARI and VH, South Andaman and Nicobar Island	Dr. T. Sujatha Dr. Jai Sunder Dr. A.K. De Dr. D.Bhattacharya
19	Constitution Day (Samvidhan Diwas)	60/10/70	26.11.2025	ICAR-CIARI Sri Vijaya Puram	Shri. D. Karunakaran
20	Agricultural Education Day-2025	130/110/240	27.11.2025 to 03.12.2025		
21	World Intellectual Property Day	20/52/72	02.12.2025		Dr. T. Sujatha Dr. E.B.Chakurkar
Male-846 Female-761 Total-1607					

g) Health Camp

Sl. No.	No of animals	Date	Venue	Coordinators
1	18	15.05.2025	Villages under Garacharma Veterinary Hospital	Dr P. Perumal Dr. Subramanian
2	25	20.05.2025 to 22.05.2025	Villages under Rangat Veterinary Hospital	Dr. P. Perumal Smti. Aleena Rajan
3	15	29.05.2025	Villages under Manglutan Veterinary Dispensary	Dr. P. Perumal Shri. L. N. Sahebrao
4	20	30.05.2025	Villages under Rangachang Veterinary Dispensary	Dr. P. Perumal Shri. Siva Rani
5	20	21.06.2025	Villages under Manglutan Veterinary Hospital	Dr. P. Perumal Shri. L. N. Sahebrao
6	32	12.07.2025	Namunaghar, South Andaman	Dr. Jai Sunder Dr. R. R Alyethodi

Sl. No.	No of animals	Date	Venue	Coordinators
7	20	06.07.2025	Villages under Manglutan Veterinary Hospital	Dr. P. Perumal Shri. L. N. Sahebrao
8	20	28.07.2025	Villages under Manglutan Veterinary Hospital	
9	15	05.08.2025	Macca Pahad	Dr. P. Perumal Shri. Siva Rani
10	12	06.08.2025	Calicut	Dr. P. Perumal Shri. Subramanian
11	16	11.08.2025	Villages under Guptapara Panchayat	Dr. P. Perumal Shri. L. N. Sahebrao
12	16	21.08.2025	Garacharma	Dr P. Perumal Shri. Subramanian
13	4	22.08.2025	Hamfreygunj	Dr. P. Perumal Shri. L. N. Sahebrao
14	9	26.08.2025	Wandoor, Indira Nagar and Hamfreygunj	
15	20	15.09.2025	Port Mout	Dr. P. Perumal Smt. Sanjhali Soren
16	14	16.09.2025	Villages under Garacharma VD	Dr. P. Perumal Shri. Subramanian
17	12	18.09.2025	Villages under Garacharma VD	Dr. P. Perumal Shri. Subramanian
18	20	07.10.2025	Villages under Manglutan Veterinary Hospital	Dr. P. Perumal Shri. L. N. Sahebrao
19	15	25.11.2025	Mayabunder	Dr. P. Perumal Dr. R.R. Alyethodi Smti. Sujatha Hegde

h) Exposure visit Students /Farmers

Sl. No.	Programme	Participants (No.) M/F/T	Date	Coordinators
1	Exposure Visit of Farmers to Organic Integrated Farming System	12/12/22	31.01.2025	Dr. T. Subraman Dr. Abhilash Dr. I. Jaisankar Dr. Y. Ramakrishna Shri. T. Harshangkumar
2	Exposure Visit of students from "Government Model Senior Secondary School, Abardeen Bazar" to Integrated Farming System	41/66/107	11.03.2025	Dr.Abhilash Dr. I. Jaisankar Shri. T. Harshangkumar
3	Exposure Visit of students from Government Model Senior Secondary school, Sri Vijaya Puram	250/50/300	11.03.2025	Shri. D. Karunakaran
4	Exposure Visit of students from "Government Model Senior Secondary School, Port Mout" to Integrated Farming System	89/111/200	12.03.2025	Dr.Abhilash Dr. I. Jaisankar Shri. T. Harshangkumar

Sl. No.	Programme	Participants (No.) M/F/T	Date	Coordinators
5	Exposure Visit of students from Government Senior Higher Secondary school, Port Mout, South Andaman	120/180/300	12.03.2025	Shri. D. Karunakaran
6	Exposure Visit of students from Govt. Sr. Secondary School, Bathubasti	100/56/156	21.03.2025	
7	Exposure Visit of Farmers from Nicobar to Agrometeorological Observatory and awaring Farmers to the GKMS project	15/0/15	02.04.2025	Dr.Abhilash Dr. I. Jaisankar Shri. T. Harshangkumar
8	Exposure Visit of students from Govt Sr. Secondary School, Mannarghat, and RGT Public Vidyalaya	36/22/58	03.09.2025	Shri. D. Karunakaran
9	Exposure Visit of students from Govt. Sr. Secondary School, South Point, Sri Vijaya Puram	78/67/145	08.09.2025	
10	Organized exposure visit to Fonialanasi Self Help Group, Sedivalu village which is expertised in making traditional Minicoy snacks	01/10/11	03.11.2025	Dr. Saneera E.K. Shareefuddeen Hassan K.
11	Organized exposure visit to Government Handicraft Training cum production Unit, Minicoy	10/05/15	05.11.2025	
12	Exposure visit cum hands on experience on technologies in the field of agriculture and allied activities and input distribution	14/1/15	07.11.2025 to 10.11.2025	Dr. I Jaisankar Dr. Abhilash Dr. Y. Ramakrishna Dr. P. Prabhu
13	Organized an exposure visit to MINMAS Fish processing Unit – An Agri Start Up	10/01/11	13.11.2025	Dr. Saneera E.K. Shareefuddeen Hassan K.
14	Exposure Visit of students from "Ummat Public School, Austinabad" to Integrated Farming System	18/36/54	02.12.2025	Dr. Abhilash Dr. I. Jaisankar
15	Agricultural Education Day	50/0/50	03.12.2024	Shri. D. Karunakaran
Male-844 Female-617 Total-1461				

i) Students guided

Name of the Scientist	Name of the student	Degree/ University	Period
Dr. Ajit Arun Waman	Ms.Saborni Mazumder	M.Sc. (Biotechnology), VELS University, Chennai	3 months
	Ms. Nandini Devi	B.Sc. (Botany), JNRM, Sri Vijaya Puram	45 days
Dr. Pooja Bohra	Ms. Simran S.	B.Tech. (Biotechnology), Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science & Technology	6 months
Dr. E. B. Chakurkar Dr. P. Perumal	Dr. Z. George	Ph.D. WBUAFS, Kolkata	1 year

Dr. P. Perumal	Dr. S. Baidya	M.V.Sc. , WBUAFS, Kolkata	6 months
Dr. P. Perumal Dr. R.R. Alyethodi	Dr. S.D. Rongmei	Ph.D., WBUAFS, Kolkata	1 year
Dr. Abhilash	Smti. Priyanka Lall	M.Sc (Agri.) Agronomy, Sam Higginbottom University of Agriculture, Technology and Sciences, Uttar Pradesh	01 months
Dr. Abhilash	Smti. Shreya Biswas Smti. B. Pratibha Smti. Shraddha Lall	Vel Tech Rangarajan Dr.Sagunthala R&D Institute of Science & Technology, Chennai	01 month
Dr. R.R. Alyethodi	Ms. B.Pratibha	B.Tech Engineering, Vel Tech Rangarajan Dr.Sagunthala R&D Institute of Science & Technology, Chennai	01 months

j) Radio Talks /Advisory

Title	Date of broadcast	Expert
KisanVani/ Krishi Jagath/ Krishi paramarsh (Frequency-684KHz/100.9MHz)	Each Tuesday and Friday (253)	ICAR-CIARI agro-advisory panel: Dr. Abhilash, Dr. I. Jaisankar Dr. T. Sujatha, Dr. P.K Singh Dr. Ajit Arun Waman, Dr. Y. Ramakrishna, Dr. Santosh Kumar, Dr. V. Damodaran Dr. Pooja Bohra, Dr. R. Kiruba Sankar , Dr. Jai Sunder

k) Doordarshan Interview

Title	Date of broadcast	Expert
Duck Farming in Andaman & Nicobar Islands	23/01/2025	Dr. T. Sujatha
Poultry farming as a source of livelihood	10/07/2025	
Tribal Health care system for livestock	11/09/2025	
Breeding and seed production of Indian Major carps	26/05/2025	Dr. Chittaranjan Raul
Aquaponics farming system in Andaman Islands	31/07/2025	
Empowering Farmers: New price Incentives Boost Organic Agriculture in Andaman	19/06/2025	Dr. Sharath S. Yeligar
Pig farming: a boon to island Farmers	12/06/2025	Dr. Arun Kumar De
Empowering Farmers: New price Incentives Boost Organic Agriculture in Andaman	19/06/2025	Dr. Sharath. S. Yeligar
Goat rearing a profitable business in the islands	07/08/2025	Dr. P. A. Bala
Feed and fodder resources of Andaman and Nicobar Islands	11/10/2025	
Quail farming in Andaman Nicobar Islands: a promising venture for sustainable Livelihood	04.09.2025	Dr. R.R Alyethodi
अंडमान और निकोबार द्वीप समूह म धान कटाई के बाद परती भूमि (Rice Fallow Land) में दलहन खेती	20/11/2025	Dr. P. K. Singh

16. KVKs

ICAR-Krishi Vigyan Kendra, South Andaman

Trainings

Discipline	No. of Trainings	Male	Female	Total
Agronomy	0	0	0	0
Horticulture	05	18	82	100
Animal Science	04	55	82	137
Fisheries	0	0	0	0
Agril. Engg.	0	0	0	0
Plant Protection	02	23	25	48
Home Science	05	0	185	185
Total	**16**	**96**	**374**	**470**

I. Front Line Demonstration (FLD)

Discipline	No. of FLD
Agronomy	0
Horticulture	01
Animal Science	02
Fisheries	0
Agril. Engg.	0
PlantProtection	01
Home Science	02
Total	**06**

II. On Farm Trials (OFT)

Discipline	No. of OFT
Agronomy	0
Horticulture	03
Animal Science	02
Fisheries	0
Agril. Engg.	0
PlantProtection	03
Home Science	02
Total	**10**

ICAR-Krishi Vigyan Kendra, North & Middle Andaman, Nimbudera

Trainings

Discipline	No. of Trainings	Male	Female	Total
Agronomy	05	87	28	115
Horticulture	02	44	12	56
Animal Science	03	88	56	144
Fisheries	03	86	54	140
Agril. Engg.	02	34	26	60
Plant Protection	00	00	00	00
Home Science	02	22	31	53
Total	**17**	**361**	**207**	**568**

I. Front Line Demonstration (FLD)

Discipline	No. of FLD
Agronomy	02
Horticulture	01
Animal Science	00
Fisheries	02
Agril. Engg.	03
Plant Protection	00
Home Science	02
Total	**10**

II. On Farm Trials (OFT)

Discipline	No. of OFT
Agronomy	02
Horticulture	00
Animal Science	00
Fisheries	02
Agril. Engg.	02
Plant Protection	00
Home Science	02
Total	**09**

ICAR-Krishi Vigyan Kendra, Car-Nicobar

Trainings

Discipline	No. of Trainings	Male	Female	Total
Agronomy	4	46	62	105
Horticulture	4	53	67	120
Animal Science	1	15	13	28
Fisheries	1	18	13	31
Agril. Engg.	4	86	123	209
PlantProtection	2	32	42	74
Home Science	0	0	0	0
Total	**16**	**250**	**320**	**567**

I. Front Line Demonstration (FLD)

Discipline	No. of FLD
Agronomy	2
Horticulture	3
Animal Science	1
Agril. Engg.	4
Social Science	1
Total	**11**

II. OnFarmTrials (OFT)

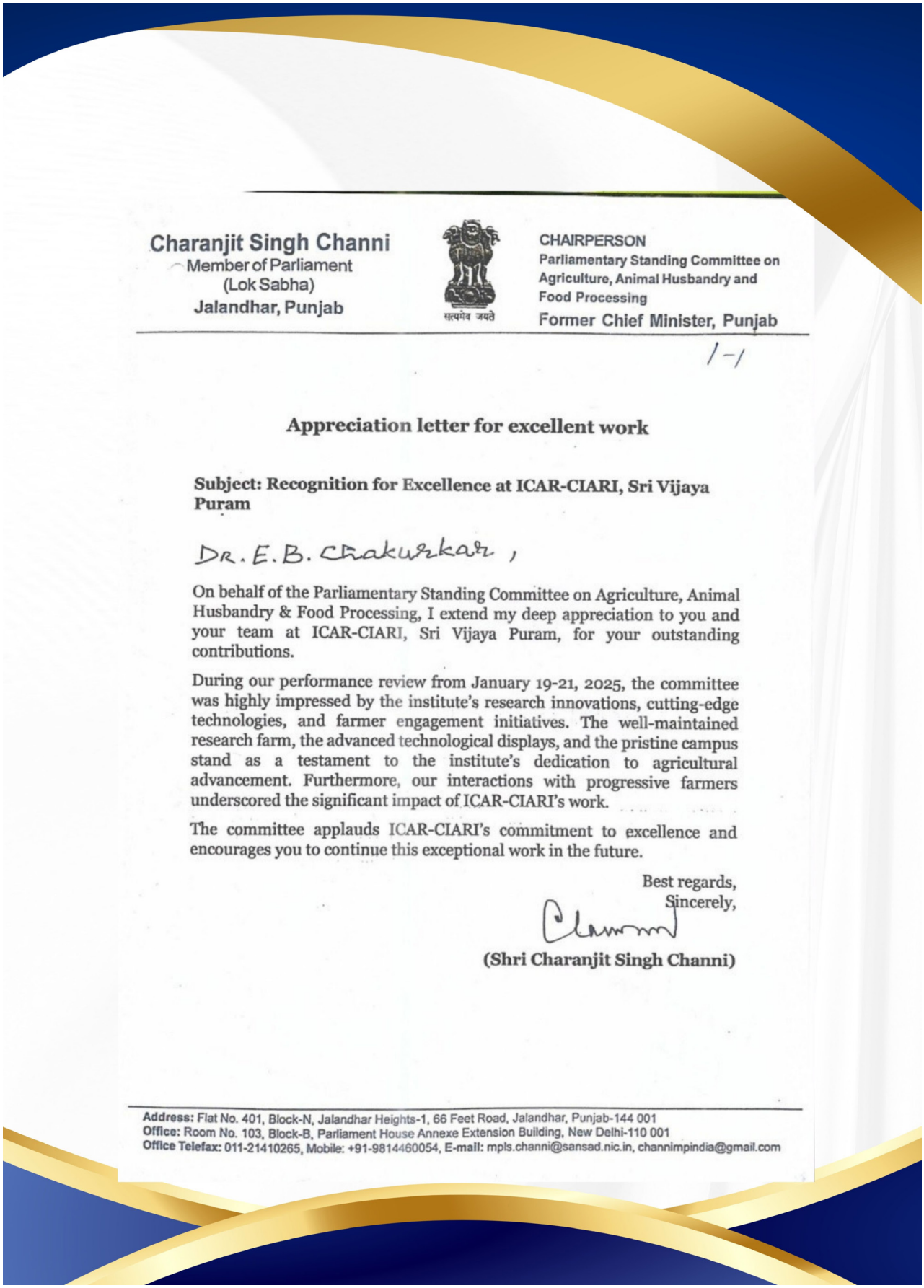
Discipline	No. of OFT
Agronomy	2
Horticulture	2
Animal Science	1
Agril. Engg	1
Social Science	2
Total	**8**

16.1 Annual 12 points information for the year 2025

S.No	Output	Numbers with details
1	Collection of germplasm	240
2	Characterization of germplasm	175
3	Development of pre-breeding lines	19
4	Identification of promising / elite breeding lines	17
5	Identification &release of varieties / hybrids	36
6	Standardization of production/protection/ post-harvest handling/ processing/ value addition/ biotechnology process/diagnostic kit or process, technologies	20
7	Post-harvest and value addition	
8	No of citations/ H-index (Till date) for Research articles with details	Total Citation: 2474 i-index: 25 i10-index: 63
9	Training Capacity Building of Stakeholders	32
10	Field Demonstration of technologies	45
11	Production of breeder / truthfully labelled seeds (vegetable, spices, mushrooms) – Quintals	40.38 q
12	Production of breeder seed of tuber crops (tonnes)	33q
13	Production of rooted cuttings (nos.)	10928
14	Production of quality plant materials (Nos.)	38679

16. MOMENTS TO CHERISH

Impression of delegates



Charanjit Singh Channi
Member of Parliament
(Lok Sabha)
Jalandhar, Punjab

सत्यमेव जयते

CHAIRPERSON
Parliamentary Standing Committee on
Agriculture, Animal Husbandry and
Food Processing
Former Chief Minister, Punjab

1-1

Appreciation letter for excellent work

Subject: Recognition for Excellence at ICAR-CIARI, Sri Vijaya Puram

Dr. E.B. Chakurkar ,

On behalf of the Parliamentary Standing Committee on Agriculture, Animal Husbandry & Food Processing, I extend my deep appreciation to you and your team at ICAR-CIARI, Sri Vijaya Puram, for your outstanding contributions.

During our performance review from January 19-21, 2025, the committee was highly impressed by the institute's research innovations, cutting-edge technologies, and farmer engagement initiatives. The well-maintained research farm, the advanced technological displays, and the pristine campus stand as a testament to the institute's dedication to agricultural advancement. Furthermore, our interactions with progressive farmers underscored the significant impact of ICAR-CIARI's work.

The committee applauds ICAR-CIARI's commitment to excellence and encourages you to continue this exceptional work in the future.

Best regards,
Sincerely,

(Shri Charanjit Singh Channi)

Address: Flat No. 401, Block-N, Jalandhar Heights-1, 66 Feet Road, Jalandhar, Punjab-144 001
Office: Room No. 103, Block-B, Parliament House Annexe Extension Building, New Delhi-110 001
Office Telefax: 011-21410265, Mobile: +91-9814460054, **E-mail:** mpls.channi@sansad.nic.in, channimpindia@gmail.com

17. LINKAGE AND COLLABORATION WITH OTHER DEPARTMENTS

Academic exchange with Agricultural Universities (OUAT, KAU, WBUAFS, BCKV, TNAU, YSRU, TNJFU, TNAUVAS, GKMS and TNFU)

Research Collaboration

- WBUAFS, Vivek Bhawan 68, Kshudiram Bose Sarani, Belgachia, Kolkata - 700 037, West Bengal, India
- Bidhan Chandra Krishi Viswavidyalaya P.O. Krishi Viswavidyalaya, Mohanpur,Dist- Nadia, West Bengal, India, Pin-741252
- Tamil Nadu Veterinary and Animal Sciences University, Madhavaram Milk Colony, Chennai - 600 051, Tamil Nadu, India
- Acharya N.G. Ranga Agricultural UniversityLam- 522 034 Guntur (Dist), Andhra Pradesh
- Kerala Agricultural University KAU Main Campus KAU P.O., VellanikkaraThrissur Kerala 680656
- Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli.
- Dr. Y. S. R. Horticultural University, Venkatara, Mannagudem, West Godavari Andhra Pradesh
- Bishop Heber College (Autonomous), Tiruchirapalli, Tamil Nadu
- Tamil Nadu Agriculture University , Coimbatore-641003, Tamil Nadu, India
- CSIR- Central Institute of Medical and Aromatic Plants, Lucknow
- India Meterological Department , Ministry of Earth Sciences On Gramin Krishi Mausam Seva.

18. PERSONNEL

Director — **Dr. Eaknath B. Chakurkar (upto 30th Sept, 2025)**
Dr. Jai Sunder (ACT.) w.e.f 1st Oct, 2025

HEAD / INCHARGE DIVISIONS / SECTION/ KVK

Head, Division of Animal Science	:	Dr. Jai Sunder
Head, Division of Horticulture and Forestry	:	Dr. Raj Narayan
Head I/c, Division of Natural Resource Management	:	Dr. I. Jaisankar w.e.f 1st Feb, 2025
Head I/c , Division of Fisheries Science	:	Dr. R. Kiruba Sankar (Upto 30th Dec, 2025) Dr. M. Muruganandam w.e.f. 31st Dec, 2025
(I/c) Field crop Improvement and protection Section	:	Dr. Pankaj Kumar Singh
Senior Scientist & Head, KVK (South Andaman)	:	Dr. Y. Ramakrishna
Senior Scientist & Head, KVK (Nicobar)	:	Dr. Santosh Kumar
Senior Scientist & Head, KVK (North & Middle Andaman)	:	Dr. V. Damodaran
Administrative Officer	:	Shri. Kanisk Bhukar
Finance & Accounts Officer	:	Shri. Santosh Kumar Satapathy w.e.f. 15th Oct, 2025
Incharge, Priority setting, Monitoring & Evaluation Cell	:	Dr. Jai Sunder (upto 21st May 2025) Dr. T. Sujatha w.e.f 22nd May, 2025
Incharge, AKMU	:	Shri D. Karunakaran
Incharge, Library	:	Dr. T. Sujatha
Incharge, Central Instrumentation Facility	:	Dr. D.Bhattacharya (Upto 24th September, 2025) Dr. Pooja Bohra w.e.f. 25th Sept, 2025
Incharge Women Cell	:	Dr. Pooja Bohra
Incharge, Estate Section	:	Er. M. Arul Selvam
Incharge, Guest House	:	Mr. A.K. Tripathi
Incharge, Security Officer	:	Mr. P. Karupaiah
Farm Coordinator, Garacharma	:	Shri. A. K. Tripathi
Farm Coordinator, Sippigaht Farm	:	Dr. Ajit Arun Waman
Farm Coordinator, Bloomsdale Farm	:	Dr. P.K. Singh
Farm Coordinator, Marine Hill	:	Dr. R. Kiruba Sankar
Incharge, ITMU	:	Dr. T. Sujatha (upto 30th June, 2025) Dr. Arun Kumar De w.e.f 1st July, 2025
Incharge PG Cell	:	Dr. T. Sujatha
Hindi Cell I/c	:	Shri. Shyam Sundar Rao

Nodal Officer, Regional Centre, Minicoy	:	Dr. R. Kiruba Sankar (Upto 31st June, 2025) Dr. I. Jaisankar w.e.f 1st July, 2025 ,
Incharge, Regional Station, Minicoy	:	Dr. E. K. Saneera w.e.f 16th Oct, 2025
Farm Superintendent, Garacharma	:	Shri.. A.K. Tripathi
Farm Manager, Bloomsdale Farm	:	Shri. Shyam Sunder Rao
Vigilance Officer	:	Dr. T. Sujatha
Nodal Officer, HRD	:	Dr. R. Kiruba Sankar
Central Public Information Officer	:	Dr. Rafeeque Rehman Alyethodi
Nodal Officer EOFFICE, & Krishi Kosh, Communication	:	Dr. D. Karunakaran
Nodal Officer Nodal Officer Monitoring, Evaluation, Learning and Impact Assessment (MELIA) Unit		Dr. T. Sujatha
Nodal Officer Gender Research in Agriculture		Dr. Pooja Bohra
Nodal Officer, Swachh Bharat Abhiyan	:	Dr. D. Karunakaran w.e.f 19th Sept, 2025
Nodal Officer, STC	:	Dr. J. Praveenraj w.e.f 23rd May, 2025

Division of Horticulture & Crop Improvement Division

1. Dr. Raj Narayan, Pr. Scientist (Vegetable Science) & Head
2. Dr. Ajit Arun Waman, Sr. Scientist (Spices, Plantation Crops, Medicinal and Aromatic Plants)
3. Dr. Pooja Bohra, Sr. Scientist (Fruit Science)
4. Dr. P.V. Puneeth, Scientist (Vegetable science)
5. Dr. T. Bharathimeena, Scientist (Agricultural Entomology).

Division of Animal Science

1. Dr. Jai Sunder, Pr. Scientist (Veterinary Microbiology) & Head.
2. Dr. D. Bhattacharya, Pr. Scientist (Veterinary Parasitology).
3. Dr. T. Sujatha, Pr. Scientist (Poultry Science)
4. Dr. P.A. Bala, Pr. Scientist (Animal Nutrition)
5. Dr. A.K. De, Sr. Scientist (Animal Biotechnology).
6. Dr. P. Perumal, Sr. Scientist (Animal Reproduction & Gynaecology).
7. Dr. K. Muniswamy, Scientist (Animal Biotechnology)
8. Dr. Rafeeque Rahman Alyethodi (Animal Genetics & Breeding)
9. Dr. Sharath S. Yeligar, Scientist (Agricultural Economics)
10. Dr. J. Chaithrashree, Scientist (Agricultural Extension)

Division of Natural Resource Management

1. Dr. I. Jaisankar, Pr. Scientist (Agroforestry) & Head (I/c).
2. Dr. Abhilash, Scientist (Agricultural Meteorology).
3. Shri.Talaviya Harshangkumar, Scientist (Agricultural Chemicals) upto 28/07/2025.
4. Dr. Gurunath Raddy, Scientist (Agronomy).
5. Dr. Arkadeb Mukhopadhyay, Scientist (Agricultural Chemicals).
6. Dr. E.K. Saneera, Scientist (Entomology), RS minicoy, Lakshadweep.

Division of Fisheries Science

1. Dr. M. Muruganandam, Pr. Scientist (Fisheries Resource Management) & Head, w.e f 31/12/2025
2. Dr. R. Kiruba Sankar, Sr. Scientist (Fish & Fisheries Science) I/c Head upto 30/12/2025
3. Dr. K. Saravanan, Sr. Scientist (Fish Health) upto 24/05/2025
4. Dr. J. Praveenraj, Scientist (Fish Health)
5. Shri. D. Karunakaran, Scientist (Computer Application in Agriculture)
6. Dr. Gladston Y., Scientist (Fisheries Resource Management), RS minicoy, Lakshadweep upto 10/10/2025
7. Smti. Ajina S.M., Scientist (Fisheries Resource Management), RS minicoy, Lakshadweep upto 10/10/2025
8. Shri. Chittaranjan Raul, Scientist (Aquaculture

9. Dr. Jess Maria Wilson, Scientist (Aquaculture).
10. Dr. A.K.O Ratheesh, Scientist (Fisheries Research and Management)

Field Crops Improvement and Protection Section

1. Dr. P.K. Singh, Pr. Scientist (Plant Genetics & Breeding) & (I/c)
2. Dr. Prabhu P., Scientist (Economic Botany & Plant Genetic Resources)

Krishi Vigyan Kendra, Sri Vijaya Puram

1. Dr. Y. Ramakrishna, (Agronomy) Pr. Scientist & Head
2. Dr. Zachariah George, Subject Matter Specialist (Animal Science)
3. Dr. Pooja Kapoor, Subject Matter Specialist (Home Science)
4. Smti. Sushma, SMS (Spices, Plantation Crops, Medicinal and Aromatic Plants)
5. Dr. Mohit, SMS (Plant pathology)

Krishi Vigyan Kendra, North & Middle Andaman

1. Dr. V. Damodaran, (Agronomy) Sr. Scientist & Head
2. Er. Manoj Kumar, Subject Matter Specialist, (Agricultural Engineering)
3. Shri. Yatharth Sharma, SMS (Home Science)
4. Shri. Subam Debroy, SMS (Aquaculture)
5. Shri. Rakesh Dawar, SMS (Agronomy)

Krishi Vigyan Kendra, Nicobar

1. Dr. Santhosh Kumar, (Horticulture), Pr. Scientist & Head
2. Dr. Akshay, SMS (Fruit Science)
3. Shri. Deepoo Meena, SMS (AS & PE)
4. Shri. Ajmal S, SMS (Agricultural Economics)
5. Shri. Sanketh. G.D, SMS (Agronomy)

19. PROMOTION/ TRANSFER/ RETIREMENT/ OBITUARY

New Entrants					
Sl.No.	**Name**	**Designation**	**Discipline**	**ICAR Joining**	**CIARI Joining**
1.	Dr. Puneeth P.V.	Scientist	Vegetable Science	07.07.2025	27.10.2025
2.	Dr. Jess Maria Wilson	Scientist	Aquaculture	07.07.2025	27.10.2025
3.	Dr. Arkadeb Mukhopahyay	Scientist	Agricultural Chemicals	07.07.2025	27.10.2025
4.	Dr. Chaithrashree J	Scientist	Agricultural Extension	07.07.2025	27.10.2025
5.	Dr. Gurunath Reddy	Scientist	Agronomy	08.07.2025	08.07.2025
6.	Dr. Saneera E.K	Scientist	Agricultural Entomology	01.01.2026	03.10.2025
7.	Shri. Harsh Raj	Technician	-	17.02.2025	17.02.2025
8	Shri. Chandan Kumar	Technician	-	03.03.2025	03.03.2025
9.	Shri. Santosh Kumar Satapathy	FAO	-	-	15.10.2025

Transfer				
Sl. No	**Name**	**Designation**	**Transfer**	**Relieve**
1	Shri. B.B.V. Trinath,	SSS	ICAR-CRIDA, Hyderabad	11.04.2025
2	Shri. B.V.B.Swamy	SSS	ICAR-CRIDA, Hyderabad	04.11.2025
3	Dr. K. Saravanan	Sr. Scientist	ICAR-CIBA, Chennai	08.05.2025
4	Shri. G. Prasanth	FAO	Indian Forest Service-2024	19.08.2025
5.	Shri Vishal Saroha	Assistant	NRC on Pomegranate, Solapur	29.08.2025
6	Dr. Gladston Y	Scientist	ICAR-CMFRI, RS, Vizhinjam Thiruvanzntthapuram	10.10.2025
7	Smti. Ajina S.M	Scientist	ICAR-CMFRI, RS, Vizhinjam Thiruvanzntthapuram	10.10.2025

Promotion			
Sl. No.	**Name**	**Designation**	**Promotion**
1	M. Srinivasan, SSS	Technician	06.05.2025
2	Shri. K.Satya Narayan, SSS	Technician	06.05.2025
3	Shri. Bikash Chandra Mondal, SSS	Technician	06.05.2025

Retiremant			
Sl. No.	**Name**	**Designation**	**Retirement**
1	Shri. P. Simhachalam	Technician	28.02.2025
2	Shri. Nemai Chandra Paul	Technician	30.04.2025
3	Smti. Champa Das	Technician	30.04.2025
4	Dr. E. B. Chakurkar	Director	30.09.2025

Obituary			
Sl. No.	**Name**	**Designation**	**Date of Demise**
1	Late M. Srinivasan	Ex- Technician	26.11.2025

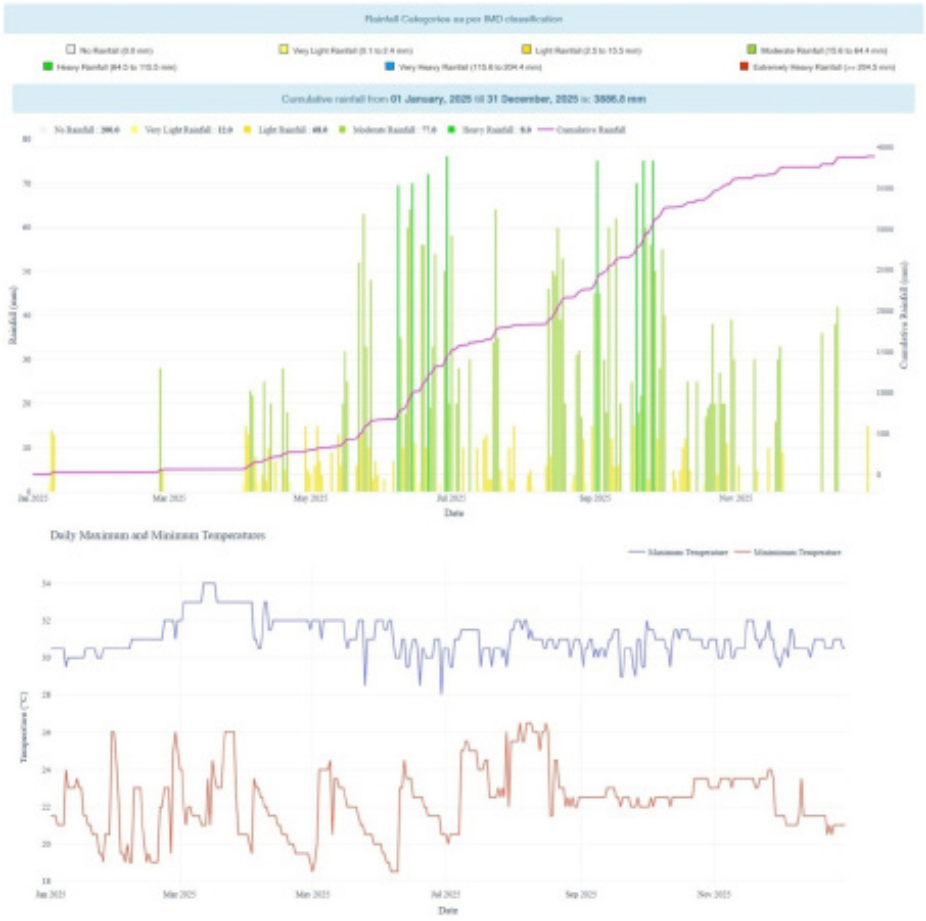
20. Overview of Weather Conditions at Sri Vijaya Puram, Andaman & Nicobar Islands

The observations from the agro-meteorological observatory of the ICAR–Central Island Agricultural Research Institute (ICAR-CIARI), Sri Vijaya Puram, recorded during 2025 (01 January to 31 December) amounted the total rainfall of 3886.8 mm, occurring across 153 rainy days (rainfall ≥ 2.5 mm day^{-1}). The rainfall occurrences were categorized into 12 days of very light rainfall, 68 days of light rainfall, 77 days of moderate rainfall and 08 days of heavy rainfall, with 200 days classified as dry. The maximum monthly rainfall of 805.4 mm was observed in September, while March registered negligible rainfall.

The mean annual maximum temperature for the year was 31.1°C, whereas the mean annual minimum temperature was 22.3°C, yielding a mean annual temperature of 26.7°C. The highest mean monthly maximum temperature occurred in March (32.1°C), and the lowest mean monthly minimum temperature was recorded in February (21.6°C).

Themean annual relative humidity (RH) during 2025 was 77.72%, indicating persistently humid atmospheric conditions over Sri Vijaya Puram. The maximum RH reached 98%in the month of September, while the minimum RH declined to 45% (March), reflecting peak atmospheric moisture during the monsoon season and comparatively drier conditions in the pre-monsoon period.

The climatic conditions during2025 were marked byuniform monsoonal rainfalldistribution**,** **a**substantial number of moderate to heavy rainfall events,and stable thermal conditions**,** representative of thehumid tropical climateof the Andaman & Nicobar Islands**.** The annual variations in rainfall and temperature are depicted in the corresponding figures**.**



CIARI IN NEWS

Since 1920s the Oldest Daily...
The Daily Telegrams
...the Largest Circulating Daily of the Islands
Sri Vijaya Puram, Thursday, January 23, 2025 Web: dt.andaman.gov.in

Parliamentary Standing Committee on Agriculture, Animal Husbandry & Food Processing visits ICAR-CIARI as part of study tour

Sri Vijaya Puram, Jan. 22 The Parliamentary Standing Committee on Agriculture, Animal Husbandry & Food Processing visited ICAR-CIARI, Sri Vijaya Puram from January 19 to 21, 2025, as part of a study tour to review the ICAR-Central Island Agricultural Research Institute, Sri Vijaya Puram. The visit also included a performance review of the 'National Mission on Agricultural Extension and Technology'.

The meeting was held under the chairmanship of Shri Charanjit Singh Channi, Member of Parliament, Lok Sabha, along with 13 other Members of Parliament, namely Shri Ramji Lal Suman, Shri Bhausaheb Rajaram Wakchaure, Dr. Anil Sukhdeorao Bonde, Shri Sudhakar Singh, Smt. Krishna Devi Shivshankar Patel, Smt. Ramilaben Becharbhai Bara, Shri Sukanta Kumar Panigrahi, Shri Banshilal Gurjar, Shri Nitin Laxmanrao Jadhav Patil, Shri P. P. Suneer, Shri Patel Umeshbhai Babubhai, Smt. Anita Nagarsingh Chouhan and Smt. Geniben Nagaji Thakor.

Dr. S.K. Singh, Deputy Director General (Horticultural Sciences) and Dr. V.B. Patel, Assistant Director General (Fruits & Plantation Crops) from ICAR Headquarters, attended the meeting. Officials from the Department of Agriculture & Farmers Welfare, Government of India, including Shri Samuel Praveen Kumar, Joint Secretary (Extension), Dr. Venu (Contd. on last page)

Andaman Chronicle

ICAR-KVK, North & Middle Andaman Celebrates World Fisheries Day 2025

By Denis Giles / November 23, 2025

Billground, Nov. 23: The ICAR Krishi Vigyan Kendra (KVK), North & Middle Andaman, in collaboration with the Department of Fisheries, Fisheries Sub-station, Billground, celebrated World Fisheries Day on 21st November 2025 at the Fish Landing Centre at Betapur. The programme focused on the theme "India's Blue Transformation: Strengthening Value Addition in Seafood Exports. "The programme was inaugurated by Er Manoj Kumar, SMS (Agri. Engg.) ICAR-KVK, North& Middle Andaman district. In his address he stressed the importance of recognising World Fisheries Day as a platform for promoting sustainable fisheries, and commended the fishing community for its indispensable contribution to the nation's food security. Mr. Subam Debroy, SMS (Fisheries Science), emphasized the need for adopting eco-friendly fishing practices to curb the overexploitation of marine ecosystems and maintain ecological balance. He stressed the importance of adhering to appropriate mesh size regulations and observing fishing bans during the monsoon season to give fish the opportunity to breed at least once in their lifetime, ensuring the

अण्डमान निकोबार द्वीप समाचार

संख्या 171 श्री विजय पुरम, मंगलवार, 24 जून 2025 web: www. andam

सीआईएआरआई द्वारा योग संगम के रूप में 11वां अंतर्राष्ट्रीय योग दिवस मनाया गया

श्री विजय पुरम, 23 जून। श्री विजय पुरम स्थित आईसीएआर–केंद्रीय द्वीपीय कृषि अनुसंधान संस्थान (सीआईएआरआई) ने निकोबार तथा नीम्बुदेरा स्थित कृषि विज्ञान केंद्रों के सहयोग से राष्ट्रीय अभियान योग संगम के तहत 21 जून, 2025 को 11वां अंतर्राष्ट्रीय योग दिवस मनाया, जिसका विषय था "एक पृथ्वी, एक स्वास्थ्य के लिए योग" समारोह की शुरुआत माननीय प्रधानमंत्री के विशाखापत्तनम से दिए गए संबोधन के लाइव प्रसारण से हुई, जिसे आईसीएआर–सीआईएआरआई के गेस्ट हाउस कॉमन हॉल में सुबह 6.30 बजे से 7 बजे तक प्रसारित किया गया। इस सत्र में आईसीएआर–सीआईएआरआई के निदेशक डॉ. एकनाथ बी. चाकुरकर, वैज्ञानिक, तकनीकी, प्रशासनिक, कुशल सहायक कर्मचारी और उनके परिवार के सदस्य शामिल हुए। योग सत्र सुबह 7 बजे शुरू हुआ, जिसमें निदेशक ने प्रशिक्षकों श्रीमती वंदना और कुमारी किरूतिका का पुष्प गुच्छ से स्वागत किया। नोडल अधिकारी (योग) और मुख्य प्रशिक्षक श्री श्याम सुंदर राव ने सत्र का नेतृत्व करने से पहले प्रतिभागियों को सुरक्षा निर्देशों की जानकारी दी।

कार्यक्रम में प्रारंभिक प्रार्थना शामिल थी, जिसके बाद आयुष मंत्रालय द्वारा विकसित सामान्य योग प्रोटोकॉल का पालन किया गया। प्रशिक्षकों के मार्गदर्शन में प्रतिभागियों ने सक्रिय रूप से वार्म–अप व्यायाम, योगासन और प्राणायाम किए। प्रोटोकॉल के अनुसार संकल्प और समापन प्रार्थना भी की गई। अपने संबोधन में डॉ. चाकुरकर ने शारीरिक फिटनेस, मानसिक स्पष्टता और भावनात्मक संतुलन को बढ़ावा देने में योग की महत्वपूर्ण भूमिका पर जोर दिया। उन्होंने सभी को स्वस्थ और सामंजस्यपूर्ण जीवन के लिए योग को अपनी दिनचर्या का हिस्सा बनाने के लिए प्रोत्साहित किया। कार्यक्रम का समापन श्री ब्रजेश कुमार द्वारा दिए गए धन्यवाद ज्ञापन के साथ हुआ। सीआईएआरआई से प्राप्त प्रेस विज्ञप्ति में यह जानकारी दी गई है।

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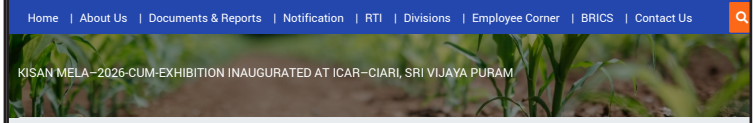

मुख्य पृष्ठ / Kisan Mela–2026-cum-Exhibition Inaugurated At ICAR–CIARI, Sri Vijaya Puram

Kisan Mela–2026-cum-Exhibition Inaugurated at ICAR–CIARI, Sri Vijaya Puram

27 February 2026, Sri Vijaya Puram

The Kisan Mela–2026-cum-Exhibition was inaugurated today at ICAR–Central Island Agricultural Research Institute, Sri Vijaya Puram by Dr A. K. Nayak, Deputy Director General (Natural Resource Management), ICAR.

The inaugural ceremony was attended by distinguished dignitaries including Dr A. Velmurugam, Assistant Director General (SWM) ICAR; Dr B. Augustine Jerard, Project Coordinator (Palms), ICAR-ICAR-Central Plantation Crops Research Institute, Kasaragod; Dr Ja Sunder, Director, ICAR-CIARI; Tribal Chief Shri Lionald Nicomed from CTC, Car Nicobar; and Shri Rakesh B. Pangat, Deputy Genera Manager, NABARD, Sri Vijaya Puram, along with scientists, officials, farmers, farm women, and other stakeholders.

In his inaugural address, Dr A. K. Nayak commended ICAR-CIARI for its substantial contributions in research, development, an nsfer of technologies across agriculture, horticulture, livestock, fisheries, and natural resource management. He described th an Mela as a dedicated platform for farmers, aimed at strengthening knowledge exchange and technology dissemination.

Highlighting the unique ecological wealth of the Andaman and Nicobar Islands characterized by extensive forest cover, abundan water resources, and rich biodiversity he underscored the importance of sustainable resource utilization to enhance farmers' incom and ensure livelihood security. He also noted that the growth of tourism in the Islands has positively influenced the rural economy

ANDAMAN SHEEKHA
True Mirror of Andaman and Nicobar Islands

Mangrove Plantation Drive, at Minicoy, Lakshadweep by ICAR-CIARI, RS-Minicoy

JUNE 9, 2025 BY SANJIB KUMAR ROY — LEAVE A COMMENT

Sri Vijaya Puram, Jun 09: The scientific team of ICAR-CIARI Regional Station, Minicoy in collaboration with ICAR-CMFRI, Field Lab, Kavaratti & ISS (New Delhi) organized mangrove plantation drive on 5th and 6th June, 2025in connection with 'World Environment Day Celebration 2025'. The plantation drive was carried at Eastern side & South Tundi point of Minicoy under the campaign slogan "Putting an End to Plastic Pollution" and aimed at enhancing coastal biodiversity and raising awareness about the importance of mangrove ecosystems. The plantation was done with mangrove varieties like Avicennia (150 nos.), Rhizophora (50 nos.), Bruguiera (200 nos.) (& Kandelia (100 nos.). The plantation drive was conducted in presence of local community leaders, officials from department of forest.

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CIARI impart training on Integrated Farming system to Nicobari farmers

SRI VIJAYA PURAM, MAR 16/--/A twin programme on the Integrated Farming System for Livelihood Improvement of Tribal Farmers and Agro-Advisory Services for Livelihood Improvement of

ICAR-CENTRAL ISLAND AGRICULTURAL RESEARCH INSTITUTE, SRI VIJAYA PURAM, ANDAMAN & NICOBAR ISLANDS-744105