

# ISLAND AGRICULTURE

## ICAR-CIARI NEWSLETTER

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### From Director's Desk ...

I am happy to present the salient achievements and activities conducted during the third quarter of the year 2022.

Our scientists have collected unique accessions ( 47 nos) of horticultural important plants and trees from the Nicobar group of islands and have been conserved and submitted to NBPGR for obtaining IC numbers. Initial results on the use of pandanus leaves as wrapping material showed that it could be successfully used as wrapping material for air layering. Performance evaluation of woody pepper under different growing environments revealed that the shade net house favoured luxuriant growth of the vines compared to naturally ventilated polyhouse and as an intercrop in arecanut .



As a remarkable achievement, our scientists have redescribed a taxonomically cryptic freshwater fish species (*Sicyopterus garra*) from the Andaman Islands. Feedback and impact of the Dweep sale counter showed that among the visitors, 54% appreciated the services of the Institute by giving an excellent grade, followed by 34% very good, 10% good, and 2% visitors need improvement.

A sensitization programme was conducted in collaboration with a-IDEA, Technology Business Incubator (TBI) of ICAR-National Academy of Agricultural Research Management (NAARM), Hyderabad for the students of A & N Islands on Entrepreneurship Development and start-up. Our institute also hosted the Annual Review Meeting of AICRP and mega seed projects on pig. As a part of the infrastructure and new initiatives; laid the foundation stone of the conservation unit of the indigenous goat by Dr. B. N. Tripathi, DDG(AS), ICAR, established pandanus gene bank, Nakshatra garden at Garacharma Farm complex. We also celebrated world coconut day and conducted poshanabhiyan, and Hindi pakhwara at the main campus and Regional Station Lakshadweep.

Our institute has licensed “Protocol for Dweep-Gau Maa Humpsore Rakshak” to Mr. Sainath Shenoy, C/o Mahalasa Agro Products, South Andaman. I congratulate the scientific team for developing the technology. As a part of the extension activities, our scientists are doing continuous training, awareness, field days, demonstration for the farming community of A&N Islands and Lakshadweep Islands.

I thank all the officials of SMD for their support and all the staff members of our institute for their dedication and hard work for the growth and development of our institute.

# Research Highlights

## Plant exploration and collection

*I. Jaisankar and B. Augustine Jerard*

A plant exploration survey was conducted from 04.07.2022 to 16.07.2022 at Nancowrie group of Islands and collected two accessions of *Sandoricum koetjape* (Hinsing), seven accessions of *Pandanus lerum*, five accessions of *Pandanus tectorius*, five accessions of coconut, one accession of *Macaranga nicobarica* seedlings, one accession of *Colocasia* (Mankuchu) and one *Etligera* accession and conserved in the Institute field gene bank. Twenty-two accessions viz., nineteen pandanus, one *Diospyros pyrrocarpa* one *Macaranga nicobarica*, and one *Sandoricum koetjape* passport data along with the conservation certificate was submitted to the ICAR-NBPGR for obtaining IC numbers. Horticulturally important crop wild relatives collected from Andaman and Nicobar which were conserved at NBPGR, Regional Station, Trissur have been allotted for the IC numbers (140 accessions) from ICAR-NBPGR on 28.07.2022. Each accession of *Champereia manillana*, *Hibiscus acetosella*, *Zingiber parishii*, *Abelmoschus caillei*, and *Hibiscus sabdariffa* passport data was prepared and submitted to the ICAR-NBPGR, New Delhi for obtaining IC numbers

## Alternate to airlayering wrapping material

*I. Jaisankar and B. Augustine Jerard*



*Plate: 1 Air layered guava with different wrapping material*

An experiment was conducted on guava air layering with the use of a plastic sheet and pandanus leaf as a wrapping material to evaluate the suitability and potential of the alternative to air layering wrapping material. The experiment was conducted from July

to September 2022. The air layered guava detached from the mother tree and observations on the rooting pattern, root length, and root weights were recorded for the polythene sheet and pandanus leaf wrapped air layered branches. Based on the rooting parameters, it was observed that the mean longest root length (5.43 cm), mean number of roots (16.3), and mean weight of the root (4.68 g) were recorded in the air layering wrapped with the use of polythene sheets while the air layered with the use of pandanus leaf as a wrapping material the mean longest root length (10.75 cm), mean number of roots (27) and mean weight of the root (4.87 g). The results revealed that the pandanus leaves can be used as an alternate for the wrapping material instead of using polythene sheets.

## Identification of superior germplasm of Cinnamon and Tejpat

*Ajit Arun Waman and Pooja Bohra*

To identify superior germplasm of cinnamon from seedling progenies available in the islands, systematic efforts were initiated. In continuation to the morphological and biochemical analysis, essential oil profiling was carried out in 15 collections of cinnamon bark. Results revealed considerable diversity in cinnamaldehyde content, which is the active ingredient of the spice. To carry out further studies, air layering was carried out in the 24 identified progenies of cinnamon and six collections of tejpat. Root induction parameters were recorded in the separated air layers of these collections and layers were subjected to hardening.

## Performance evaluation of woody pepper under different growing environments

*Ajit Arun Waman and Pooja Bohra*

To identify the optimum growing conditions for large-scale cultivation of woody pepper, a study was initiated in which the crop was grown under a shade net house, naturally ventilated polyhouse, and as an intercrop in arecanut. It was observed that cultivation under shadenet house favoured luxuriant growth of the vines when compared with the other two conditions studied. Leaf dimensions were smaller in the case of polyhouse grown crops. However, the incidence of foot rot was identified as a limiting factor in the cultivation of woody pepper under shadenet houses as well as low-lying arecanut plantations, especially after heavy rains. Polyhouse cultivation did not show any incidence of foot rot disease.

### Constituents of essential oil of woody pepper

Essential oil is known to impart peculiar aroma to various spices. In order to identify the constituents of oil of woody pepper stem, essential oil profiling was carried out using GC-MS. Results suggested presence of 22 compounds in the oil with Cinnamyl acetate,  $\beta$ -Caryophyllene and O-Cymene as the major constituents.

### Collection of *Garcinia* germplasm

*Pooja Bohra and Ajit Arun Waman*

*Garcinia* is an important genus distributed naturally in the islands. To explore the possibility of cultivation of commercially important species of this genus, in a pioneering attempt, seeds of *Garcinia indica* were collected from Goa and about 550 seedlings have been raised. Also, the germplasm of *G. andamanica* was collected from Little Andaman Island, and seeds were sown for raising the seedlings.

### Redescribed a taxonomically cryptic freshwater fish species from the Andaman Islands

A team of scientists led by Dr. R. Kiruba-Sankar, and Dr. K. Saravanan has redescribed a new species *Sicyopterus garra* from the Andaman Islands. The species was first described in late 1925 by an eminent ichthyologist Dr. Sundar Lal Hora from the type locality Brichgunj. Due to the taxonomically cryptic nature, the species was merged with *Sicyopterus microcephalus*, a species known from South-East Asia. For more than 90 years, the name *Sicyopterus garra* remained invalid and was not used by researchers. The study was conducted in collaboration with the French Museum, Paris, Zoological Survey of India, Kolkata and Thackeray Wildlife foundation, Mumbai investigated live specimens with DNA studies and confirmed *Sicyopterus garra* from the Andaman to be unique and endemic to these Islands. This discovery is remarkable, as this is the third endemic freshwater fish species to be described from the Andaman



Plate 2: *Sicyopterus garra*

Islands. The study was published in the Journal of Fish Biology (Wiley- Blackwell), a reputed journal from The Fisheries Society of the British Isles.

### Fisheries information hub for Nicobari tribes of Car Nicobar

*R Kiruba Sankar, D Karunakaran, K Saravanan, Sirisha Adamala, J Praveenraj and Y Ramakrishna*

Under the project, socio-economic data were collected from 120 tribal fishermen of Car Nicobar through personal interviews with an interview schedule. Fishermen from Sawai, Big Lapathy, Chukchuka, Mus, Tamaloo, Kinyuka, Tapoiming, Arong, Perka, Kakana, and Malacca were interviewed, and data related to their socioeconomic conditions, and fishing practices were collected. Data on awareness and perception of marine species from tribal fishermen were also collected and compiled for further analysis (N=130). For the establishment of a Coastal Fisheries Information Hub an MoU was signed between Shri. Lionald Nicomed, Chairman, Tribal Council, Car Nicobar, and The Director, ICAR-CIARI on 30-07-2022 at Car Nicobar under the DST funded project.

### An analysis of the visitor's feedback on Dweep Sale Counter

*S.K. Zamir Ahmed, R. Jaya Kumaravaran & D. Karunakaran*

A Feedback Form in Hindi and English was introduced in the Month of July, 2022 to document the impressions of farmers, aspiring entrepreneurs, students, dignitaries *etc.* visiting the Institute for the purpose of meeting, training, field day, exposure visit, advisory, mela, inputs, education *etc.*

- 95 people (71% male and 29% female) from 45 different locations visited the Institute. Among them, 32% people were from private sector 27% Government servants, 17% each from farmer and business category; and 7% students.
- 42 % people visited the Institute to purchase various farm produce.
- 26% of people visited to learn the treatment practices of humpsore disease in cattle, reproduction and production performance in cattle, quail farming, and fancy guppy fish rearing and to know about different varieties of rice with scientific cultivation.
- 9% of people visited to know about the activities of the Institute, to find out the prices of arecanut and coconut seedlings, to gain knowledge about its biodiversity with special reference to medicinal

plants.

- 14% of people visited to learn how to increase milk production in cattle, scientific farm management practices and method to grow black pepper and cherries.
- 5% of people visited the Scientists of the Institute to know about the procedures of forming FPOs through NABARD, and to understand the R & D activities of the Institute.
- 4% of people visited to get mentorship regarding entrepreneurship, and to undergo internship programme.
- Among the visitors 54% appreciated the services of the Institute by giving Excellent grade, followed by 34% Very Good, 10% good and 2% visitors Needs improvement.

### On Farm Trials/Testing

- In the existing coconut garden of 5.2 ha at Regional station, Minicoy the following field activities was conducted to evaluate the performance for translating to farmer's field.
- KAU varieties - salad cucumber in (20 m<sup>2</sup>), bridge gourd (60 m<sup>2</sup>), CIARI varieties- Brinjal- IIHR variety (130 m<sup>2</sup>), Green gram and Black gram (260 m<sup>2</sup>), Pumpkin (260 m<sup>2</sup>), cinnamon (10 nos.), black pepper (30 nos.) Panniyur and Karimunda were introduced at farm for its popularization in islands.
- Field trials on ornamentals namely 5 traits of gladiolus, 66 varieties of coleus and 10 varieties of Chinese balsam is taken in area of 65m<sup>2</sup>.
- Field trials on performance of local varieties of pointed gourd in an area of 130 m<sup>2</sup> brinjal (335 m<sup>2</sup>), banana (260 m<sup>2</sup>) and sweet potato (75 m<sup>2</sup>) was carried out.
- Field trials with turmeric & ginger (25 m<sup>2</sup>), are carried out.
- Field trials of two local varieties of chili in an area of 650 m<sup>2</sup>, tapioca (130 m<sup>2</sup>), cow pea (20 m<sup>2</sup>) was carried out.
- Fodder variety Co5 is maintained at farm in 250 m<sup>2</sup> area.
- Malabar tamarind plants (2 Nos.) and dragon fruit (5 Nos.) were introduced to our farm for first time in islands.
- Exotic fruit plants-rumbutan (5 Nos) N-18, mangos teen (2 Nos)-K100 were introduced for first time in islands.
- 5 plants of grafted nutmeg were introduced at farm

for performance.

- Pickling mango varieties(12 nos.) and jack fruit (15 nos.) were planted at farm.

## Success Stories/Case Report

### Income generation through vermicomposting (Smt. Purnima Choudhary)

*(Team : Pooja Kapoor, Y Ramakrishna, B.K nanda, N. Bommayasamy & Zachariah Geoge)*

Nimbudera village, Middle Andaman helped her husband in all agricultural and allied activities. She always wished to support her family in better way and showed keen interest to learn the technique of vermicomposting. She underwent training at KVK, Nimbudera and established vermi-compost unit. Scientific advisory and other inputs like portable vermi bed, earthworms etc were provided from KVK as demonstration. After adopting the technology and taking vermicompost as a venture she has not only secured her livelihood but also set an example for coming generation as well as for farmers' and farm women of the area. She earns an income of Rs.8000 per month by selling vermicompost and vermin wash. Keeping in view of her devotion and contributions to the field of Agriculture and its allied sectors, the ICAR-CIARI, Port Blair felicitated her on 45th foundation day.



Plate 3: Smt. Purnima Choudhary

### Brown manuring in maize : A multiple beneficial approach (Mr. Gopal Bairagi)

*(Team : N. Bommayasamy, Y. Ramakrishna, B.K Nanda, Zachariah George & Pooja Kapoor)*

Mr Gopal Bairagi, a progressive farmer from Guptapara, South Andaman, maintained his family with rice monoculture. The meagre agricultural revenue prompted him to consider growing a post-monsoon crop with limited resources after the rice harvest. Due to weed growth and a lack of organic manures and chemical fertilizers, he could not achieved the desired yield. He contacted ICAR-KVK, Port Blair for getting solution and underwent hands-on training on advanced maize production participated

in demonstrations and exhibitions. KVK provided him technical supports and inputs viz. maize seeds, dhaincha, and herbicide. With the dhaincha cultivation he could able to add 42.3 q of biomass per hectare. By using brown manure, he increased his grain yield by 46.7% and his profit by 100% over his earlier crop. He encouraged the Guptapara farming community to adopt browning manuring and subsequently thirteen farmers adopted it.



*Plate 4: Shri. Gopal Bairagi*

### **Shri Patrick Jeremiah: A Role Model for Nicobarese Tribal Farmers**

*(Team: Zachariah George, Y. Ramakrishna, B.K Nanda, N. Bommayasamy and Pooja Kapoor)*

Shri Patrick Jeremiah belongs to TurhatoTuhet of Tapoiming village, Car Nicobar. He was practicing tuhetfarming till 2015, along with his family of 6 members which was enough to sustain his family. Though a self-motivated hard worker who was keen to take up new initiatives for profitable agriculture, he lacked technical and scientific know-how about agriculture and allied activities. The ICAR-KVK, Nicobar adopted the tribal farmer in the year 2016 and as an outcome of KVK's technological intervention in the adopted field, he started diversified organic vegetable in an area of 1,205 m<sup>2</sup> in 2016. By realizing the profit, he expanded his net sown area to 4,550 m<sup>2</sup> with guidance from the ICAR-KVK-Nicobar. presently he is cultivating 15 types of vegetables viz. pumpkin, bottle gourd, ivy gourd, bitter gourd, snake gourd, ridge gourd, cucumber, brinjal, chillies, bhendi, amaranthus, poi, spinach, radish and lobia and selling the same to local consumers at reasonable price and earning good income. The ICAR-KVK, Nicobar has provided several trainings, demonstration and hand holdings for adopting scientific technological interventions. He was also taken for exposure visits within Car Nicobar as well as to ICAR-CIARI, Port Blair and Mainland Institutes. The ICAR-KVK, Nicobar encouraged the tribal farmer who was new to vegetable cultivation by providing critical inputs viz. seeds, bio-fertilizers, organic pesticides, farm implements, irrigation ponds, piglets, chicks etc.

The ICAR-KVK developed him as a model tribal farmer and begins to using him as resource person to promote vegetable cultivation among Nicobari tribal farmers in Nicobar Islands. There was no practice of selling farm produce for money earlier. Now, through his scientific organic vegetable cultivation and livestock farming, he earns a gross income of Rs.6,16,249/- and net income of Rs. 4,89,249/- per annum apart from his requirement. During PM KisanSammanNidhi programme, Hon'ble Prime Minister Shri. Narendra Modi Ji interacted with him through video conferencing which was broadcasted live on National television on 14th May 2021. His interview was broadcasted by AIR, Port Blair and he won several awards from A & N Administration and ICAR-CIARI, Port Blair. By seeing and believing, eleven tribal farmers have started commercial organic vegetable cultivation in their fallow land. Organic vegetable cultivation adopted by Shri. Patrick had contributed in a small but significant way in supply / availability of organic fresh vegetables locally leading to improvement of his socio-economic status and livelihood security.



*Plate 5: Shri. Patrick Jeremiah*

### **Land based integrated farming system in tsunami affected areas (Shri M. M. Joydhar)**

*(Team: B.K Nanda, Y. Ramakrishna, N. Bommayasamy, Zachariah George and Pooja Kapoor)*

Shri M. M. Joydhar, a progressive farmer from LalPahar, South Andaman alonghas 2.5 ha of land. He was cultivating rainfedkharif rice prior to Tsunami of 2004 December. Most of his agricultural land was inundated by the sea water and therefore became unsuitable for cultivation. During April 2014, the KVK team interacted with Shri M. M. Joydhar and Farm resources map was prepared, out of which 1.5 ha of land was allotted for integrated farming approach considering the topography of the land. Pond was revitalized by weeding by mahua oil cake and later by addition of cow dung. The ducks were introduced to enrich the fertility and aeration of the pond for better growth of the fish. At the coconut plantation intercropping of fruit trees and

pineapple were provided for planting on the pond embankment. He practiced mixed farming system in his field by making broad bed and furrow, ridge and furrow methods and grows aerial vegetables by making machan (Nylon fishing wire) on the furrows. Before the intervention of KVK the farmer used to get annual income of Rs.165000 from his farm and after adopting the technological intervention like land configuration, crop rotation and integration of other enterprise intensive poultry farming fish etc., he is getting annual income of Rs 464435/-.He is recipient of various awards and become role model for integrated farming system in the brackish water inundated areas.



Plate 6: Shri. M M Joydhar

### Video documentation on coconut climbing devices: A game changer in Nicobarese tribal farmers' lives (Team : Ajit Arun Waman and Pooja Bohra)

Due to decreasing availability of farm laborers, adoption of small machineries and tools is desirable to facilitate various farm operations. Climbing a palm is one of those skilled activities, which are prerequisite for carrying out crown cleaning, harvesting and other crop management practices in coconut. To facilitate the coconut growers from Nicobarese tribe, series of demonstrations on use of coconut climbing devices were carried out under the All India Coordinated Research Project on Palms between 2016 and 2022 as capacity building activities. This was followed by distribution of the devices (total of 115 nos.) under the Scheduled Tribe Component of the Institute to tribal beneficiaries in Harminder Bay, Little Andaman. A video documentary was prepared in which experiences and impressions of the Secretary, Tribal Council, Harminder Bay and beneficiaries using climbing devices were recorded.

### Important events held

#### ICAR-CIARI celebrates 76<sup>th</sup> Independence Day

ICAR-Central Island Agricultural Research Institute celebrated 76<sup>th</sup> Independence Day at its main campus, and Regional Station, Minicoy with fervor and

gaiety. The flag hoisting ceremony was attended by approximately 350 Institute staff and family members. The 76<sup>th</sup> Independence Day celebrations started with the hoisting of the National Flag by Dr. Eaknath B. Chakurkar, Director, ICAR-CIARI followed by singing of the National Anthem. In his address, Director highlighted the contributions made by the institute viz. commercialization of Dweep hangreens, Dweep micro, Dweep carp grower feed, Dweep tickure and filing of patent on extraction of seaweed liquid fertilizer (SWLF) and calcium alginate from brown seaweed (*Sargassum wightii*). He also emphasized about the research and academic linkages developed between different universities and new initiatives such as opening of Dweep sale point, augmentation of water resources at Garacharma Farm and revival of Minicoy research activities. He further urged the scientists to work hard towards the best outcome and betterment of the farmer's community. As a part of the Har Gar Tiranga campaign of Govt. of India under Azadi Ka Amrit Mahotsav the National Flag was hoisted at office and staff quarters from 13<sup>th</sup> to 15<sup>th</sup> August 2022. A mega Rally-Walk with the National Flag was conducted at Regional Station, Minicoy on 12<sup>th</sup> August, 2022. The programme was concluded by mass tree plantation drive in which 75 saplings of bamboo were planted in Garacharma campus to mark the celebration of 75<sup>th</sup> Azadi ka Amrit Mahotsav.



Plate 7: 76<sup>th</sup> Independence day celebrated

### Andaman & Nicobar Islands Students Sensitized on Entrepreneurship Development by ICAR-NAARM & CIARI

The a-IDEA, Technology Business Incubator (TBI) of ICAR- National Academy of Agricultural Research Management (NAARM), Hyderabad organized a sensitization programme on "Entrepreneurship

Development and Start-Up Ecosystem” in Agriculture and Allied sectors for the students of Andaman & Nicobar Islands in collaboration with ICAR- Central Island Agricultural Research Institute (CIARI), Port Blair. The programme has also invited participants across multi disciplinary institutions namely Andaman College (ANCOL), Portblair, Andaman Law College, Port Blair, Tagore Government College of Education, Portblair, Jawaharlal Nehru Rajkeeya Mahavidyalaya, Port Blair, Dr. B. R. Ambedkar Institute of Technology (DBRAIT), Port Blair and Pondicherry University, Regional Campus, Port Blair to encourage and motivate the students to take up entrepreneurship as a profession. The awareness training organized as a part to celebrate the “Azadi Ka Amrut Mahotsav” in commemoration of 75 years of India’s Independence with a participation of about 200 students and faculty members of ICAR-NAARM & ICAR-CIARI, Port Blair.

Dr. Ch. Srinivasa Rao, Director, ICAR-NAARM & President, a-IDEA, in his presidential address highlighted the significance of Island ecosystem in general and Andaman & Nicobar in particular. He stressed the participants to explore the various options namely agro-eco tourism, fisheries, large-scale plantation & poultry and meat industry for agri-preneurship. He insisted the younger generation to come up with mind-provoking thoughts to start companies or startups focussing on real-time weather advisories and hybrid solar energy models.

Dr. Eaknath B. Chakurkar, Director, ICAR-CIARI, who was the chief guest of the programme addressed the gathering to make utilize fully the opportunity provided by a-IDEA, ICAR-NAARM in entrepreneurship. He also emphasized that the students that they should start coming up with their own ideas and become good self-sustaining entrepreneurs to help build the nation.

Dr. G. Venkateshwaralu, Joint Director, ICAR-NAARM & Vice President, a-IDEA expressed his views on the proactive steps taken by the Government in supporting the startup India Programme. He discussed about the various schemes of Government in focussing on innovation and entrepreneurship.

Dr. Jai Sunder, Incharge, PME, ICAR-CIARI welcomed the participants and mentioned that the Island region provides ample scope for entrepreneurship due to its rich diversity. Dr. N.A. Vijay Avinashilingam, Principal Scientist, ICAR-NAARM & Additional CEO, a-IDEA highlighted

the need for the development of entrepreneurship and start-up ecosystem in our country. He also explained the process of incubation and the role of a-IDEA in incubating the start-ups in the agri-ecosystem. Dr. Ranjit Kumar, Head Agribusiness Management, ICAR-NAARM emphasized on the skillsets for entrepreneurship. He focussed on the mindset of entrepreneurs and qualities required for establishing a successful enterprise. Mr. Nitish Gaurav, Founder & CEO of Genflow AI shared the challenges he faced and his experiences in turning his idea into a successful start-up.



*Plate 8: Sensitization program on entrepreneurship development*

### **Annual Review Meeting of “AICRP and Megaseed Project on Pig”**

The Annual Review Meeting of “All India Coordinated Research Project on Pig” and “Megaseed Project on Pig” was organized at the ICAR-Central Island Agricultural Research Institute, Port Blair, Andaman & Nicobar Islands from 25 to 26<sup>th</sup> August, 2022.

Dr. Bhupendra Nath Tripathi, Deputy Director General (Animal Science), ICAR highlighted the importance of pig for food and economic security in the country, especially among weaker sections of the society. The DDG stressed on the need for research directed towards development of location specific technologies for research driven of piggery in the country. Dr. Tripathi also emphasized on characterization and conservation of indigenous pig germplasm. During the programme, Dr. V.K.Saxena, Assistant Director General (AP&B), ICAR highlighted application of genomic technologies for identification and breeding of superior germplasm.. Dr. V. K.Gupta, Director, ICAR-NRC on Pig & Project Coordinator presented Coordinator’s report for the year 2021-22 and suggested the centres to work towards supporting farmers for dissemination of

technologies for economic upliftment and livelihood security. Dr. E. B. Chakurkar, Director, ICAR-CIARI highlighted the role of importance of native pig germplasm of the A&N Islands and contribution of ICAR-CIARI, Port Blair for nutritional security and entrepreneurship development. During the occasion, Dr. B. N. Tripathi, laid the foundation stone for construction of a conservation unit for native goat germplasm in presence of ADG (AP&B), Director, ICAR-NRCP and Director-CIARI, Port Blair. The delegates visited institute farm and research facilities. The meeting was attended by Principal Investigators of 21 cooperating centres spread across the country, Scientists of ICAR-NRC on Pig, Assam and ICAR-CIARI, Port Blair.



Plate 10: World Coconut Day

background of research on Pandanus at ICAR-CIARI. Dr. B.A. Jerard, Head, Division of Horticulture & Forestry elaborated the global scenario, historical importance of Pandanus trees in the livelihood of aboriginal tribes of Andaman & Nicobar Islands who used the starch-rich fruits as food, leaves as sailcloth, mats and ropes. Dr. Gladston Y., Convener, Dr. Ajina S. M., Shri Shareefuddeen Hassan, Senior Technical Assistant, Shri. Arif. M.I Senior Technician, Co-Conveners and the Nodal Officer, Lakshadweep, Dr. S.K Zamir Ahmed coordinated the overall conduct of programme.

### World Coconut Day celebrated by Regional Station at Minicoy, Lakshadweep

World Coconut Day under the theme “Growing coconut for a better future and life was celebrated by Regional Station, ICAR - CIARI at Minicoy, Lakshadweep” on 2<sup>nd</sup> September 2022 with participation of staff, farmers, representatives of SHG, representative of department and villages at its Regional campus. Speaking on the inaugural occasion, the Chief Guest Dr. Shrikant R. Tapdiya, the Deputy Collector, Minicoy and guest of honour Mr. Hassan Koya, Executive Officer, Village Dweep Panchayat, Minicoy, expressed their happiness on the celebration of the day by displaying coconut accessions, value added products from coconut and nursery development activities of station. The team of ICAR-CIARI, Regional Station, Minicoy made an exhibition on 15 coconut germplasm. Beside, the traditional thirteen value added products made from coconuts were displayed during the occasion. The neera collection box was also demonstrated to the farmers. As a token to mark the day five coconut seedlings were distributed to the rural youth farming



Plate 11: World Coconut Day at RS, Minicoy



Plate 9: Annual Review Meeting of AICRP on pig

### ICAR-CIARI establishes Pandanus Gene Bank on the eve of World Coconut Day 2022

ICAR-Central Island Agricultural Research Institute, Port Blair established a Pandanus Gene Bank at its Garacharma Research Farm today under the project funded by National Medicinal Plants Board, New Delhi, to conserve, evaluate and utilize different species of the Pandanus collected from different parts of Andaman and Nicobar. A total of 175 seedlings of various species viz. *Pandanus lamarum*, *Pandanus tectorius*, *Pandanus odorifer* and *Pandanus amaryllifolius* were planted in 2.0 acre of terraced land at ICAR-CIARI campus.

As part of World Coconut Day 2022 celebrations, thirty seedlings of five released coconut varieties of CIARI viz. Dweep Haritha, Dweep Sona, CIARI Chandan, CIARI Surya and CIARI Annapurna were also planted in the field gene bank. Dr. E.B. Chakurkar, Director, ICAR-CIARI presided over the the planting ceremony. Dr. I. Jaisankar, Senior Scientist & coordinator of the programme briefed the

community of Minicoy. A total of 65 farmers, 12 staff and 4 officials participated the program. Dr. Gladston Y., Convener, Dr. Ajina S. M., Shri Shareefuddeen Hassan, Senior Technical Assistant, Shri. Arif. M.I Senior Technician, Co-Conveners and the Nodal Officer, Lakshadweep, Dr. S.K Zamir Ahmed coordinated the overall conduct of programme.

## हिंदी पखवाड़ा का आयोजन

हिंदी पखवाड़ा का आयोजन दिनांक 14 सितम्बर से 28 सितम्बर 2022 तक भा.कृ.अनु.प.-केन्द्रीय द्वीपीय कृषि अनुसन्धान संस्थान, पोर्ट ब्लेयर द्वारा किया गया, जिसके अंतर्गत तत्काल भाषण, निबंधलेखन, पत्रलेखन, टिप्पणआलेखन, प्रश्नोत्तरी एवम शब्दावली प्रतियोगिताओं का आयोजन किया गया था | हिंदी पखवाड़ा का समापन समारोह 28.09.2022 किया गया | इस अवसर पर मुख्य अथिति डॉ. व्यासमणि त्रिपाठी, आचार्य एवं विभागाध्यक्ष, जे. एन. आर. एम, पोर्ट ब्लेयर ने “राष्ट्रीय एकता में हिंदी का योगदान” विषय पर बहुत ही सुन्दर एवं अत्युत्साही व्याख्यान दिया | मुख्य अथिति ने भाषा का आदान- प्रदान एवं प्रचार-प्रसार में साधुसंतो, राजामहाराजों एवं तीर्थस्थलों का बहुत बड़ा योगदान बताया | देश में इतनी विविधता होते हुए भी हिंदी भाषा पूरे देश को एकजुट बनाये रखता है | निदेशक महोदय ने सभी कर्मचारियों को निर्देश दिए की अपना कामकाज हिंदी में करें, और अनुरोध किया की निष्ठा एवं लगन से पूरे वर्ष हिंदी के प्रयोग को आगे बढ़ाएं | निदेशक महोदय ने वैज्ञानिकगण को निर्देश दिया कि अपनी अनुसंधान उपलब्धियों को हिंदी में प्रस्तुत करें ताकि किसानों को समझने में आसानी होगी | मुख्य अथिति ने सभी विजेताओं को पुरस्कृत किया और सभी प्रतिभागियों को भाग लेने के लिए बधाई दी |



Plate 12: हिंदी पखवाड़ा का आयोजन

## Poshan Abhiyan and Tree Plantation

ICAR-Krishi Vigyan Kendra, South Andaman, organized a National campaign on Poshan Abhiyan and tree plantation with great zeal & enthusiasm by inviting farmers, farm women and public representatives. The objective of the programme was to raise awareness about healthy eating habits especially among women and children. Dr. Eaknath B. Chakurkar, Director CIARI, graced the occasion as Chief Guest. Speaking on the occasion

he highlighted about the role of Nutri-Cereals in improving the health of the family and also motivated rural women to prepare nutritious home-made food for the children and requested mothers to replace junk food with traditional foods. He also inspected and appreciated the items displayed in different categories of competitions viz. traditional recipe, millet based recipes and handicrafts. Speaking on the occasion Dr. Y. Ramakrishna, Pr. Scientist & Head, KVK briefed about the activities of KVK and also emphasized about eating locally grown food. A total of 90 farmers, farmwomen and others were benefitted from the programme.

## Human Resource Development

- Dr. K. Saravanan and Dr. J. Praveenraj attended the Virtual Partners Meet and Sensitization on Phase II of the National Surveillance program for Aquatic Animal Diseases (NSPAAD) project conducted by ICAR-National Bureau of Fish Genetic Resources, Lucknow on 14<sup>th</sup> August, 2022.

## Awards/ Honours

- Dr. K. Saravanan and team received the Appreciation Certificate from the Chairman, Tribal Council, Car Nicobar for imparting capacity building programs and distribution of fishing inputs for the benefit of Tribal Fishers of Car Nicobar on 01-08-2022.
- Dr. Ajit Arun Waman received Certificate of Appreciation for significant contribution as Peer Reviewer from Biodiversities Journal of Biological Diversity, Indonesia.
- Dr. Pooja Bohra served as a reviewer for the journals- Acta Physiologia Plantarum (Springer Nature) and Food Chemistry (Elsevier)
- Dr. Ajit Arun Waman served as a reviewer for the journals- Journal of Essential Oil Bearing Plants (Talyor and Francis) and Proceedings of the National Academy of Sciences-India, Section B: Biological Sciences (Springer Nature).

## Trainings/ Meetings/ Interaction conducted

### Training cum Demonstration on Scientific Goat Farming for Enhancing Productivity and Income Generation

Division of Animal Science, ICAR-Central Inland Agricultural Research Institute, Port Blair, conducted a training cum demonstration on “Scientific Goat Farming For Enhancing Productivity and Income Generation from 6<sup>th</sup>-8<sup>th</sup>, July 2022 at Ranchi Basti,

Maymyo village. A total of 30 farmers, including 27 women farmers, attended the program. During the training program, farmers were given knowledge on scientific goat farming, treatment and control of diseases with particular reference to control of parasitic infestation, breeding management and multiplier flock concept, management of kids and pregnant does, feed and fodder requirements, and hands on training on usage of FAMACHA chart for detection of anemia and control of the parasitic infestation.



*Plate 13: demonstration on scientific goat farming*

### **Workshop cum Training on Mini Feed Mill Operation**

Division of Animal Science, ICAR-Central Island Agricultural Research Institute conducted three days' workshop cum training on Mini Feed Mill Operation in collaboration with NABARD from 12-14, July 2022 at Livestock Farm Complex, Garacharma, ICAR-CIARI. A total of 12 farmers including 6 women farmers attended the programme. During the training programme, farmers were imparted training on scientific feeding for poultry, scientific quail farming, identification of feed ingredients and exposure to concept of community based mini feed mill to prepare balanced feed for livestock and poultry. In addition to poultry, disease management of goats, Control of parasitic infestation in goats, scientific breeding and multiplier flock concept, management of kids and pregnant does, feed and fodder management and reproductive management in goats and cattle. Farmers expressed their interest to learn advanced practices in livestock farming. The entire programme was coordinated by team of scientists viz., Dr. T.



*Plate 14: Training on Mini Feed Mill*

Sujatha, Dr. Jai Sunder, Dr. P.A. Bala, Dr. P. Perumal, Dr. A. K. De and Dr. R. R. Alyethodi.

### **CIARI organised Workshop on Entrepreneurship on Fancy Guppy fish culture**

A one day workshop cum awareness programme on “Entrepreneurship on Fancy Guppy fish culture: Status, Scope, Challenges, Opportunities and Marketing strategies in A & N Islands” was organised on 22<sup>nd</sup> July 2022 by Institute Technology Management Unit and Fisheries Science Division, ICAR-CIARI. A total of 25 participants including SHGs, small scale business persons and NGOs participated in the programme. Dr. E. B. Chakurkar, Director, ICAR-CIARI narrated about the commercialisation of technologies and importance of fancy Guppy fish. Dr. Jai Sunder, Pr. Scientist & I/c PME Cell detailed about the commercializable technologies and other consultancy services available by the institute. Dr. T. Sujatha, Sr. Scientist & I/c ITMU informed business potential of the fancy guppy fish culture and asked the participants to proceed for adopting the technology. Subsequently, a brief presentation was given by Shri. J.Praveenaj, Scientist about the history of guppy fish, its significance in the aquarium hobby, trade value and its scope and culture aspects in the Andaman Islands. He also covered various other aspects and CIARI intervention in Guppy fish culture in the field of disease management, broodstock development, live feed culture and development of fancy strains



*Plate 15: Workshop cum awareness programme conducted*

### **Three Days Training Programme on Cultivation of Immunity Boosting Horticultural Species**

A three days long training programme on “Cultivation of Immunity Boosting Horticultural Species” was conducted during August 1 to 3, 2022 at ICAR-Central Island Agricultural Research Institute, Port Blair. The programme was organized under the NABARD funded project on Urban Horticulture. During the event, various theory, practical and demonstration sessions were conducted to make it an interactive one. The programme started with

watering of vitamin C rich West Indian cherry plant to recognize the importance of immunity boosting plants in this era of COVID-19 pandemic. Dr. E. B. Chakurkar, Director, ICAR-CIARI interacted with the participants and guided them on various entrepreneurial opportunities available in agriculture sector. He also encouraged the participants to take up agriculture as a livelihood option. He informed about various initiatives taken by ICAR-CIARI for island youth including the upcoming collaborative online sensitization programme on Entrepreneurship development and Start-up Ecosystem being organized on August 12, 2022. Twenty four trainees including graduate and post-graduate students, homemakers and other island youth expressed satisfaction during the feedback session. Improvement in their knowledge levels on the training theme was evident from the pre- and post- training evaluations.



*Plate17: Workshop conducted*

### **Tribal farmers sensitized about woody pepper cultivation under DBT, New Delhi funded project**

An awareness programme on ‘Woody pepper as a profitable spice for the islands’ was conducted on August 18, 2022 under the Department of Biotechnology, New Delhi funded project being implemented at ICAR-CIARI, Port Blair. During the programme, Dr. Ajit Arun Waman, Principal Investigator and organizer of the event informed the gathering about the significance of cultivation of woody pepper in the islands. Farmers were informed about the package of practices to be followed for its cultivation. Various do’s and don’ts were discussed to make the practices comprehensive to the farmers. Dr. Ajit also explained various means of marketing the produce in tourist locations of the Andaman Islands. To promote cultivation of this spice in the backyards, planting material of woody pepper was distributed to tribal farmers from Harminder Bay, Little Andaman Island. The programme was attended by 25 farmers along with Mr. Andrew Moses, First Headman, Mr. Yoseph, Second Headman and Mr. Festus, Secretary, Tribal Council.



*Plate16: Training programme on cultivation of immunity boosting horticultural species*

### **Workshop on “Protect inner wellbeing, Reduce Stress & Promote Happiness” Conducted by ICAR- CIARI**

Central Island Agricultural Research Institute Employee Welfare Association (CIARIEWA) of ICAR-CIARI, Port Blair in association with Prajapita Brahma Kumaris Ishwariya Vishwa Vidyalaya, Port Blair conducted a “Workshop on Protect inner wellbeing, Reduce Stress and Promote Happiness” at Dr. T.R. Dutta Conference Hall of ICAR-CIARI, Port Blair on 16<sup>th</sup> August 2022. During the workshop, various sessions on protect inner well being, reduce stress and promote happiness alongwith meditation were demonstrated by Sister B. K. Sharmistha, Resource Person from Rajayoga Centre, Brahma Kumaris, Port Blair. In his Chief Guest address, Dr. Eaknath B. Chakurkar, Director, ICAR-CIARI highlighted the significance of meditation for reduction of stress in day to day life to improve the mental health and also appreciated the sincere efforts of Rajayoga Centre, Brahma Kumaris, Port Blair to conduct the workshop with great enthusiasm for the benefit of the employees of ICAR-CIARI.



*Plate18: Tribal farmers sensitized about woody pepper*

### **Three Days Training Programme organized under CSS-MIDH Project**

To create awareness about these techniques through demonstration and hands on experience, a three days training programme on ‘Scientific Cultivation and Postharvest Handling of Spices under Island Conditions for Better Profits’ was organized by ICAR-CIARI, Port Blair under CSS-MIDH (NHM) project on Spices from August 29<sup>th</sup> to 31<sup>st</sup>, 2022.

During the inaugural programme, Dr. Eaknath B. Chakurkar, Director, ICAR-CIARI and Chief Guest of the programme interacted with the participants and expressed his happiness over the diversity of participants who had gathered for a common cause of enriching their knowledge about spices, despite variations in their profession, age group, gender *etc.* He encouraged the participants to take up diverse enterprises related to spices for generating livelihood opportunities in the islands. Participants were selected based on the response received for open invitation to the stakeholders and twenty-five participants were trained under this programme.

whereas ten units were provided to the tribal council for common use among the tribal farmers of the village. A total of 100 tribal farmers attended the demonstration and distribution programme.



*Plate 20: Demonstration and distribution of coconut climbing devices*

### **Demonstration and distribution programme on Coconut Dehuskers**

In order to facilitate postharvest handling of coconut, the mainstay crop of the Nicobarese, dehuskers were distributed on August 18, 2022 to eighty tribal farmers including 16 female and 64 male farmers from fifteen tuhets of Harmindar Bay, Little Andaman. The programme was organized by Dr. Pooja Bohra, Scientist, in the presence of Mr. Andrew Moses, First Headman, Mr. Festus, Secretary, Tribal Council and Mr. Yoseph, Second Headman. The officials of community appreciated the timely provision of much sought after inputs by ICAR-CIARI.



*Plate 21: Demonstration and distribution of coconut de husker*

### **Training on Cultivation of Fruits for Tribal Women**

Fruits have been considered as vital sources of nutrients and antioxidants for human health. To educate the Nicobarese women about consumption and cultivation of fruits, a training programme was conducted on August 19, 2022 in the premises of Community Hall at Harmindar Bay. Representatives of tribal women from fifteen tuhets were selected for the programme. During the programme, Dr. Pooja Bohra, Scientist, ICAR-CIARI and organizer of the programme, sensitized them about the role of nutrients and various fruit sources in maintaining health. Cultivation practices for raising various perennial



*Plate 19: Training programme on 'Scientific Cultivation and Postharvest Handling of Spices'*

### **Demonstration and distribution programme on Coconut Climbing Devices**

Coconut has been one of the prime commodities in the life of Nicobarese community of our islands. In order to reduce the drudgery involved in coconut harvesting and promote scientific coconut farming among the tribal farmers, a demonstration programme on 'coconut climbing devices' was conducted on August 17, 2022 at Harmindar Bay, Little Andaman in collaboration with AICRP on Palms project.

Mr. Gopal Chandra Mandal, Tehsildar, Little Andaman Island was the Chief Guest of the programme. He appreciated the efforts taken by the institute in educating and empowering the tribal farmers and interacted with the demonstrating youth about their experience. Mr. Andrew Moses, First Headman, Mr. Yoseph, Second Headman and Mr. Festus, Secretary, Tribal Council lauded the initiatives taken by ICAR-CIARI in promoting scientific agriculture among the Nicobarese tribal farmers. Dr. Ajit Arun Waman, Scientist, ICAR-CIARI and organizer of the programme interacted with tribal farmers and officials of tribal council about the utility of this device for them to get their feedback about this intervention. Under the Schedule Tribe Component (STC) of the ICAR-CIARI, 40 climbing devices with safety belts were distributed among the tribal farmers. Of these, 30 units were provided to the individual beneficiaries,



*Plate 22: Input distribution at Harminday Bay*



*Plate 23: Capacity building on agricultural technologies*

fruit crops were taught to them. In order to provide practical exposure, planting of fruit saplings was also undertaken in the premise by involving the attendees of the event. The women farmers showed keen interest in planting activity and discussed various issues in backyard cultivation. Two hundred and fifty saplings of lime, passion fruit and bilimbi were distributed to the participants in the presence of Mr. Andrew Moses, First Headman, Mr. Yoseph, Second Headman and Mr. Festus, Secretary, Tribal Council. A total of 35 participants attended the event.

### **Capacity building on Agricultural Technologies at Perka village, Car Nicobar**

As a part of a series of capacity-building programme under Scheduled Tribe Component, ICAR-CIARI in collaboration with KVK Nicobar and ICAR-IIWBR, Karnal conducted a capacity-building programme on 22nd Sep 2022 at Perka village, Car Nicobar. Mr. Paul David (First Headman) and the Chief Guest expressed their gratitude to ICAR-CIARI and KVK for conducting such type of capacity-building programs for the overall benefit and development of their community. Dr. Satyavir Singh, Principal Scientist, and Dr. Anil Khippal, Principal Scientist from ICAR-IIWBR, Karnal stressed the importance of barley and millets and advised the farmers to adopt the technologies. Mr. T. Joy, Agriculture Officer of the Department of Agriculture highlighted the need of adopting mixed farming, use of Jeevan Amrit, making of vermicompost, and utilization of vegetable seed kits for the kitchen garden. Dr. Y. Ramakrishna, Principal Scientist, and Head spoke on the role of KVK and possible technological intervention with the scientific support of his team in coconut crop and value addition for better remuneration. Dr. S.K. Zamir Ahmed, Principal Scientist impressed upon taking up Nutritious kitchen gardening with vegetable seeds in the top verandah of the shelter with seedlings of vegetable seeds in grow bags, and pots so that the fruits can be utilized for family consumption. The

team exhorted the farming community of Perka village to start a small Nutritious kitchen garden either by a single farmer or within a group to set an example for others to follow. The farmers also interacted with the scientific team and got their doubts cleared. A set of vegetable seeds comprising HYV of Bhendi, Amaranthus, and cowpea were distributed. A total of 55 farmers attended the programme. The programme was coordinated by Dr. S. K. Zamir Ahmed, Dr. Y. Rama Krishna & Dr. Jayakumara Varadan under the supervision of Dr. E.B. Chakurkar Director ICAR-CIARI, Port Blair.

### **“Sensitization on responsible fisheries and Input Distribution”**

A sensitization programme on “Sensitization on responsible fisheries and Input Distribution” for the welfare of tribal fishermen of Minicoy was conducted from 25<sup>th</sup> to 29<sup>th</sup> July 2022. The Chief Guest, Dr Shrikant R. Tapdiya, Deputy Collector of Minicoy expressed his happiness on the technological intervention in tuna fishing, sustainable fisheries, tuna harvest and post-harvest practices. The Guest of Honour, Mr. Hussain Manikfan, Chairperson, Village Dweep Panchayat, Minicoy expressed his happiness regarding ongoing activities and new initiatives of ICAR-CIARI, Regional Station, Minicoy. He also expressed his views on tuna fisheries, masmin production, and fish aggregating device for enhancing the livelihood of tribal fishermen. At the end he distributed the inputs to fishermen, which was



*Plate 24: Tribal fishermen sensitized on responsible fisheries and Input distribution*

attended by the officials of Department of Fisheries Shri. Mansoor Ali and fishermen from different cluster of villages. A total of 500 seasoned bamboo pole were distributed to 55 Tuna Lanchi of Minicoy. 61 people participated. Mrs. Ajina S.M, Convener and Co-Conveners Dr. Gladston Y., Coordinator Shri Shareefuddeen Hassan & Shri Arif M.I., Dr. S.K. Zamir Ahmed, Nodal Officer, Lakshadweep coordinated the overall programme.

## Awareness Programme

### Awareness Programme on Growing Coconut for a Better Future and Life

World coconut day is celebrated every year on September 2, 2022 to emphasize the significance of coconut in the livelihood and economic security of the farmers across the globe. The theme identified for the year 2022 was Growing Coconut for a Better Future and Life. To mark this occasion, an awareness programme was conducted at the Government Senior Secondary School, Port Mout under the All India Coordinated Research Project on Palms project being implemented at ICAR-Central Island Agricultural Research Institute, Port Blair.

Dr. Ajit Arun Waman, Scientist ICAR-CIARI and organizer of the programme, gave a presentation on the topic in which he showcased the diversity of coconut available in the islands, various improved practices and varieties developed by ICAR-CIARI and other institutes in the country for enhancing the productivity of coconut. He further elaborated on the island ecosystem and role of coconut in it. Various edible and non-edible value added products prepared from nuts as well as other parts of the palm were showed to the participants. Students were encouraged to take interest in the coconut based entrepreneurships for supporting the island economy.



*Plate 25: Awareness programme on growing coconut*

During the programme, twenty seven science students with agriculture as vocational subject of the school participated along with school teachers Shri. Shajan Verghese, Ms. Prasanna Kumari and Shri. Utpal Gain. Teachers appreciated the efforts of ICAR-CIARI in

educating the island youth in enabling themselves in developing their own agro-based enterprises thereby promoting local produce as well as talent

### Awareness Programme on “Foot & Mouth Disease”

The Animal Science Division of ICAR-Central Island Agricultural Research Institute, Port Blair in collaboration with the Directorate of AH & VS, A & N Administration organized an awareness programme on “Prevention and control of Foot and Mouth Disease in livestock” on 16<sup>th</sup> September 2022 at Community hall of Sippighat Panchayat. The program was coordinated by Dr. Jai Sunder, Pr Scientist, and attended by Dr. Baljit Kaur, Sr Veterinary officer, DAHVS, Dr. P.A. Bala, Sr Scientist, Dr. A.K. De, Sr Scientist & Shri. Mohammed Abdul Abid, Panchayat Secretary. Altogether 36 dairy farmers participated in the awareness program. On the occasion mineral mixture, fodder cuttings, and fodder seeds were also distributed to the farmers.

Dr. Jai Sunder, explained in detail the causes, symptoms, treatment, and control measures of FMD in livestock. He stressed the importance of such an awareness programme that will curb the prevalence of FMD on this island. He also replied to several queries raised by the farmers regarding the treatment and control of the disease. He stated that with the effective vaccination programme and routine monitoring and surveillance, the disease has been effectively controlled since the last outbreak occurred in 2018. He requested all the farmers to cooperate with the vaccination programme for the control and eradication of the disease from this island. Dr. Baljit Kaur, Sr. Veterinary Officer, DAHVS highlighted the significance of vaccination programmes and informed us that the next round of vaccination will commence very shortly. She urged all the farmersto come forward and cooperate with the vaccination programme. Shri. Mohammed Abdul Abid, Panchayat Secretary appreciated the effort of ICAR-CIARI & DAHVS for the initiatives and requested to conduct such type



*Plate 26: Awareness programme on “Foot & Mouth Disease”*

of programme in the future also for the welfare and progress of the farming community. He assured us that farmers are very much interested in the dairy activity and will take active participation in the joint effort for the successful implementation of the FMD control programme.

### **Awareness cum Training on Agricultural Technologies at Tampoiming village, Car Nicobar conducted**

ICAR-Central Island Agricultural Research Institute, Port Blair, KVK Nicobar along with ICAR- Indian Institute of Wheat & Barley Research, Karnal conducted one day programme on 21<sup>st</sup> Sep 2022 at Tampoiming village, Car Nicobar under Scheduled Tribe Component. Speaking on the occasion the Chief Guest, Mr. Simon William (2<sup>nd</sup> Headman) appreciated the efforts of the ICAR Institutes in conducting such fruitful programme benefitting the tribal farmers of the Nicobar area and further requested for imparting many more programmes in the agriculture and allied field. Shri Kishore (4<sup>th</sup> Headman) & Guest of honour exhorted the participant to take the maximum benefits from visiting scientific teams of ICAR. During the technical section Dr Satyavir Singh, Principal Scientist and Dr. Anil Khippal, Principal Scientist, ICAR-IIWBR, Karnal highlighted on the importance of the barley and millets in the daily diets. Dr Y. Ramakrishna, Principal Scientist and Head, KVK spoke on the possible technological intervention with scientific support of his team with an objective to enhance the crop productivity and income of the farmers. He also requested the Chief Guest to select the interested farmers in small groups for an exposure visit to Port Blair to learn scientific farming at ICAR-CIARI, KVK and progressive farmer's fields. Dr S.K. Zamir Ahmed, Principal Scientist impressed upon the idea of propagating agro-ecotourism, the flagship programme of the institute which will sustain the biodiversity of area and also provide additional income to the youths. A set of vegetable seeds comprising high yielding variety of bhendi, amaranthus and cow pea were distributed. A total of 76 farmers (including 33 male and 43 female) attended the programme. The scientific team also visited different technological intervention plots of KVK at farmers field with pheromone traps in cucurbits, bhendi A5, CIARI-Brinjal 1 & 2, amaranthus Pusa red, Palak Pusa. All green at Big Lapathy, Chukchuka, Tapoiming, and Tamaloo. Farmers expressed their happiness on the performance of the varieties and offered suggestions

for its up scaling. The programme was coordinated by Dr S.K.Zamir Ahmed, Dr. Y. Rama Krishna and Dr. Jayakumaravaradan under the plan & guidance of Dr E.B. Chakurkar Director ICAR-CIARI, Port Blair.



*Plate 27: Awareness cum training program on agricultural technologies*

### **Parthenium awareness week & sensitization**

Regional Station Minicoy organised Parthenium awareness week & sensitization on its integrated management” for the school students and tribal farmers of Minicoy from 16<sup>th</sup> to 22<sup>nd</sup> Aug, 2022. Chief Guest Mr. Ibrahim Manikfan L.G., District Panchayat Representative, Lakshadweep Islands expressed his happiness on new initiative of ICAR-CIARI Regional Station, Minicoy. He also expressed his views on parthenium harmful effects to human and other animals and its impact on soil productivity and biodiversity. On Station demonstration was also carried out on composting of parthenium in participatory mode. The students and teachers were exposed to farm and other technologies of ICAR-CIARI, RS Minicoy. A total of 25 students and 4 teachers participated in the program. The scientific team visited Bada, Aoumagu, Boduathiri, New Boduathiri, Rammedu, Sadivalu, Aloodi, Funhilol, Kudehi, Fallessery & Kendiparty villages and South Bandaram and conducted awareness on harmful effects of parthenium and its management during the period. A total of 35 male and 40 female totaling to 75 participated.



*Plate 28: Awareness week on parthenium week*

### **Vegetable cultivation (Pumpkin) under coconut plantation at RS-Minicoy**

Regional Station, Minicoy of ICAR-CIARI Port

Blair, conducted a “Field Day on Vegetable cultivation (Pumpkin) under coconut plantation” for the tribal farmers of Minicoy on 12<sup>th</sup> August, 2022. Speaking on the inaugural occasion, the Chief Guest Dr. Shrikant R. Tapdiya, the Deputy Collector of Minicoy expressed his happiness on the ICAR-CIARI technologies, scientific pumpkin farming and doubling farmers income through agriculture. A total of 23 participants including farmers and farm women from Fallessery, Bada, and South Bandaram were attended the field day in which they were exposed to a scientific pumpkin cultivation at the institute. The scientific team comprising of Dr. Gladston Y. and Dr. Ajina S. M. interacted with the farmers and impressed upon the package of practices for organic pumpkin cultivation under coconut plantation. The vegetable kits were distributed among the farmers in the presence of officials of Department of Agriculture, Minicoy Unit Shri. Kunjikoya. A total of 19 women and 4 men farmers were participated. Dr. Gladston Y., Convener, Dr. Ajina S. M., Shri Shareefuddeen Hassan, Senior Technical Assistant, Shri. Arif. M.I Senior Technician, Co-Conveners and the Nodal Officer, Lakshadweep, Dr. S.K Zamir Ahmed coordinated the overall conduct of programme.

the package of practices for gladiolus farming under coconut plantation as intercrop. A total of 31 participants from Bouduathiri and South Bandaram villages attended the field day in which they were exposed to gladiolus cultivation under coconut plantation at the institute station. Dr. Gladston Y., Convener, Dr. Ajina S. M., Shri Shareefuddeen Hassan, Senior Technical Assistant, Shri. Arif. M.I Senior Technician, Co-Conveners and the Nodal Officer, Lakshadweep, Dr. S.K Zamir Ahmed coordinated the overall conduct of programme.



*Plate 30: Field Day on “Gladiolus-a high end flower”*



*Plate 29: Field day-vegetable cultivation (pumpkin) under coconut plantation”*

### **Field Day on “Gladiolus-a high end flower under coconut plantation” conducted by RS Mincoy**

Regional Station, Minicoy of ICAR-CIARI Port Blair, conducted a “Field Day on “Gladiolus- a high end flower under coconut plantation for livelihood security of tribal communities in Lakshadweep Islands” on 18<sup>th</sup> August 2022. Speaking on the occasion, the Chief Guest Mr. Hussain Manikfan, Chairperson Village Dweep Panchayat, Minicoy expressed his happiness on the new initiatives, *ie.* flower cultivation, and entrepreneurship development through floriculture for the tribal farmers by ICAR-CIARI, Regional Station. The scientific team comprising of Dr. Ajina S. M and Dr. Gladston Y interacted with the farmers and impressed upon

### **Field day on Improved paddy varieties and its up scaling**

ICAR-Central Island Agricultural Research Institute conducted a “Field day on Improved paddy varieties and its upscaling under AICRP on Seed (crop) project” at Bloomsdale Research Farm of CIARI at Chouldari on 27<sup>th</sup> September, 2022. Dr. Eaknath B. Chakurkar Director, ICAR-CIARI exhorted the farmers to go for proper selection of crop varieties, advocated diversified farming, value addition so that income of the farmers is enhanced in longer run. He was confident that exposure to different technological options in agriculture and allied field which is established at Garacharma Farm will give options for better livelihood. Speaking on the occasion, Guest of Honour, Smti. Taposi Saha, Pradhan Chouldari Panchayat appreciated the efforts of CIARI and requested the farmers to take the maximum benefit of the knowledge and crop varieties developed. Shri. Navashakti, Agriculture Officer & Smti. Chaitali Roy, Panchayat Samiti Member also spoke on this occasion. Dr. P. K. Singh, Principal Scientist, briefed about CIARI Rice varieties, types of seed and advance rice research being carried out at CIARI for rice improvement. Dr. S. K. Zamir Ahmed, Principal Scientist & In-Charge of Social Science of ICAR-CIARI highlighted about the Importance of Rice varieties developed by the Scientific team of CIARI and its benefit extended during the pandemic period through Agriculture Department A & N Administration. Dr. Y. Ramakrishna,

Head, KVK, Sippighat advocated about the importance of micronutrients application in rice. Farmers were exposed to Garacharma Research Complex and in continuation of the feedback obtained during the field day, one training, cum awareness programme on Paddy Cultivation in Rainfed lowland was organised on 28.09.2022. A total of 80 people comprising of 25 Scientists of CIARI, 4 SMS from ICAR-KVK, Sippighat & Nimbudera & 35 farmers from North & Middle Andaman and South Andaman and officials from Department of Agriculture attended the programme.



Plate 32: Field day on “fodder cultivation conducted Successful dissemination of CIARI technology in farmers field

### Scientific pig rearing practices by Mr Jackson of Nicobar

(Team: S.K. Zamir Ahmed, Y. Rama Krishna & . R. Jaya Kumaravaradan)

An enterprising youth Mr. Jackson of Tapoiming village, Car Nicobar has established a Nicobari pig rearing unit after having hands on training under Division of Animal Science which is very much acknowledged. The housing system for Nicobari pig is in nascent stage.



Plate 33: Mr. Jackson of Tapoiming doing scientific pig rearing

### Cultivation of CIARI Brinjal 1, CIARI Brinjal 2 and Bhendi A5

The vegetable seed varieties distributed to Nicobari farmers through National Extension Programme of ICAR-IARI, New Delhi are performing well on the field.



Plate 34: Mr. Mehmood from Chukchuka with Bhendi A5

Plate 35: Mr. Leslie from Tamaloo with CIARI Brinjal 1

The scientific team visited different technological intervention plots at farmers’ field to appraise the performance of Bhendi A5, CIARI Brinjal 1 & 2, Amaranthus Pusa Red, Palak Pusa All green at Big Lapathy, Chukchuka, Tapoiming and Tamaloo



Plate 31: Field day on improved paddy varieties and its upscaling

### Field Day on “Fodder cultivation at Regional Station Minicoy

Regional Station, Minicoy of ICAR-CIARI Port Blair, conducted “Field Day on Fodder cultivation (CO 5) under coconut plantation” for the tribal farmers of Minicoy on 29<sup>th</sup> September 2022. Speaking on the inaugural occasion, the Chief Guest Dr. Shrikant R. Tapdiya, the Deputy Collector of Minicoy expressed his happiness on the technology namely CO 5 fodder cultivation to enhance income of livestock farmer. A total of 12 participants from 5 villages i.e. Rammedu, Funhilol, Boduathiri, Aloodi, and South Bandaram attended the field day in which they were exposed to fodder (CO 5 variety) cultivation under coconut plantation at the institute farm. The scientific team Dr. Gladston Y. and Dr. Ajina S. M. interacted with the farmers and impressed upon the POP for fodder cultivation under coconut plantation, different methods of fodder production and importance of balanced nutrition for livestock. total of 1200 cuttings @ 100 each of Hybrid Napier ( CO 5) were provided to the farmers for growing in their field by the Deputy Collector, Minicoy. Dr . Gladston Y., Convener, Dr. Ajina S. M., Shri Shareefuddeen Hassan, Senior Technical Assistant, Shri. Arif. M.I Senior Technician, Co-Conveners and the Nodal Officer, Lakshadweep, Dr. S.K Zamir Ahmed coordinated the overall conduct of programme.

villages. Farmers expressed their happiness on the performance of the varieties and offered suggestions for their up scaling.



Plate 36: Mr. Jaan Mohammed from Big Lapathy with CIARI Brinjal 2

## Publications

### Research paper

Ajit Arun Waman and Pooja Bohra (2022). Essential oil composition of different plant parts of *Syzygium aromaticum* (L.) Merr. and Perry grown in South Andaman Island, India. *Current Agriculture Research Journal*, 10(2): 55-58.

Adamala, S. and Velmurugan, A. (2022). Sustainable Water Conservation Options for Andaman & Nicobar Islands on Watershed Scale. *Vigyan Varta* 3(7): 46-49.

Muniswamy, K., De, A.K., Bhattacharya, D., Sujatha, T., Perumal, P., Alyethodi, R.R., Sunder, J., Bala, P.A., Kundu, A. & Chakurkar, E.B. (2022). Genetic structure, population diversity and ancestry of Nicobari fowl based on mtDNA complete D-loop sequences. *Journal of Genetics*, doi.org/10.1007/s12041-022-01372-z

Ponraj, P., Sunder, J., De, A.K., Alyethodi, R.R., Mishra, P.C., Bhowmick, S. & Bhattacharya, D. (2022). Season modulates endocrinological profiles and sex behaviour characteristics in indigenous male goats under tropical humid island ecosystem. *Asian Pacific Journal of Reproduction*, 11(4) : 183-192.

Praveenraj, J., Kiruba-Sankar, R., Saravanan, K., Thackeray, T., Singh, P., Knight, J. D. M., and Keith, P., 2022. *Sicyopterus garra* Hora, 1925, a valid species of sicydiine goby from the Andaman Islands, India. *Journal of Fish Biology*.

### Folders

Saravanan, K., Sivaramakrishnan, T., Kiruba-Sankar, R., Praveenraj, J. and Ritika Sarkar., 2022. Dweep-Carp Grower Feed. ICAR-CIARI, Port Blair. Pp.8.

Saravanan, K., Sivaramakrishnan, T., Kiruba-Sankar, R., Praveenraj, J. and Ritika Sarkar., 2022. Feeding Methods in Freshwater Aquaculture. ICAR-CIARI, Port Blair. Pp.8

Subramani T, A. Velmurugan, V. Baskaran, T.P.Swarnam and sirisha Adamala. 2022. Deep vertigrow model for high value vegetables (Folder).

### Popular Article

Ajit Arun Waman and Pooja Bohra (2021), Burmese coriander cultivation using novel pro-tray technique for promoting spices based urban farming in Andaman Islands. *Indian Journal of Arecanut, Spices and Medicinal Plants*, 23(1): 19-20.

## Commercialization of Technology

### ICAR-CIARI licensed “Protocol for Dweep-Gau Maa Humpsore Rakshak”

ICAR-Central Island Agricultural Research Institute, Port Blair signed Memorandum of Understanding on September 22, 2022 for licensing a protocol for *Dweep-Gau Maa Humpsore Rakshak* (treatment protocol for control of humpsore in cattle). Dr. E.B. Chakurkar, Director, ICAR-CIARI transferred the technology to Mr. Sainath Shenoy, C/o Mahalasa Agro Products, South Andaman.

In line with the upcoming strategies for humpsore treatment in livestock, the teams of ICAR-CIARI scientists; Dr. P. Perumal and Dr.A.K.De have developed the protocol to treat Humpsore in cattle and buffaloes. It is proven to treat the humpsore within 30 days of application with success rate of 95.37%. in addition, the milk production of cured animals also improved upto 85.07%.



Plate 37: Commercialization of technology

### Swachh Bharat Abhiyan

- Beach cleaning drive in collaboration with UT of Lakshadweep Administration on World Coastal clean-up day on 17<sup>th</sup> September 2022 was done.

- Beach cleaning program under Swachhata movement on 5<sup>th</sup> October 2022. The scientific, technical and contractual staff of the station actively participated in the drive. The team sensitized the people in the area on good citizen

practices to be followed and to spread the message of clean and green India. Also aim to spread the message to work towards a plastic-free, litter-free and pollution-free towards sustainable environment.

### Schedule Tribe Component

Programme	No	No of beneficiaries
Training	8	236
Demonstration	3	934
Input distribution	1783	275



Plate 38: Glimpses of Training

### Participation in national seminars/ symposia/ conferences/ workshop

Name	Programme	Date/Venue/Organizer
Dr. Pooja Bohra, Scientist and Dr. Ajit Arun Waman, Scientist	Launching programme of City Forest Campaign (Nagar Van) in the Islands and ceremonial planting	Aberdeen Forest, Department of Environment and Forests, A & N Administration on 8 <sup>th</sup> July, 2022
Dr. Ajit Arun Waman	Annual Review Meeting of CSS-NHM project on Spices and Spice Expo-2022	Horticulture College and Research Institute (TNAU), Periyakulam, Tamil Nadu on 13 <sup>th</sup> and 14 <sup>th</sup> July, 2022
Dr. Pooja Bohra	NABARD Project Review Meeting	NABARD Regional Office, Port Blair on 18 <sup>th</sup> July, 2022
Dr. R. Kiruba Sankar, Dr. K. Saravanan and Dr. J. Praveenraj	Webinar on National Campaign on Non-conventional Aquaculture Systems	ICAR-CMFRI, Kochi on 27 <sup>th</sup> July, 2022
Dr. S.K. Zamir Ahmed	Virtual Brain Storming Session on “Researchable Issues in Agriculture Extension”	Department of Extension, TNAU, Coimbatore.on 22 <sup>nd</sup> August, 2022
Dr. Y. Ramakrishna, Pr. Scientist & Head, ICAR-CIARI-KVK	One Day Capacity building training	ICAR-CRIDA, Hyderabad on 22 <sup>nd</sup> and 23 <sup>rd</sup> Aug 2022
Dr. Pooja Bohra	Delivered a lecture entitled “Scientific Management and Propagation of Underutilized Fruit Bearing Species of Andaman and Nicobar Islands” during the Online Refresher Course for Deputy Rangers and Foresters	23 <sup>th</sup> August, 2022, Forest Training Institute, Wimberlygunj

Dr. I. Jaisankar, Senior Scientist (Agroforestry)	lecture on Pest and disease management indigenous plants of Andaman and Nicobar Islands to the refresher course for frontline Staff Forest Training Institute	Department of Environment and Forest, Andaman and Nicobar Administration on 24 <sup>th</sup> August, 2022 (virtual)
Dr. R. Jaya Kumaravaradan	3-day National Training Workshop on “Quantitative Techniques in Assessing the Impacts of Climate Change in Agriculture” as a Resource Person on “Perception studies on climate change impact”.	CARDS, TNAU, Coimbatore from 21 <sup>st</sup> to 23 <sup>rd</sup> September 2022
Dr. Ajit Arun Waman	Annual Group Meeting of the AICRP on Palms	12 <sup>th</sup> -13 <sup>th</sup> September, 2022 at ICAR-CPCRI, Kasaragod
Dr. Ajit Arun Waman as a resource person	Career Guidance Programme for Girl students under Samagra Shiksha Abhiyan	GSSS, Port Mout on 28 <sup>th</sup> September, 2022
Dr. S.K. Zamir Ahmed	“Pitching-cum-open forum discussion on Start-ups” conducted by the Department of Industries, as an Expert.	On 30 <sup>th</sup> September, Department of Industries, A&N Admn.
Dr. I. Jaisankar, Senior Scientist (Agroforestry)	Consultation for India’s position on GB9 agenda meeting of Researchers working with plant genetic resources virtually for 9 <sup>th</sup> GB meeting of ITPGRFA, New Delhi	ICAR, New Delhi.

### Distinguished visitors

- **Dr. Avijit Roy**, Deputy Director (Health), Directorate of Health Services, UT Administration visited Horticultural Plants Propagation Unit and interacted about the spices and native fruit species of the islands (11/08/2022).
- **Dr. Bhupendra Nath Tripathi**, Deputy Director General (Animal Science), Dr. V. K. Saxena, Assistant Director General (AP&B) and Dr. V.K. Gupta, Director, ICAR-NRC on Pig visited Horticultural Plants Propagation Unit for knowing about the native underutilized fruits and spices of the islands.
- **Dr Shrikant R. Tapdiya**, the Deputy Collector visited the on 25/07/2022, 12/08/2022, 02/09/2022 and 29/09/2022 for inaugurating input distribution and training programme on responsible fisheries, field day & World coconut day
- **Mr. Hussain Manikfan**, Chairperson, VDP, Minicoy visited on 25/07/2022 for inaugurating input distribution and sensitization on responsible fisheries.
- **Mr. Mansoor Ali**, unit in-charge, Department of Agriculture on 25/07/2022 for attending sensitization on responsible fisheries.

- **Mr. Kunji Koya**, ADU, Minicoy visited on 12/08/2022 for participating on field day on pumpkin.
- **Mr. Hassan Koya**, Executive officer, VDP Minicoy visited on 02/09/2022 for inaugurating World coconut day celebration.
- **Mr. Ibrahim Manikfan**, District Panchayat Member visited on 20/08/2022 for inaugurating Parthenium awareness week.

### New projects/ initiatives

An area of about 6500 m<sup>2</sup> was cleared, terraces made under the NMPB Pandanus project at ICAR-CIARI Garacharma farm. Planted 30 seedlings each of *Pandanus lerrum*, *P. odorifer* and *P. tectorius* (comprising of six accessions each species with five seedlings per accession) in the two newly formed terraces. One accession each of *P. amaryllifolius* (three plants), *Macaranga nicobarica* (28 seedlings), *Garcinia speciosa* (15 seedlings) and *Sandoricum koetjape* (10 seedlings) collected from Car Nicobar planted in to the newly formed terrace for its conservation. One accession of *Diospyros pyrrocarpa* (10 seedlings) collected from Long Island, coconut dwarf germplasm viz., CARI Annapura (5 seedlings), CARI Surya (6 seedlings),

Andaman Orange Dwarf (6 seedlings), Dweep Sona (6 seedlings) and Dweep Haritha (5 seedlings) were planted on 05.09.2022 in the newly formed terraces for its conservation and further study.

## Infrastructure development

### ICAR-CIARI establishes Nakshatra Garden in its campus

Nakshatra Garden is based on the theme of astrology which includes a variety of plants and trees linked to the zodiac signs and stars. To promote the concept of the agro-eco-tourism and conservation of the environment, ICAR-CIARI has established a Nakshatra Garden at its Garacharma Research Farm today. Dr. I. Jaisankar, Senior Scientist and coordinator of the programme welcomed the Director and Scientists. Dr. E. B. Chakurkar, Director, ICAR-CIARI inaugurated the planting ceremony and briefed about the significance of Nakshatra Garden in human life. He informed that astrologically, Sun and Moon have differential impact on the well being of humans during their transition *via 27 nakshatras/constellations*, and their impact could be modulated or improved by planting a specific tree associated with each nakshatra. Scientifically, nakshatra trees have a substantial amount of secondary metabolites for the prevention and treatment of various human diseases, and release higher oxygen and volatile organic compounds than other species to give positive energy to humans. He expressed that, such sacred groves will add value to agro-ecotourism in the Islands and attract

tourists who look for some unique natural destinations apart from pristine beaches. Later, all the participants planted saplings of the trees associated with 12 Rasi and 27 Nakshatra vatika in a laid out pattern.



Plate 39: ICAR-CIARI establishes nakshatra garden

### Interaction meeting

An interaction meeting was held on 25/07/2022 with the officials of District Administration, Department of Fisheries and officials of CIARI, R.S Minicoy, on Sustainable fisheries for the betterment of the stakeholders of the Lakshadweep islands

### Appointments/ promotion/ transfer/ retirement/ obituary

#### Voluntary Retirement

- Shri. Abdul Majeed, SSS on 30<sup>th</sup> August, 2022

#### Retirement

- Shri. Derrick, Technical Officer on 30<sup>th</sup> September, 2022

#### Transfer

- Dr. K. Venkatesan, Sr. Scientist on 30<sup>th</sup> August, 2022.



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