



# **NORTH EAST CENTRE FOR TECHNOLOGY APPLICATION AND REACH**

(AN AUTONOMOUS BODY UNDER DEPARTMENT OF SCIENCE AND TECHNOLOGY,  
GOVT. OF INDIA)

## **Annual Report 2023-24**



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## FROM THE DIRECTOR GENERAL'S DESK

North East Centre for Technology Application and Reach (NECTAR) has been initiated to originating a new template in Technology Delivery and Reach in almost all remote regions of North East, the fiscal year 2023-24. It has been also highlighted in many places by various state Govt. departments of NER. The preparation and actual functioning of all programmes were carried out in consultations with end users and respective state stake holders to maximise the ultimate focus on increasing the outreach of the NECTAR's primary works on technology disseminations and Skill with Entrepreneurship Training and Students' Internship Programmes for the benefit of the entire NER.

NECTAR has taken up many activities during this financial year through various innovative and game changing technologies for the upgradation of rural livelihood in NER in consultation with state machinery. The organization has made a widespread activity map to increase efficiency in the delivery of the required technological services for the benefit of the NE. During the financial year 2023-2024, NECTAR funded various projects across multiple sectors, with the majority allocated to food processing, agriculture, and skill-based training initiatives. The projects were distributed across eight states in North East. The initiatives directly benefitted 931 individuals and indirectly impacted around 2,550 people. Training programs were conducted for about 1,302 individuals, predominantly from the ST and SC community and Other Backward Classes.

One of the remarkably success projects of NECTAR during the last financial year was the implementation and demonstration of scientific cultivation of Saffron in the Northeast, which yielded promising results especially in the states of Arunachal Pradesh, Sikkim and Meghalaya. The initiative was undertaken in partnership with various implementing agencies from the respective state government departments and NGOs, spanning across about 3 acres of cultivated area and providing direct benefits to about 85 farmers mainly women from the ST community. The harvested saffron was packaged and formally launched under the brand "Ashtalakshmi Kesar".

NECTAR is promoting the installation of standalone solar hybrid dehydrators at various locations in NER for drying of turmeric and ginger among other spices by the local farmers. Till date, 15 Nos of dehydrators with drying capacity 100 kg each, were installed at various locations in Meghalaya, Nagaland and Mizoram which has supplemented the farmers with the production of dried products, while ensuring safety and quality of raw material thus benefitting over 1000 farmers in these three states. Products emerging from these dehydrators so far includes Lakadong turmeric, ginger, jackfruit seeds, chilli, bamboo shoot and gooseberry.

In a significant step towards promoting agriculture, rural livelihood, and community development, two community radio stations have been established in the North East - the Mawkynew 89.60 FM Community Radio in Mawkynew, Meghalaya and Wahong Radio Station in Thoubal, Manipur. Both community radio stations have made a profound impact in their respective regions by providing access to relevant information, promoting social and economic

development, and amplifying the voices of marginalized communities, and benefitting over 100 isolated villages with a population of approximately 35,000 people each especially along the international border areas.

NECTAR's Honey Mission (2023-2024) aims to promote scientific beekeeping in North East India. Building on successful pilot projects in the previous years, NECTAR has supported over 2000 scientific bee colonies across Assam, Arunachal Pradesh, Nagaland, Meghalaya, and Manipur including various capacity-building initiatives and stakeholder meetings to enhance scientific beekeeping practices, increase honey yield, and address challenges faced by beekeepers, with a focus on sustainable beekeeping and high value addition like bee pollen and bee venom etc.

Two projects under PM-DevINE have started in various places as per project objectives and its progress is satisfactory. We are hopeful that 6 plants of 'utilization of banana pseudo stem for value added products' projects at least 4 will be completed by the month of December 2024. Similarly for the other projects i.e., 'promotion of scientific organic farming in the NER', almost 30% has been completed and we are expecting to 60% of the work within the current financial year. The important developments under the scientific organic agriculture project include farmer mobilization and crop selection across 250 identified clusters across NER, launching of the BARC approved soil organic carbon detection kit named "Vasundhara", for mass production. Under the utilization of banana pseudostem project, construction of common facility centres (CFC) across various locations is currently being undertaken including several initiatives aimed at capacity building and technical support especially at the village level. We are expecting both the projects will take a proper shape within this financial year.

NECTAR is also implementing project under Formation and Promotion of 10,000 Farmers' Producer Organizations (FPOs) in NE, in which 21 FPO have been established across 21 blocks within 7 districts of Arunachal Pradesh with about 2500 beneficiaries mostly ST category, covered till date. Additionally, providing handholding technical support to these FPOs through training and capacity-building workshops and also securing credit from financial institutions for their projects and working capital needs.

After a successful pilot project on Improving Sustainability of Traditional Terracotta and Pottery Business in Asharikandi village, Assam, NECTAR had secured additional funding from SEED Division of Department of Science and Technology, GOI. A Craft Mela was organized to promote the local craft, and the project has led to enhanced productivity, economic growth, and improved quality of life for artisans, with their products gaining global demand.

NECTAR has also undertaken various projects leveraging advanced technologies like Remote Sensing, GIS, AI/ML, and drone surveys for diverse applications. These projects include both inhouse and externally funded initiatives and include forest survey and mapping, aerial drone surveys for agriculture, quality assessment of Khasi Mandarin



oranges, and quadrant survey across various locations in Meghalaya; Aerial drone survey for Mahanadi Coalfields mining area in Odisha; Ground control surveys using DGPS technology for urban planning and infrastructure development at Karnataka and Kerala; and Pilot studies for crop yield estimation using advanced technology at 13 districts across India. The projects have achieved significant outcomes, and have benefited a range of stakeholders, viz artisans, farmers, agricultural stakeholders, forest departments, local communities, and industrial entities.

With the full support of entire team members, NECTAR has successfully conducted various training and capacity-building programs in NER focusing on techno-preneurship, bamboo product production, apiculture, integrated farming, geospatial technology, drone manufacturing, and various other skill development courses under the PMKVY 4. The programs have successfully trained over 1,500 individuals, with a focus on hands-on skill development, product manufacturing, and certification. Collaborations with state government departments, agencies, and organizations have been instrumental to ensure the programs' quality and effectiveness.

NECTAR has been actively promoting innovation, entrepreneurship, and sustainable development in North East India through various events, workshops, and extension projects viz., the India-Japan Symposium on nutraceutical interventions, the North East Start Up & Entrepreneurs' Conclave 2024, and several workshops on innovative agricultural practices, disaster response, and language cum multimedia labs. NECTAR also organized events like the Asharikandi Craft Mela, inaugurated an inclusive music school, and participated in the Meghalaya Buckwheat Strategy Dialogue 2024. Additionally, NECTAR has been promoting the adoption of Hindi as an official language through various workshops and events.

Using inhouse resources, NECTAR has conducted a pilot study to map flood-prone areas in Assam's Dhubri and Majuli districts using geospatial technology, aiming to reduce disaster risk and build resilience. The study categorized villages by vulnerability, finding 291 and 168 villages in Dhubri and Majuli, respectively, to be highly vulnerable, and identified changes in wetland boundaries over the past 50 years. The study estimated that 1.36 lakh and 4.18 lakh people in Majuli and Dhubri respectively, are affected by high vulnerability. The findings are to be validated during the next flood season, with the goal of enhancing community resilience, promoting flood-resilient infrastructure, and providing innovative inputs for sustainable flood management.

During FY 2023-24, NECTAR signed agreements with various organizations and institutes to implement initiatives and projects in the North East Region (NER). These include:

- MoUs with ICAR-National Research Centre for Banana; National Institute of Rural Development & Panchayati Raj, Hyderabad; ICAR-National Bureau of Plant Genetic Resources; Ministry of Skills Development and Entrepreneurship; Meghalaya State Rural Livelihoods Society; Meghalaya Farmers Empowerment Commission, Bio-Resources Development Centre Govt of Meghalaya and Institute of Bioresources and

Sustainable Development Imphal; RC Hobbytech and others for implementation of projects like under PM-DevINE scheme Utilisation of Banana pseudostem, and Promoting Scientific Organic Agriculture in North East, PMKVY 4.0, and promoting apiculture, etc.

- Agreements with academic institutions like Amrita Vishwa Vidyapeetham and KIIT University for development, and validation of products, academic collaboration, and technology transfer.

Along with all these NECTAR organized a NE start-up Conclave during 27-28 March 2024 in collaboration with stake holders from Govt. of India and respective state Govt. It was highly appreciated by all stake holders. I am glad to inform you that NECTAR has undertaken many plans for Administrative Expansion in the NER. Under PM-DevINE project, an administrative office has been established in the Guwahati Bio Tech Park of Assam. Around 40 project fellows (from all NE states) have been recruited under the project for monitoring day-to-day activities. The proposal for the NECTAR Permanent Campus at Shillong has already been approved and sanctioned by the Ministry and the construction work has been handed over to CPWD. Request from Govt. of Mizoram, Manipur, Sikkim and Arunachal Pradesh have been received to open a NECTAR's sub office in their states.

In conclusion, I would like to extend my gratitude to the Department of Science and Technology, Government of India for its unstinted support towards realising the Vision and Mission of NECTAR. I also thank the esteemed members of NECTAR's Governing Council, Executive Council, Finance Committee and Project Assessment Committee (PAC) for guiding and critically monitoring the activities of NECTAR and always providing the best possible suggestions. With the support and best wishes from all NE state govt departments and parent ministry NECTAR's activities have increased manifold during last 2-3 years, and I thank all stakeholders for their invaluable support and cooperation. I would also like to extend my sincere gratitude to DoNER Ministry for supporting us two projects under PM-DevINE, Ministry of Animal husbandry, North Eastern Council for their continuous support. A word of appreciation is due to my entire NECTAR team members, who have worked determinedly to keep the spirit of the organization in momentum. I am convinced that with their contribution and genuine participation, NECTAR will continue its journey to unveil new technological frontiers for the overall path breaking development of the NER. With this optimism, I present to you the NECTAR's 2023-24 Annual Report.

Dr. Arun Kumar Sarma  
Director General, NECTAR

## SUMMARY OF ANNUAL REPORT FY 2023-24

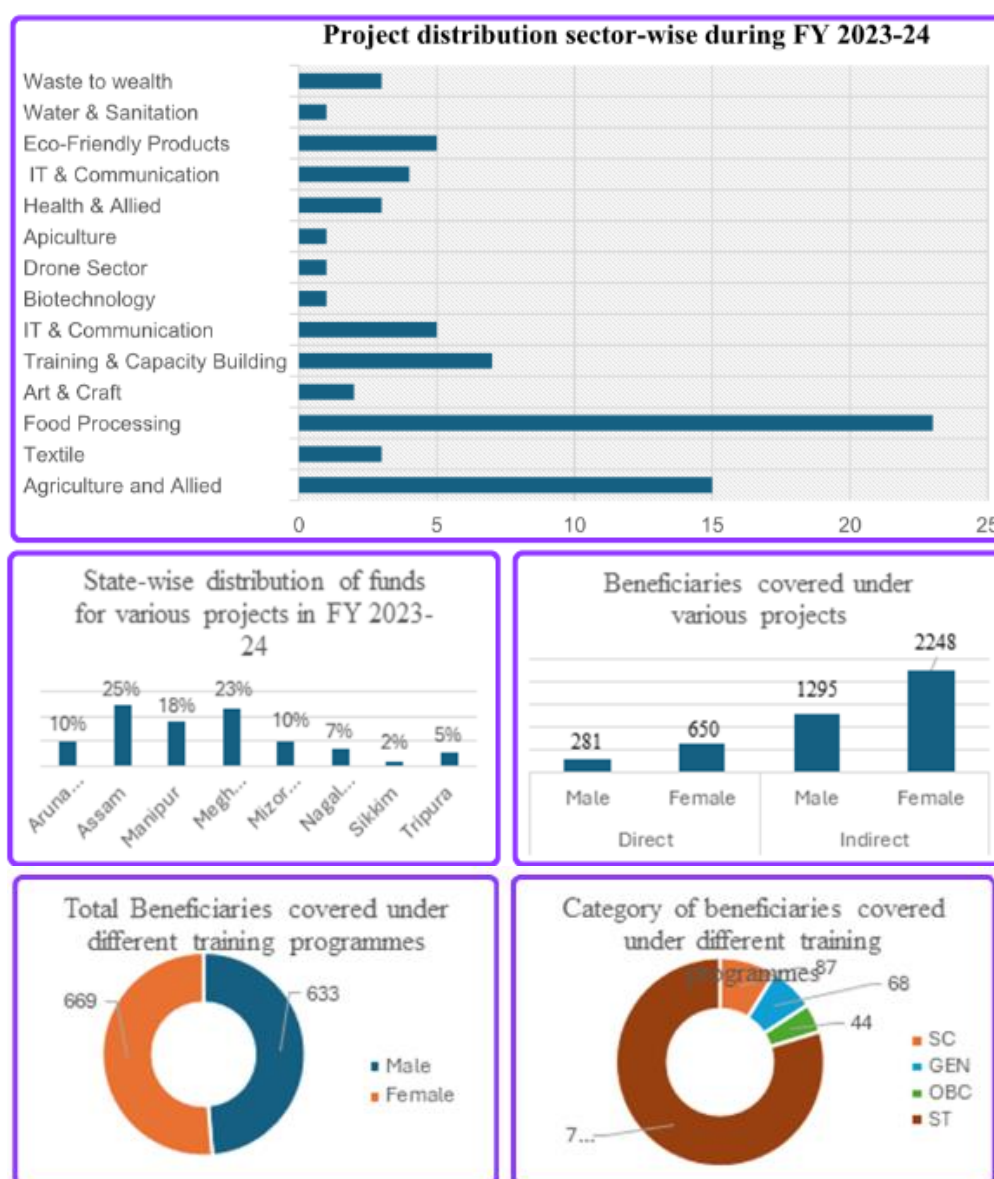
During the financial year 2023-2024, the North East Centre for Technology Application and Reach (NECTAR) spearheaded a myriad of initiatives aimed at promoting various socio-economic development and technological advancement across the North-Eastern Region (NER) through a number of projects, trainings and collaborations with various organizations mainly through its TOSS and BAANS Schemes, inhouse projects and externally funded projects from various schemes and ministries of the Government. The various activities were undertaken and implemented through its technical divisions which included mainly the livelihoods division, communications division and geospatial division respectively.

Noteworthy endeavours included various successful and ongoing execution of various projects such as pilot project on saffron cultivation in NER which yielded positive results especially in the states of Sikkim and Arunachal Pradesh demonstrating the region's suitability for such high-value crops; formation and promotion of 10,000 farmers' producer organizations (FPO) in which a total of 21 FPOs across 21 blocks within 7 districts of Arunachal Pradesh were established for facilitating market linkages and business management for local farmers and the Honey Mission covering states of Assam, Sikkim and Tripura in which extensive training and bee boxes were distributed to about 500 farmers across all the sites. NECTAR also prioritized sustainable practices through the installation of Solar Dehydrators at various locations for drying of turmeric and ginger among other spices by the local farmers and projects under the PM-DeVINE scheme focusing on value addition to agricultural by-products such as banana pseudo stem and also promoting organic farming by leveraging latest developments in agriculture and drone technology, reflecting a holistic approach to agricultural and horticultural development in the region. Furthermore, NECTAR's commitment to innovation and technology adoption was evident through initiatives like development of a Project Management Information System (PMIS) for internal project monitoring, establishment of community radio stations at Meghalaya and Manipur for the dissemination of important content on education, health, environment agriculture, local music etc. to the villages especially near the border areas, mapping of reserve forests in Meghalaya using LiDAR and conducting drone surveys at various other locations as part of the broader mapping exercise.

Majority the projects that were taken up were mainly in the food processing sector and agriculture and allied sectors followed by various other sectors in which about 4474 individuals have been benefitted through various initiatives, trainings and projects, majority of them which include women beneficiaries and ST community. Majority of the projects implemented were in the states of Assam (25%), Meghalaya (23%) and Manipur (18%) respectively. To achieve its objectives and vision, NECTAR has also been working in close coordination with various departments of all State Governments of NER for successful implementation of various initiatives. In addition, NECTAR has also

entered a number of collaborations with various institutions such as North Eastern Council (NEC), Ministry of Development of North East Region (MDONER) , Ministry of Electronics and Information Technology (MEITY), Indian Council of Agricultural Research (ICAR), Indian Institute of Management (IIM) Shillong, Indian Institute of Technology (IIT) Guwahati, etc as part of its broader agenda of technology implementation for livelihoods generation in the region.

The following summarizes the various activities undertaken by NECTAR during FY 2023-24



## CHAPTER 1 BRIEF ABOUT NECTAR

The North East Centre for Technology Application and Reach (NECTAR) was established as an autonomous institution in Shillong, Meghalaya, under the Department of Science and Technology, Ministry of Science and Technology, Government of India. The creation of NECTAR was approved by the Cabinet Committee on Economic Affairs on June 7, 2012, and it was officially registered under the Societies Registration Act of 1860 on November 30, 2012. Following a Cabinet decision, two previous technology missions, the National Mission on Bamboo Application (NMBA) initiated in 2004, and the Mission for Geospatial Applications (MGA) started in 2009, were merged into NECTAR, along with their assets and liabilities, beginning January 1, 2014.

NECTAR aims to be a premier institution for promoting, nurturing, and ensuring the application of technology for public and social benefit. Its mission is to expand the reach and advantages of technology to individuals, communities, institutions, and governments, fostering equitable and inclusive socio-economic development in the North Eastern Region of India. The Centre will leverage advanced technologies from central scientific departments and institutions to support regional development.

NECTAR will focus on applying suitable technologies in areas such as agriculture, food processing, water sanitation, biodiversity, watershed management, telemedicine, horticulture, infrastructure planning and development, and education via tele-schooling with cutting-edge technological solutions. The Centre's goal is to generate employment and contribute to the overall development of the North Eastern Region.

The headquarter of NECTAR is currently located at Shillong and has been functioning from a leased building of the Survey of India, Shillong, with two operational field offices at Guwahati. NECTAR also operates in Agartala, Tripura, managing the Bamboo & Cane Development Institute (BCDI). While the majority of NECTAR's staff work on various projects throughout the Northeastern Region, a small number of administrative and technical staff operate from the Delhi office located in Viswarkma Bhawan on the IIT-Delhi campus. A permanent NECTAR campus is planned for New Shillong Town Area, on a 5-acre site allocated by the Government of Meghalaya, which is currently in the construction planning stage with the assistance of a Project Management Consultant.





Fig: Vision and mission objectives of NECTAR

## NECTAR COMITTEES FY 2023-2024

### Governing Council (GC) of NECTAR

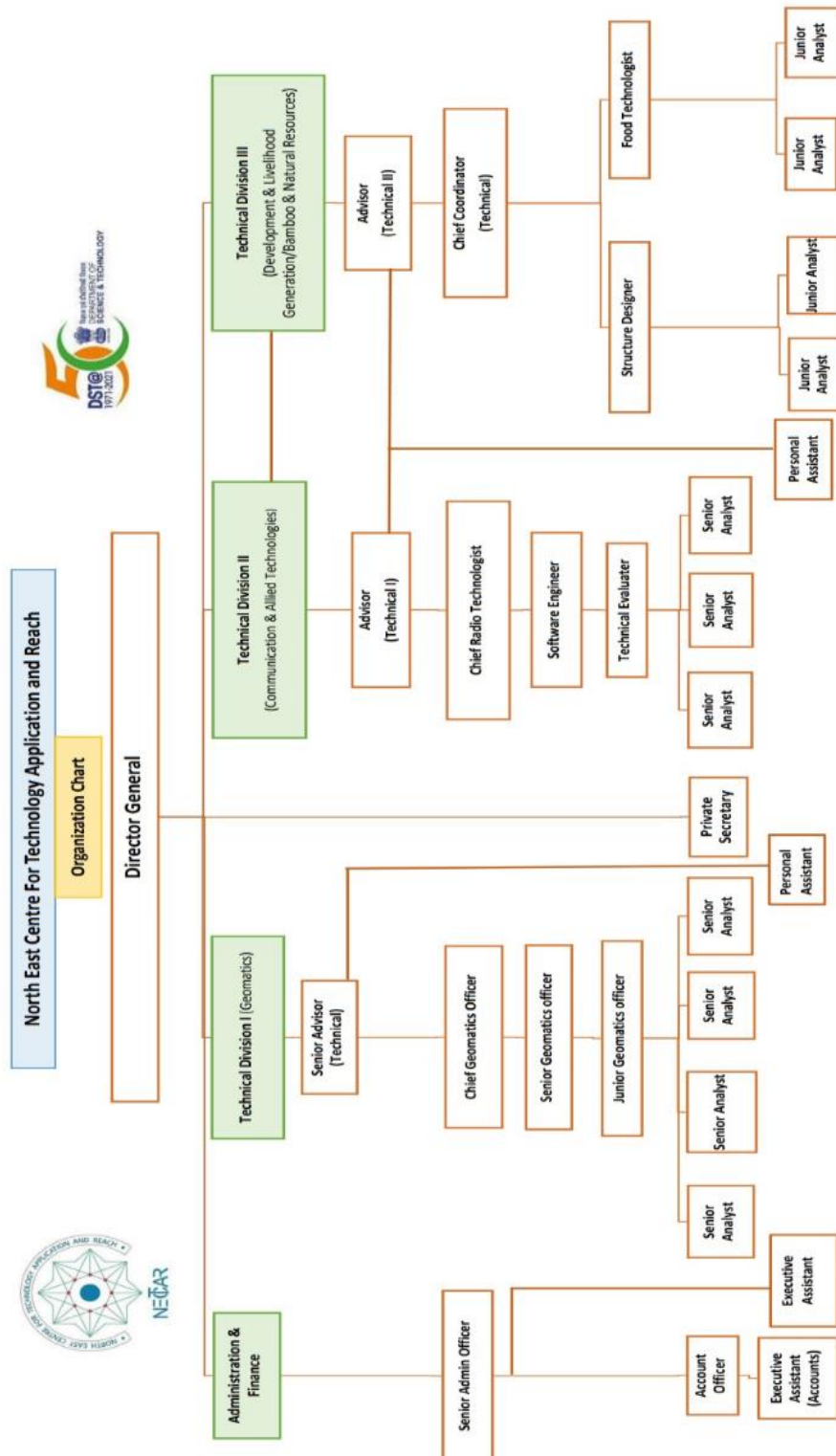
1.	Secretary, Department of Science and Technology, GOI	Chairman
2.	Chief Secretary, Govt. of Arunachal Pradesh	Member
3.	Chief Secretary, Govt. of Assam	Member
4.	Chief Secretary, Gov.t of Manipur	Member
5.	Chief Secretary, Govt. of Meghalaya	Member
6.	Chief Secretary, Govt. Mizoram	Member
7.	Chief Secretary, Govt. of Nagaland	Member
8.	Chief Secretary, Govt. of Sikkim	Member
9.	Chief Secretary, Govt. of Tripura	Member
10.	Secretary, North Eastern Council (NEC)	Member
11	Director General, NECTAR	Member Secretary

### Executive Council (EC) of NECTAR

1	Director General, NECTAR	Chairman
2	Economic Adviser, NEC	Member (Representative of North Eastern Council)
3	Chief Scientific Officer, Directorate of Science and Technology, Govt. of Mizoram	Member (Representative of North Eastern States)

### Finance Committee (FC) of NECTAR

1	Director General, NECTAR	Chairman
2	Financial Adviser, DST, Govt of India	Member
3	Economic Adviser, NEC	Member
4	Chief Scientific Officer, Directorate of Science and Technology, Govt. of Mizoram	Member
5	Advisor(Technical), NECTAR	Member
6	Sr. Administrative Officer, NECTAR	Member Secretary



## CHAPTER 2 NECTAR SUCCESS STORIES

1. **Project Name: Establishment of Community Radio Station (CRS) to promote Agriculture, Rural Livelihood and Community Development at Mawkynrew, Meghalaya and Thoubal, Manipur**

**Implementing Agency: NECTAR and Centre for Rural Empowerment & Development organization (CREDO)**

**Implementing Site: Mawkynrew Village, Meghalaya and Thoubal, Manipur**

### Objectives:

In a significant step towards promoting agriculture, rural livelihood, and community development, two community radio stations have been established in the NE through NECTAR's initiative. The Mawkynrew 89.60 FM Community Radio in Mawkynrew, Meghalaya and Wahong Radio Station in Thoubal, Manipur are revolutionizing the way information is disseminated and consumed in these regions. Both community radio stations have made a profound impact in their respective regions. By providing access to information, promoting social and economic development, and amplifying the voices of marginalized communities, they have empowered rural populations and fostered a sense of community and belonging. The stations have also created a platform for local talent, showcasing the rich cultural heritage of the regions.



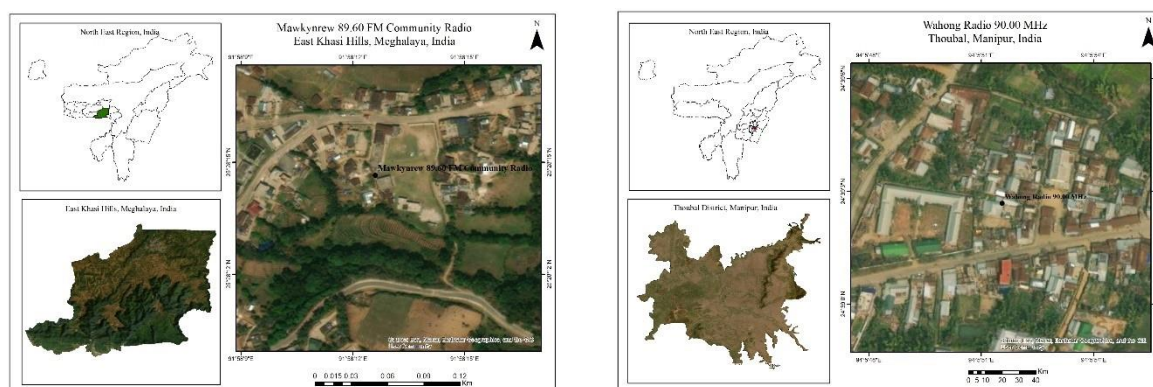


The Mawkynew Community Radio operating at 89.60 MHz, is a pioneering initiative in Meghalaya. As the first community radio station in the state, it aims to promote agriculture, rural livelihood, and community development, benefiting over 100 isolated villages with a population of approximately 35,000 people. The station's programming focuses on critical issues such as education, health, environment, agriculture, local folk, art, culture, traditional knowledge, rural and community development. It will also encourage the voice of the disadvantaged group by broadcasting programs related to problems and limitations, issues etc, promote the cultural perspectives and interests of the minority groups and also popularize the tradition of Indigenous rural peoples with improved social participation and improved education and knowledge of self-employment.

The project was formally inaugurated on, the 15<sup>th</sup> of March 2024 by Shri. Banteidor Lyngdoh, MLA-29, Mawkynew; in the august presence of dignitaries, officials from NECTAR and the villagers. This Community Radio Station is like a normal FM radio station, which can be tuned to 89.6 MHz on FM band from your radio or mobile device and listen to informative programs on education, health, environment agriculture, local music etc. The project is a unique initiative of the Communication Division of NECTAR, under the visionary leadership and guidance of Dr Arun Kumar Sarma, Director General of NECTAR. This CRS project is entirely funded by NECTAR amounting to Ra. 60 lakhs and will be operated by the Village Dorbar Jongksha, which will help in promoting Agriculture, Rural Livelihood & Community Development benefitting more than 100 isolated villages with a population of approximately 35,000 people under Mawkynew block and adjacent rural areas. The project's objective of rural empowerment, social and economic development.



On the other hand, the Wahong Radio Station, operating at 90.00 MHz, nestled in the heart of Shikhong Bazar, Nongpok Sekmai, Dist. Thoubal, Manipur stands as a beacon of community spirit and resilience. Despite its modest beginnings, the station has flourished into a vital hub for agriculture experts, local news, cultural exchange, and grassroots activism. One remarkable aspect of WAHONG Radio's success is the unwavering support it receives from villagers and listeners. Moved by the station's dedication to amplifying their voices and preserving the heritage, villagers frequently flock to Radio station, not just as listeners, but as active contributors. They donate generously, both morally and in kind, recognizing the station's pivotal role in fostering unity and empowerment within the community.



*Fig: Location map of CRS at Meghalaya and Manipur respectively*

The success of these community radio stations is a testament to the power of community-driven media. They have demonstrated that with dedication and support, community radio can be a potent tool for social upliftment and rural empowerment. As community radio continues to grow and expand, it is likely to play an increasingly important role in promoting development and social change the region, bridging the gap between urban and rural communities and fostering a more inclusive and equitable society.

## 2. Project Name: Foundation Course in Computers and Employability for the visually Impaired

Implementing Agency: Bethany Society, Shillong

Implementing Site: East Khasi Hills, Meghalaya

Objectives:

- Providing professional training courses for securing employability skill sets, to gain employment in IT and other prime departments.
- Skill Set Training focusing on different job Modules.

- Hands-on experience in specific job profiles based on trainees' skill set "BE THE CHANGE! ENGAGE WITH TECHNOLOGY AND GAIN COMPETENCY!"

#### **Deliverables and outcomes:**

- Before embarking on this course, each of the trainees faced numerous challenges, recounting instances of societal exclusion due to their visual impairment.
- However, they have now taken the crucial step to make a difference and integrate themselves into society. Their journey, encapsulated by the phrase "Abhimaan - I am able," was shared with the audience during the event.
- Throughout their training the trainees have undergone the orientation and intensive training as part of the Foundation Course in Computers and Employability. Their remarkable journey reflects their unwavering commitment and determination. They now possess proficiency in fundamental computer operations and have become adept at using Microsoft Office applications such as Word, Excel, Outlook, and PowerPoint.
- The utilization of screen reading software, namely JAWS and NVDA, has empowered them to independently navigate digital interfaces. Their language skills, both spoken and written, have witnessed notable improvements, enhancing their ability to engage in effective communication.
- Additionally, life skills training has equipped them with essential competencies for personal and professional success.
- In practical settings, trainees embark on field visits to institutions like public parks, markets, banks and shopping malls, gaining practical insights into the application of computer skills in different environments.
- Work shadowing interaction with government officials, companies and NGOs had gained experiences, dynamics and tasks, further building their confidence. Their journey has been marked by resilience, determination, and notable progress.
- They stand ready to enter the workforce with enhanced skills and confidence, showcasing their ability to overcome unique challenges and succeed in a variety of roles. Bethany Society and the Enable India team are proud to support and empower these individuals, working towards a more inclusive future

**Direct/Indirect Beneficiaries:** 15 visually impaired trainees (10 Male and 5 Female belonging to ST) successfully completed the course with a bit of brush up of the 4 trainees who joined the course at the latter state.



*Fig: Distribution of Course Completion Certificates*

### 3. Project Name: Setting up of Language Cum Multimedia Lab

**Implementing Agency:** Pynursla Presbyterian Secondary School, Pynursla

**Implementing Site:** Pynursla, East Khasi Hills District, Meghalaya

**Objectives:** The Project “Language cum Multimedia Lab” aims at enhancing education through interactive whiteboards, digital content and online collaboration tools, innovative communication software which may promote dynamic teaching methods, real-time feedback, and personalized learning experiences, fostering student engagement and comprehension. This lab is equipped with modern computing machines, power backup with internet facilities.

#### **Deliverables and outcomes:**

- This innovative project has been implemented successfully aiming at bridging the gap between the students in rural areas and availability of modern technologies.
- This Lab was inaugurated by Sh. Prestone Tynsong, Deputy Chief Minister, Meghalaya in presence of officials from NECTAR.
- School has started incorporating course part of this lab into its curriculum

**Direct/Indirect Beneficiaries:** Around 110 students from the school will benefit from this lab. Further this lab will also be used to train the youth in the region





*Fig: Language cum Multimedia Lab*

#### 4. Project Name: Establishment of spice and aromatic distillation unit

**Implementing Agency:** Meghalaya Integrated Mountain Development Initiative (MIMDI)

**Implementing Site:** Meghalaya, Ri Bhoi

#### **Objectives:**

- Create Livelihood and sustainable livelihood practices
- Technology interventions in areas of Spice and MAP species
- Promote resilient livelihood opportunities through technical support to village level entrepreneurs
- To reduce dependency on and transform shifting agriculture/ wasteland into a cash crop farming through high value medicinal and aromatic plants.
- Popularization of potential Spice and MAPs based on the agro-climatic suitability
- Contribute towards the doubling farmers' income and strengthening marketing networks for assured buybacks
- Employment of women, unemployed youth to create new avenues of economic activity

**Direct/Indirect Beneficiaries:** Total 48 individuals (19 male and 27 female) from both SC and ST category respectively were directly benefitted while 140 females from ST category were indirectly benefitted.





**5. Project Name: Manufacturing of compostable bioplastic bag from cassava starch (Manihot esculenta)**

**Implementing Agency: M/s Ecostarch, Nagaland**

**Implementing Site: Mokokchung, Nagaland**

**Objectives:**

The demand for bioplastics has been increasing since the past decade due to growing environmental concerns, awareness, stringent regulations by various government and agencies. In India, bioplastics market is in an infant stage and only a handful of companies like Envigreen, Ecolife, Plastobags, Earthsoul India and Truegreen are currently operating in the bioplastic segment in India. Most of these companies produce 1000-5000 tons of bioplastics every year while the country's annual consumption is 9 million tonnes (CPCB). This deficit is causing a serious disruption in the demand vs supply equation.



## Deliverables and Outcomes

- The unit has started production of these bioplastic bags which have a carrying capacity ranging from 1-5 Kg.
- The current production capacity of the unit is about 3 tons per month.
- In terms of market opportunity, there is a monthly demand of 6 tons of grocery bags and 4 tons of oyster mushroom spawn growing bags across Nagaland.
- While this figure is just for Nagaland, the demand from other neighbouring states has also been received with up to 10 tons requirements per month.

**Direct/Indirect Beneficiaries:** Initial employment has been given to 6 people (3 male and 3 female) belonging to ST category to work at the unit, expected employment of 10-15 nos on daily basis, mobilized 250 cassava farmers who have started the cassava plantation and are mostly the small holders from 10 villages.

**6. Project Name: Development of Kombucha: An unexplored future health drink for India from food industry wastes and agricultural wastes and demonstration at pilot scale**

**Implementing Agency:** M/s Praras Biosciences Pvt Ltd

**Implementing Site:** Assam, Jorhat



*Fig: Jackfruit Kombucha*

### Objectives:

- Utilization of industrial byproducts (Soya molasses/ whey) or agricultural byproducts (pineapple, jackfruit wastes) as substrate for making Kombucha, a health drink at bench scale.
- The specific objectives of this bench scale study would involve
- Selection/ screening of cultures for kombucha which can optimally utilize the agricultural wastes to make kombucha.
- Selection/ screening of industrial waste materials to be used as substrate for kombucha preparation.
- Optimizing fermentation conditions for kombucha preparation at the laboratory level.
- Standardization of methods of analysis of intermediates and end products
- Verification and validation of raw material and cultures under optimized conditions at Pilot scale fermentation and economic/ viability of the process including product cost, comparison with internationality available brands, verification of the health claims, flavoured kombucha options
- Demonstration and trials of the prototype including marketing and demonstrations

### Deliverables and Outcomes

- Achieved the milestones of optimization of culture, raw material and growth parameters; validation and safety studies; promotional activities,
- Product was launched at the Brews & Spirits Expo, Bengaluru on 13th September 2023.
- The nutritional analysis showed that the products – Jackfruit and Pineapple kombucha have good content of nutrients.

**Direct/Indirect Beneficiaries:** Total 40 women individuals belonging to ST category were benefitted through the initiative.

### 7. Project Name: Pilot Project on Economic Development of Rural Farmers in Nagaland through Shiitake Mushroom Cultivation.

**Implementing Agency:** Rural Agricultural Farming Research Association (RAFRA), Nagaland

**Implementing Site:** Kohima and Zunheboto District, Nagaland

### Deliverables and Outcomes

Through the project, 20 women farmers belonging to the ST community have been benefitted through RAFRA's intervention with NECTAR support. The beneficiaries were successfully given training on the various aspects of shiitake mushroom cultivation along with starter mushroom kits and about 4000 wood logs in total which were

distributed so that they could take up shiitake mushroom cultivation in their individual spaces. The cultivated shiitake mushrooms were sold in the open markets in fresh and processed forms through drying, thus being able to command higher margins and providing additional income to the beneficiaries. The initiative was also successfully displayed during the G20 meet held in Nagaland in April 2023 in which the various products were presented before the official delegation.

**Direct/Indirect Beneficiaries:** Total 20 women individuals belonging to ST category were benefitted through the initiative.



*Fig: Shiitake mushrooms cultivated in logs and display of products during G20 meet*

#### 8. Project Name: Setting up tea manufacturing unit

**Implementing Agency:** Mr. Igatho Yeptho, Sunika Enterprise, Nagaland

**Implementing Site (District & State):** Nikhekhu Village, Niuland Town, Nagaland

#### Objectives:

- To increase the current production capacity of Green Tea from 70 kg per month to 320 kg per month through technological intervention.
- To make efforts that the quality of the manufactured tea is met through the adherence to food safety and standardization
- To ensure that the local tea growers get a rightful price for their produce through direct purchase
- To explore and capitalize on the vast availability of local herbs and spices in the manufacturing of blended tea.



## Deliverables and outcomes

This project with the implementation site at Niuland-Dimapur Road, Nagaland deals with the production of green tea and varieties of flavoured tea with a blend of herbs and spices providing employment to atleast 10 people to be directly employed in the unit at present. These varieties include pure green tea, spicy rose tea, detox herbal tea, green tea paan, green tea blueberry, green tea apple, Rosemary herbal tea, Green tea Raspberry, Green tea Raspberry, blue pea mint etc.

**Direct/Indirect Beneficiaries:** Total 25 individuals belonging to ST category were benefitted through the initiative.



*Fig: Different varieties of packed Tea products*

## 9. Project Name: Setting up pre-processing units for horticulture and medicinal plant produces

**Implementing Agency:** Dibang Farmers Producers Cooperative Society Ltd.

**Implementing Site:** Apesha, Anini, Dibang Valley, Arunachal Pradesh

### Objectives:

- To establish common value addition cum processing centre which will improve the quality and expand the existing marketbase.
- Improve the entrepreneurial skills of farmers, to make them potential and vibrant producers.
- Establish forward and backward linkages with the external stakeholders to minimize the inherent problem of the cluster units.
- Increase the overall socio-economic condition of the cluster households.



- To upgrade the skill sets of farmers to match the requirements of major retail chains, exporters and changing tastes of customers.

### Deliverables and outcomes:

This unit at Anini supported by NECTAR with a grant of Rs. 25 lakhs are at present fully operational with the processing of kiwi and other medicinal plants. The unit has produced Kiwi jam, Squash, Dried kiwi from the available Kiwi during the season along with many other products from the medicinal herbs available there. Dehydrated Water Dropwort Leaf Powder and Oenanthe Javanica which helps in curing Jaundice, High blood pressure, abdominal pain and hepatitis. Others include Thambai leaf powder which have antimicrobial and antifungal properties, Dehydrated Oxaliscorniculata Powder which can be used as dietary foods, dehydrated Centella Asiatica Powder which can heal wounds and cure skin diseases and many more. Providing employment to around 10-15 people directly in the factory this project emphasizes on the capacity building of youth and women of the locality on extraction, processing and marketing on non-timber forest products and horticultural produces.

**Direct/Indirect Beneficiaries:** Total 111 individuals belonging to ST category were benefitted through the initiative.



## 10. Project Name: Setting up of Commercial Production Plant of Xaj Pani: The heritage Rice Based Alcoholic Beverage of Assam

**Implementing Agency:** M/s North East Agro Products and Services

**Implementing Site:** Jorhat, Assam

**Objectives:**

- To establish an improved method of brewing the rice based alcoholic beverage “Xaj-Pani” with a defined starter culture.
- Turbidity removal and improved stability of the beverage.
- Proper Bottling and Packaging by semi-automated machines in bottles of standard volumes.
- To carry out the whole process completely in a green environment without any major pollutants.

**Deliverables and outcomes:**

- A commercial production plant of the Xaj-Pani at Rajabari, Jorhat, Assam.
- Packaged Xaj in bottles of 750 ml volume.
- Tested and standardized the process of producing the heritage liquor of Assam.
- Distribution of Xaj to all districts of Assam and other states of NE.
- The project was able to start its commercial production from September 2022 and has since then earned praises from all around the Globe. It has able to find its place in newspapers and journals of national and international repute.

**Direct/Indirect Beneficiaries:** Total 25 individuals belonging to different categories such as ST(8), OBC (23) and general (11) including men and women were benefitted through the initiative. Also, more than 80 people from the nearby villages are indirectly benefitted for supplying of raw materials to the production unit.







#### 11. Project Name: Nutrition and Sustainable Livelihood with Mushroom Cultivation in Assam

**Implementing Agency:** M/s Mushroom Development Foundation

**Implementing Site (*District & State*):** Dimoria Block, Kamrup, Assam

#### Objectives

- The project seeks to enhance the lives of the mushroom farmers both at the social and economic level. The operation of the project aims in providing solutions to small and marginal farmers and of promoting nutritional food security throughout the nation.
- Design and implement a sustainable model with 100 members for Mushroom Cultivation.
- Conduct a socio-Economic Survey to find out the best possible person to put up and administer a mushroom demonstration unit for sustainable livelihood generation and program the implantation around it.

- Establishing proof of concept on mushroom cultivation for the community in the field by establishing Mushroom Demonstration Units (MDU) and effective handholding for sustainable growth of the mushroom industry for the participants through the MDUs.

### Deliverables and outcomes

- The following activities have been completed under the project: -
- Number of Sensitization Program: 20
- Number of household survey: 750
- Numbers of Villages Covered in Sensitization programs: 20
- Number of people/households benefited by the project:100 (470 people benefitted indirectly if 4-5 members per household is considered)
- Number of women participations:100 women were provided with low cost. mushroom growing houses along with mushroom kits.
- Trainings: Each of the100 participants were trained on the following- Mushroom Production Process, Disease and Pest Management, Post harvesting management,
- Value added products, Business plan development, Value chain development, 4 Area Level Federations (ALF) formed among the 100 participants, Marketing and bank account opening: 4 numbers (25 participants in each ALF).
- Average income made by per participants during the project implementation: Rs 18522/-; Total revenue generation- Rs. 18,52,200/-. Total Quantity of mushrooms produced: 12336 kgs (January –March, 7744 kg peak season of mushroom, April-June, 4592kg lean season



## 12. Project Name: Livelihood generation through establishment of mushroom Spawn Production Unit in Assam

**Implementing Agency:** M/s Diamond Mushroom Farm

**Implementing Site (*District & State*):** Khagarpur village, Bongaigaon, Assam

### Deliverables and outcomes:

- Quality mushroom spawns for nearby districts of Bongaigaon area in lower Assam.
- A spawn production laboratory with all the required modern machinery/equipment.
- The project was inaugurated in November 2023 in presence of local experts and other dignitaries.
- The unit is currently able to produce 800 kgs of spawn per month.
- The promoter has been able to provide direct employment to 2 people at the laboratory unit.
- Also, more than 150 people from the nearby villages are indirectly benefitted with the help of the hands-on training provided to them by the promoter in collaboration with various Agencies of State and Central Government

### Direct/Indirect Beneficiaries:

Total 143 individuals belonging to different categories such as ST(6), OBC (131) and general (4) including men and women were benefitted through the initiative.







## CHAPTER 3 EXTERNALLY FUNDED PROJECTS

### 1. Project on "Improving Sustainability of Traditional Terracotta and Pottery Business in Asharikandi village" under Scheduled Caste Sub-Plan scheme of Department of Science and Technology, GOI

The riverfront of Gadadhar River cradles the largest hub where traditional terracotta and pottery crafts thrive side by side. This haven, known as Asharikandi, lies within the Debitola development block in Dhubri District, Assam, India. Asharikandi boasts a unique terracotta style, upheld over time. Its fame springs from the age-old technique of crafting Terracotta and Pottery. The essence of this craft lies in the soil named HIRAMATI. Despite the village's rich history and the abundance of clay along the riverbank, the Asharikandi-style terracotta art is dwindling rapidly. The primary cause is the labor-intensive and health-risking nature of the traditional pottery process, worsened by inadequate compensation. The toil of traditional clay processing and the adverse effects of open firing methods have deterred the younger generation. The firing process itself releases harmful substances, dissuading youths from embracing this ancient tradition and steering them towards more rewarding alternatives.

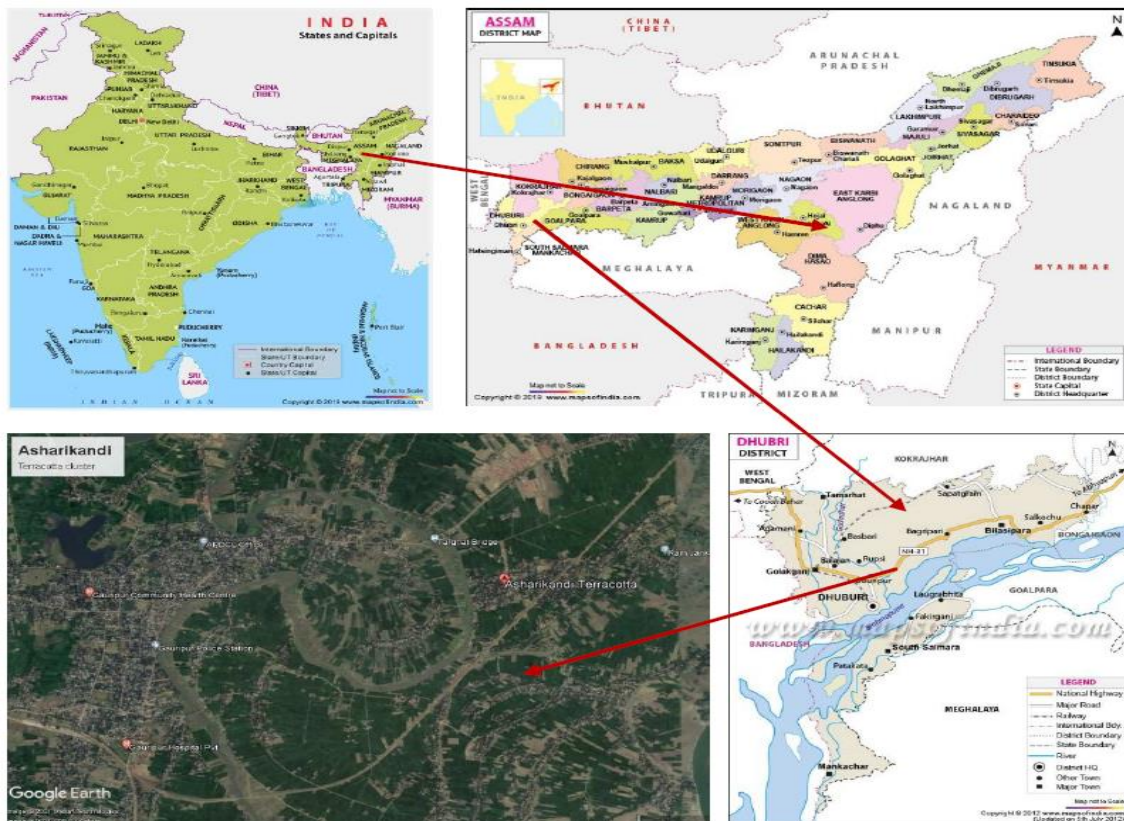


Fig: Location of Asharikandi terracota cluster in Assam

To address these challenges, a pilot project titled "Improving Sustainability of Traditional Terracotta and Pottery Business in Asharikandi" was initiated by NECTAR, in collaboration with Development Alternative Group (DAG) and North-East Craft and Rural Development Organization (NECARD), an NGO in Dhubri, Assam. This project aimed to modernize and support the traditional craft. Several technological interventions were introduced:

- a. The arduous clay preparation process was streamlined using a de-airing Pug Mill, reducing the time from days to just hours.
- b. Traditional wood-fired kiln firing time was slashed from 72 to 24 hours, with a rejection rate below 1%, significantly improving product quality.
- c. Innovations like Jigger jolly and molds sped up Kulhad production, enhancing productivity.
- d. Overall production efficiency surged nearly eightfold, accompanied by improved product quality, better artisan health, and reduced drudgery.
- e. Clay expenses were reduced, contributing to cost savings.
- f. The firing process was extended throughout the year due to enhanced techniques, resulting in increased teacup production.

A Community Facilitation Centre (CFC) was established in the village, housing the new machinery for artisans' use. The success of this pilot project motivated more villagers, particularly the youth, to adopt innovative methods and rejuvenate their interest in the craft.

Taking this initial success forward, NECTAR was granted an additional budget of Rs. 2.81 cr for the project "Improving Sustainability of Traditional Terracotta and Pottery Business in Asharikandi" from the SEED Division of the Department of Science and Technology, Govt. of India for a period of two years. The following activities were undertaken:

i) **CFC and Machinery:**

- a. Three (3) CFCs equipped with modern machinery were established, to replace manual labor.
- b. Introduction of customized machinery like De-airing Pug mill, Wood-fired kiln, Hydraulic press tile-making machine, disintegrator, U-shaft mixer, upgrading pottery techniques.
- c. Replacement of ergonomically incorrect postures and harmful firing methods with pugmills and kilns for improved health and environmental outcomes.





*Fig: Common Facility centres at Omkareshwar SHG, Terracotta Society and Shnati SHG CFC*



*Fig: Installation and operation of de-airing pugmill and wood fired kiln on CFC*

- ii) **Skill Development:** Basic and advanced training provided by TARA-Technology and Action for Rural Advancement (TARA), a part of the Development Alternative Group, NECTAR's technology partner, enabling artisans to adapt to modern machinery. Fifty-nine (59), beneficiaries were trained on operation, process, and quality control of motorised pug mill, wood-fired kiln and jigger jolly at Asharikandi. Ten (10) beneficiaries were trained at CGCRI, Khurja in the subjects of ceramic processing, slip casting, making of plaster moulds, reduction firing in furnaces and special products fabrication etc



*Fig: Training provided by TARA at CFC and at CGRI Khurja*

iii) **Marketing:**

- Creation of an Asharikandi pottery products catalogue.
- Facilitation of e-marketing training through MarketMirchi, allowing artisans to sell online.
- Participation in cultural exhibitions for exposure.
- Development of market linkages, starting with distributing Kulhads in Assam State offices.
- A Craft Mela has been organized at Asharikandi to promote the craft.
- Expansion of product lines based on market demand.

iv) **Soil Testing:** Technical assessment of clay samples from Asharikandi to determine suitability for pottery.

v) **Eco-tourism and Educational Excursion:**

- Potential development of Asharikandi as an eco-tourism hub.
- Guided tours for tourists to experience traditional craftsmanship and engage with artisans.
- Craft Mela for students to learn and participate in pottery

vi) **Craft Mela:** As part of the project proposal “Improving the Sustainability of Traditional Terracotta and Pottery Business at Asharikandi”, approved by SEED, a provision has been made for organizing



workshops and meetings for participation of beneficiaries in various marketing programs, handicraft, khadi and craft melas, both at State and Central level. In this regard, NECTAR has organized a Craft Mela on 2nd November 2023 at Asharikandi village, Dhubri. This event showcased the transformed terracotta and pottery business and highlight the positive impact of technology integration on traditional crafts. The event provided an opportunity to the local community, to bring forth their traditional knowledge which is intertwined with their cultural practices, with the participation of 11 SHGs and 46 students from 12 schools from Dhubri district.



- vii) **DST Review meeting:** On 2<sup>nd</sup> November, 2023, the Project Monitoring Committee (PMC) of the SEED Division, DST comprising of (i) Prof. N.C Talukdar, Vice Chancellor, Assam Downtown University; (ii) Dr. P.L.N. Raju, Special Secretary to the Govt. of Assam, Science technology & Climate Change dept/ Ex. Director NESAC DOS; (iii) Dr. Rajni Rawat, Scientist-D, SEED-DST, visited Asharikandi Village, Dhubri, Assam to assess the "Improving Sustainability of Traditional Terracotta and Pottery Business in Asharikandi" project, implemented by NECTAR. The PMC observed significant improvements in efficiency and product uniformity due to newly installed machinery. Recommendations were furnished and the PMC endorsed the project with suggestions of additional measures to further improve the project's outcomes.





viii) The integration of machinery brought unprecedented benefits to the terracotta community, enhancing productivity, and leading to economic growth. This success story has inspired neighbouring villagers to adopt these advancements. The artisans' improved quality of life and their products' global demand underline the enduring value of terracotta and pottery.







*Fig: Products displayed at Asharikandi craft Mela.*

## 2. PM Devine project for establishing a Value Chain on Utilization of Banana Pseudo Stem for Value-Added Products in NER

### Overview:

Under the PM-DevINE (Prime Minister's Development Initiative for North East) initiative, NECTAR was granted a project for establishing a Value Chain on Utilization of Banana Pseudo Stem for Value-Added Products in NE with total budget of Rs. 67 cr to be implemented in two phases across different locations in the NE. This ambitious project aims to harness the untapped potential of banana pseudo stems to produce valuable products, thus creating a robust value chain that adds value to agricultural byproducts and enhances the local economy. The project's primary objectives include setting up Common Facility Centers (CFCs) in various locations, providing technical know-how, training, and support to local entrepreneurs and farmers.

The different project locations include-

- 6 locations (districts) in Phase – I: East Siang (Arunachal Pradesh); Boko (Assam); Ri-Bhoi (Meghalaya); Serchhip (Mizoram); Chumoukedima (Nagaland) and Agartala (Tripura)
- 6 locations (districts) in Phase – II: Kokrajhar, Kamrup and Nalbari (Assam); Churachandpur (Manipur); Wokha (Nagaland); Khowai (Tripura)

### Objectives:

The project aims to establish Common Facility Centers (CFCs) across 12 locations in the North-East Region to support the production and processing of banana pseudo stems. The objectives include extracting fibre for nonwoven fabrics and handicrafts, developing organic liquid nutrients from sap, producing edible items from the central core, and manufacturing various types of paper from the fibre. The initiative seeks to generate rural

employment, provide eco-friendly raw materials to multiple industries, enhance farmer incomes through the sale of various banana stem by-products, and leverage the region's natural skills to create economic opportunities.

### Key developments:

In recent months, several significant milestones have been achieved in the development and implementation of various projects across the northeastern regions of India. Notable among these achievements is the initiation of construction work for Common Facility Centres (CFCs) in various locations, including Jawaharlal Nehru College in Boko, Assam, and the finalization of land and preparatory activities for CFCs in places like Serchhip, Mizoram, and Uttar Debendranagar in Agartala, Tripura. Additionally, groundwork has been laid for future CFCs in Leku village, Arunachal Pradesh, and Kukidolong village, Nagaland, with work orders issued and blueprints finalized. Site assessments and inspections have been carried out in multiple locations to ensure alignment with project designs, demonstrating a rigorous approach to project management and execution.

Parallel to the infrastructural developments, several initiatives aimed at capacity building and technical support have also been undertaken. This includes village-level orientation programs, workshops, and training sessions, such as the introduction of the Banana Pseudostem Project to Amjong cultivators and organic carbon detection training at Bhaba Atomic Research Centre (BARC) in Mumbai. Collaborations with academic and research institutions, including MoUs with Navsari Agriculture University and technical support from NIRD&PR, Hyderabad, further bolster the projects. The formation of an expert group for monitoring and a baseline survey of proposed CFC sites underscores the commitment to systematic planning and evaluation, ensuring the successful implementation and sustainability of these initiatives aimed at enhancing livelihoods in the northeast.



*Fig: Village level orientation for project implementation*



*Fig: Meeting with Project Director DRDA & Nodal officer District Mission Management Unit, MSRLS, Ri-Bhoi District, Meghalaya and site visit to East Siang District, Arunachal Pradesh with HPDCAPL team*



*Fig: NECTAR team of Experts visit to NIRD & PR, Hyderabad*



*Fig: One day workshop on outputs of ICSSR short term empirical Research projection on the theme “Survey of PM-DevINE Scheme and NECTAR and the impact on enabling Livelihood Activities for youth and women in the northeast: A Case Study of Manipur”*





*Fig: NECTAR team visit to BARC on a 2-day Technology transfer of the Soil Organic Carbon Detection kit for baseline analysis of PM-DevINE Banana pseudostem and Organic Farming Project.*



*Fig: Baseline survey Boko, Assam and Joint visit by NECTAR and MSRLS to Amjong village, Ri-Bhoi District, Meghalaya for site assessment*



*Fig: Visit by Sr. Economic Advisor, Ministry of DoNER to CFC location at Boko*

*Fig: Meeting with NIRD & PR officials, Hyderabad*



*Fig: Expert Group formed, and first meeting held on 17th July 2023*



*Fig: Banana fiber extraction at ICAR-NRC for Banana, Trichy*



*Fig: Signing of the MoA between NECTAR & NAU, Navsari*



*Fig: Baseline survey work in Goalpara district, Assam with experts from Navsari university, Gujarat*



*Fig: Meeting of two Scientist from NAU, Navsari and Dr. Pauchau, Addl. Director, Horticulture Dept. Govt. of Mizoram at his office on discussion of PM-DevINE Banana Project*



*Fig: Official team of NECTAR visited Ziro, Lower Subansiri, Arunachal Pradesh with Mr. Hibu Dante, DHO & SDHO of Dept. of Horticulture for PM-DevINE Banana Project*



### 3. PM Devine project for Promoting Scientific Organic Agriculture in North-East India (Multi-State)

NECTAR is implementing the project “Promoting Scientific Organic Agriculture in North-East India” under the PM-DevINE scheme in 250 different clusters across North-Eastern states. It includes implementation in Assam (75 clusters), Meghalaya (55 clusters), Tripura (50 clusters), Arunachal Pradesh (15), Mizoram (20) and Nagaland (20), and Manipur (15). Accordingly, we are targeting 250 Master trainers and 25000 Trainee farmers to be trained under this project in entire North-East by engaging different implementing agencies.

#### Objectives of the project:

- Create **250 organic certified clusters** with commercial & logistical viability for production aggregate, futuristic intervention such as setting up of an organic outlet or post-harvest management, and value addition of products
- Facilitate **250 Master Trainers** (1 Master Trainer in each cluster) to perform demonstrative organic farming in farm labs in their geographical areas by providing technical guidance.
- Setting up **250 demonstrative farm labs** at each cluster. These labs will be under the supervision of the Master Trainer, where all training related to organic farming will be carried out including theoretical/practical.
- Create a pool of **25,000** (100 trainee farmers in each cluster) **trained farmers** with enhanced information, knowledge, and skills in organic farming with proper market linkage
- There will be a **community seed bank** in selected clusters to cater to the need of organic seeds & planting material to sustain each cluster through the facilitation of training & market linkage
- Creating a **digital agriculture data management facility** as a web-based portal for monitoring, management & market linkage. There will be temporal **drone data acquisition** and integration in the portal for proper visualization & better decision-making.
- Establishment of **soil testing and pesticide testing facility** for quality assurance, soil-specific suggestions for better harvesting & value addition
- **Organic Outlet** in potential locations/ tourist destinations to empower local communities
- Exploring the possibilities of introducing a **carbon financing system** within the areas under the project to provide additional income to the farmers.

#### Implementing Partner Agencies:

For implementation of 55 clusters at Meghalaya, a MoA was signed between NECTAR and Meghalaya State Rural Livelihood Society (MSRLS) on 20.07.2023 for baseline survey, mobilization of beneficiaries, setting up

of farm lab and training to farmers. Other selected implementing agencies are Mark Agri Genetics Pvt. Ltd., Yusuf Meherally Centre, International Competence Centre for Organic Agriculture, Clover Organic Pvt. Ltd., ACCESS Development Services, Sikkim State Cooperative Supply & Marketing Federation Ltd., Krishi Vikas Sahakari Ltd. and Sheel Biotech Ltd. which will implement in Assam, Tripura, Mizoram, Manipur and Nagaland. Another MoA was signed between NECTAR and Bio Resources Development Centre (BRDC) on 17/08/2023 for Meghalaya state for training of Master trainers and preparation of farmers training modules. BRDC will provide final PGS organic certification at Meghalaya.



*Fig: Signing of the MoA between NECTAR and Meghalaya State Rural Livelihood Society, Shillong on 20.07.2023*



*Fig: The signing of the MoA between NECTAR and National Bureau of Plant Genetic Resources, on October 12, 2023*



*Fig: Vasundhara – Mobile Soil carbon detection kit developed by BARC and transferred to NECTAR*



*Fig: Second Expert Committee meeting held at Guwahati on 28th March 2024*





*Fig: 1st phase master trainer's training help a Horticulture Research Station, Aasam Agricultural University (AAU), Kahikuchi, Guwahati (14/05/2024-17/05/2024)*



*Fig: Practical sessions conducted during the master trainer's training at BioResource Development Centre (BRDC), Upper Shillong, Meghalaya (06/05/2024-11/05/2024)*



*Fig: Field visit by NECTAR officials during December 2023 at Jengjal Village, West Garo Hills District, Meghalaya to inspect progress of works and engaging with various*



*Fig: Article on PM Devine Livelihood projects published in Assam Tribune by DG, NECTAR*



#### 4. Skill Development under Pradhan Mantri Kaushal Vikas Yojana (PMKVY)

Pradhan Mantri Kaushal Vikas Yojana (PMKVY) is the flagship scheme of the Ministry of Skill Development and Entrepreneurship (MSDE) implemented by National Skill Development Corporation (NSDC). The objective of this Skill Certification scheme is to enable Indian youth to take up industry relevant skill training that will help them in securing a better livelihood.

Skill development plays a crucial role in addressing the challenge of livelihood. Enhancing the skills of individuals can improve their employability, income-generating potential, and overall well-being. High levels of unemployment and underemployment contribute to the challenge of livelihood. Among others, people may lack the necessary skills to secure stable and well-paying jobs coupled with limited entrepreneurship opportunities which hinder individuals from creating their own livelihoods. Such limited economic opportunities, especially in certain regions or industries, can hinder livelihoods.

The Pradhan Mantri Kaushal Vikas Yojana (PMKVY) offers three types of training: Short Term Training (STT), Recognition of Prior Learning (RPL), and Special Projects (SP). NECTAR has taken up Recognition of Prior Learning (RPL) training through the National Skill Development Corporation (NSDC) and Short Term Training (STT) through the Indian Institute of Entrepreneurship (IIE), in collaboration with different Government departments and Agencies for various job roles. 240 Targets was allotted from NSDC for the “Recognition of Prior Learning (RPL)”, out of which the first batch of 14 candidates who belong to the category of “Persons with Disabilities” had completed the training for the "Domestic Data Entry Operator" job role with the second batch of 10 trainees having completed in the last week of July 2024 in Shillong. Furthermore, in SDCGL- NECTAR Khanapara, Assam, 14 candidates enrolled in the "Drone Service Technician" program have completed the training with 17 for the "Drone Manufacturing and Assembly Technician" program. Efforts are continuing to complete the training for sectors in Kissan Drone Operator and Bamboo Work Artisan.

Further, 573 Targets were allotted from IIE for various job roles ranging from food processing to textile and non-timber forest produce. This program is emphasizing on empowering the women of the community on various aspects in ensuring livelihood and income generation especially in the rural areas.

The training process is entirely system-based and computerized, handled through different portals. The comprehensive process, from registration, enrolment, verification, and configuration, through to the completion of the program, was all automated ensuring a streamlined and efficient workflow. The training hours are based on the job role requirements set by NCVET. Daily attendance for both candidates and trainers are recorded on entry and exit using the Aadhaar Enabled Biometric Attendance System (AEBAS). Some job roles include On Job Training. It aims to provide practical exposure to candidates which will lead to better employability for the candidates as they experience a live-work environment. The final assessment of the candidates will be carried out after completion of training and OJT (if required). All candidates who have successfully completed the

training with at least 70% attendance becomes eligible to appear for assessments. Assessment and certification will be the responsibility of NCVET approved Awarding Bodies and Assessment Agencies empanelled by the Sector Skill Council (SSC) which shall provide fair and reliable services in a timely manner. All the candidates who pass the assessments successfully would be awarded a graded certificate. The candidate will receive the hard copy of the certificates from their respective Training Centre or Training Partner after the results have been approved by SSC and Certificates are downloaded by the Training Centre or Training partner. The results are first approved by the Assessment agency and the final approval is accorded by the Sector Skill Council, post which the Certificates can be downloaded after 24 hours of the approval.

Assessment and certification are essential components of PMKVY 4.0 Training as they ensure that candidates acquire industry-relevant skills and knowledge. By undergoing assessments, individuals demonstrate their competency in specific job roles, thereby enhancing their employability and career prospects. Certificates and Skill India card enable the candidates to apply for jobs and earn a livelihood. Certifications validate their capabilities to potential employers and signify alignment with industry standards, fostering confidence in their readiness for professional roles. For PwDs, this process showcases their abilities and prepares them for employment opportunities, boosting their confidence and job prospects in a competitive market. Certification under PMKVY 4.0 provides formal acknowledgment of their skills, easing their entry into the workforce and opening paths for career growth. Moreover, government recognition of these certifications under PMKVY 4.0 reinforces their value, potentially leading to further support and opportunities for career advancement within the skilled workforce.

Regular inspections were conducted at various intervals by NECTAR and the collaborating Government departments and agencies to ensure that the training programs are at par and compliance with standards, to verify the quality of training delivery, assess the effectiveness of training programs, identify areas for improvement, and maintain accountability.

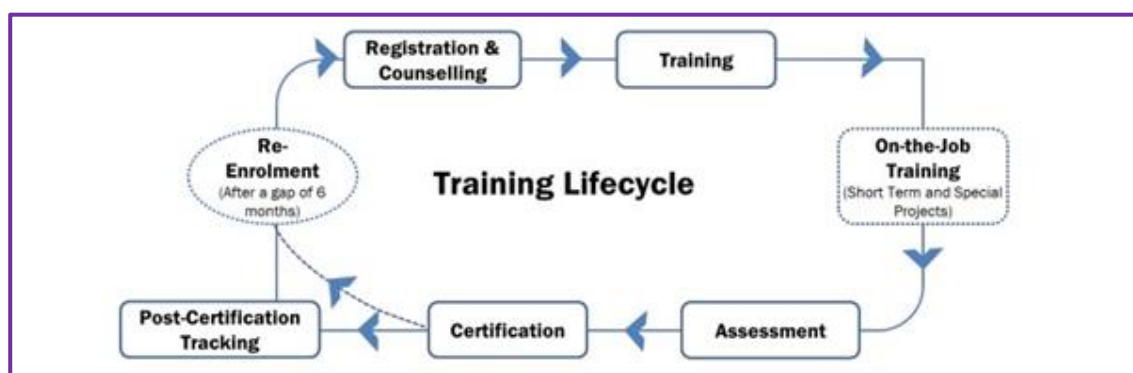


Fig: Training Life-Cycle Process

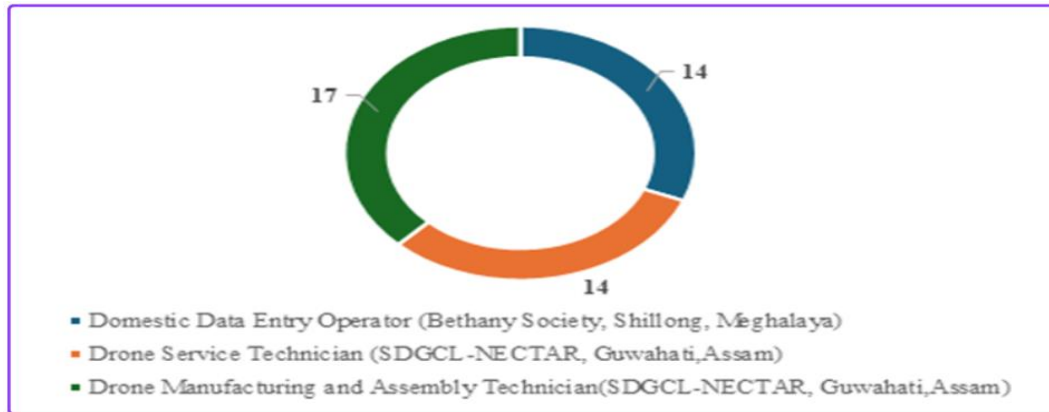


Fig: Candidates trained under RPL training program in Meghalaya and Assam



Fig: "Recognition of Prior learning (RPL)" Training Program at various locations



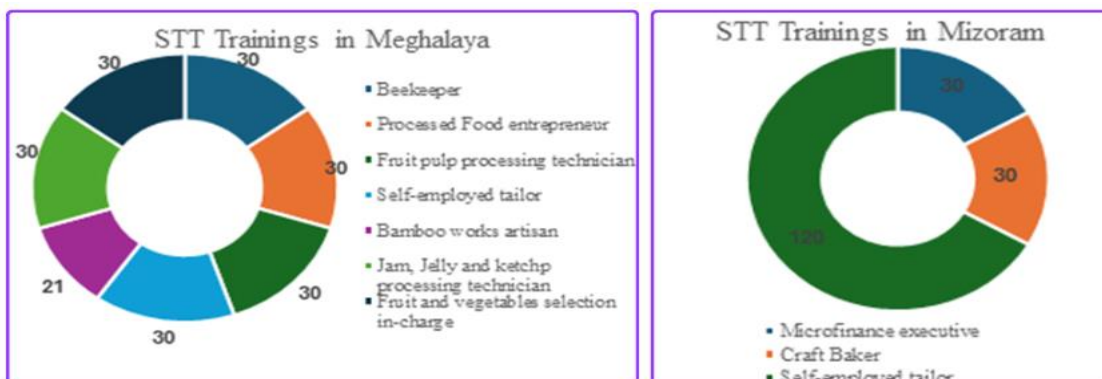


Fig: Candidates trained under STT training program at Meghalaya and Mizoram



Fig: "Short Term Training (STT)" program at various locations



## 5. Central Sector Scheme on Formation and Promotion of 10,000 Farmers' Producer Organizations (FPOs)

### Introduction

Under the Central Sector Scheme (CSS) "Formation and Promotion of 10,000 Farmers' Producer Organizations (FPOs)", NECTAR is empanelled as the Cluster Based Business Organisation (CBBO) under NERAMAC, the Implementing Agency. The core objective is to bring together small, marginal, and landless farmers to enhance their economic strength and market connections, ultimately improving their income. NECTAR plays a crucial role by providing essential assistance in mobilization, registration, business planning, and operational guidance, aiming to boost active engagement among farmers in the FPOs. In FY 2022-23, 21 FPOs were established across 21 blocks within 7 districts of Arunachal Pradesh. These FPOs primarily focus on promoting agricultural and horticultural commodities and identifying marketing opportunities to uplift farmer welfare and regional prosperity.

### Activities completed

A comprehensive baseline survey identified primary and secondary crops, assessed socio-cultural similarities, and analysed gaps in the agricultural and horticultural value chains. This survey also evaluated the farming status of small, marginal, and landless farmers to identify intervention areas. Emphasis was placed on farmer mobilization and community engagement, with awareness campaigns conducted about NECTAR schemes and other agricultural initiatives to encourage active participation. FPOs were incorporated, and Boards of Directors (BODs) were trained on their roles, responsibilities, management, and capital/equity mobilization. CEOs and accountants were appointed at each FPO to manage daily activities and ensure economic sustainability which is in compliance with the requirements as per the Scheme.

Training and capacity-building workshops were also conducted for FPO groups. FPO offices were established with proper infrastructure and facilities such as computers, furniture and fixtures, and they received management funds to support their sustainability and economic viability. Additionally, NECTAR is providing handholding support to these FPOs for availing the FPO management cost as permissible under Scheme guidelines and are also applying for matching equity grants from the Government to strengthen their financial base. Securing such credit from financial institutions for their projects and working capital needs would strengthen their business development.

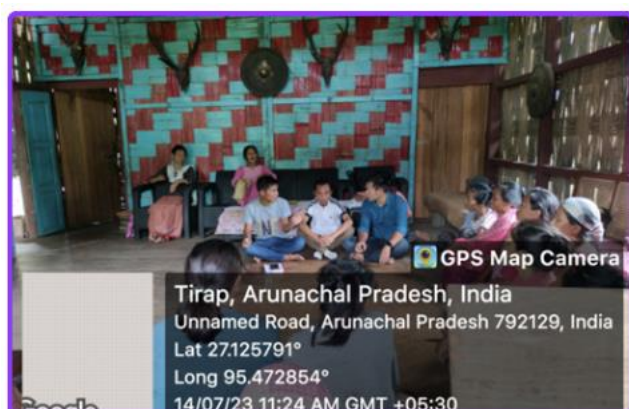


To advance their objectives, the FPOs have been conducting timely meetings with their Board of Members and Farmer Interest Group (FIG) Leaders to exchange valuable insights and develop strategic plans for the organization's progress. These discussions have been crucial for formulating effective strategies to steer the FPOs toward achieving their goals. Moreover, the FPOs have engaged in essential meetings with key officials from the District Agriculture Officer, District Horticulture Officer, and Deputy Commissioner's office. These interactions aim to explore available schemes, obtain necessary licenses, secure training opportunities, and uncover other beneficial resources for the FPCs (Farmer Producer Companies).



Training sessions on e-commerce platforms and accounting software have been organized to equip members with the necessary skills for modern business operations. Awareness programs will also be conducted to keep shareholders informed and address any queries from farmers. Furthermore, the FPOs plan to seek collaboration with district administration for additional training related to farming, enabling Board Members and FIG Leaders to pass on this knowledge to the broader farming community.

The FPOs have recently received their Matching Equity Grant, marking a significant step in their development. It involves preparation of the business plan and budget for next 18 months that is based on a sustainable, revenue model as may be determined from time to time. In collaboration with NECTAR as CBBO, these FPOs will now focus on marketing their goods to generate substantial and remunerative income. They are actively pursuing various government schemes to obtain critical resources such as farm mechanization tools, storage units, and subsidies. Additionally, they are seeking credit linkages and other farming tools to enhance their operational capabilities.



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## Way Forward

To enhance the operations of Farmer Producer Companies (FPCs), several strategic initiatives will be pursued. Comprehensive market surveys outside the cluster will provide real-time data on pricing, demand, supply, and emerging trends, helping the FPCs understand market dynamics and competitively position themselves. Routine visits to key commercial hubs will be undertaken to build and solidify relationships with merchants and explore new market opportunities.

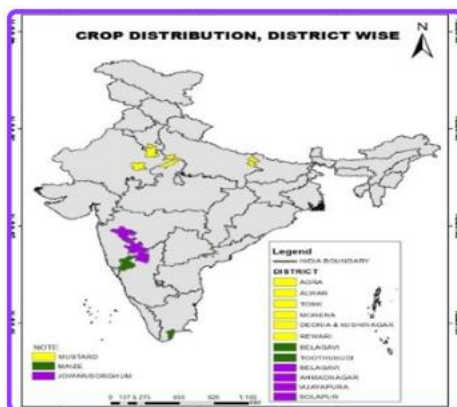
Participation in trainings, summits, and fairs will open doors to valuable connections with potential investors and market players, while forging partnerships with other FPOs will expand marketing efforts and market reach. Collaboration with district administration will be sought to provide essential farming-related training, ensuring

that Board Members, FIG Leaders, and the broader farming community benefit from this knowledge.

The process of distributing share certificates to shareholders will be completed, and steps will be taken to procure and test seeds and obtain necessary seed licenses. Strategic meetings will be convened to formulate detailed plans for farming activities, investment strategies, and other business ventures aimed at increasing income. Furthermore, the FPCs will emphasize training in value addition, crop protection measures, pre- and post-harvest management, integrated farming, and good agricultural practices for soil and water management. Additionally, exposure trips will be organized to offer practical insights and enhance learning experiences.

#### 6. Pilot studies for GP (Gram Panchayat) level Crop Yield Estimation using Advanced Technology for Non-cereal crops Rabi-2022-23

NECTAR was entrusted by Mahalanobis National Crop Forecast Centre (MNCFC), Ministry of Agriculture and Farmers Welfare, GoI, to develop of GP level yield crop forecast model using Remote Sensing and GIS technology for 13 districts of India covering 3 crops Mustard, Sorghum and Maize.



District Name	Crops	No of GP boundaries
Bijapur (Vijapura)	Sorghum	43
Ahmednagar	Sorghum	50
Solapur	Sorghum	50
Belagavi	Maize, Sorghum	50
Deoria & Kushinagar	Mustard	61



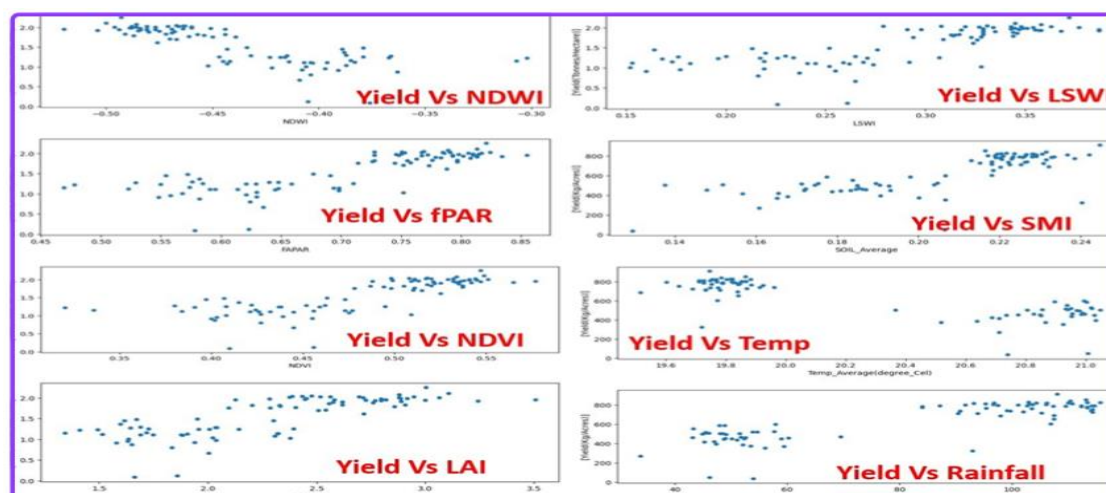
GP level crop classification was carried out using high resolution 3 m Planet Lab data for Sorghum and Maize districts and 10 m Sentinel 2 data for Mustard districts with classification accuracy between 90% to 94%. The crop classification carried out using the Ground Truth data collected by engaged interns and students of North Eastern region after suitable training. The remote sensing parameters such as NDVI, NDWI, FAPAR, LAI and weather parameter such as rainfall, temperature and soil moisture were processed in the NECTAR GIS lab. An AI/ML based model was developed using these parameters to generate GP level yield forecast model. The following methodology was used for the generation of crop yield forecast model.

#### a) Estimation of Remote sensing and other parameters

The crop mask area was extracted from the attribute of classes after the classification as applicable from the available Image sets (Planet-Scope & Sentinel) and then the planet scope crop mask was superimposed over the sentinel and the corresponding raster crop mask of sentinel was converted into polygon. After that, we used the Crop area Polygon to run both at the GP and CCE-wise average Parametric value. The Variables extracted are Normalized Difference Vegetation Index (NDVI), Normalized Difference Water Index (NDWI), Leaf Area Index (LAI), FAPAR, and Land Surface Water Index (LSWI). Further Temperature (MAX/MIN), Rainfall, Soil Moisture, etc. were extracted from available Gridded data from the list.

#### b) Crop Yield Modelling

The CCE data was availed from agencies in the form of small crop area coverage of 5mx5m in all districts. The same was interpreted in the satellite data to extrapolate to the plot and GP level and Remote Sensing, Meteorological, and Bio-Physical variables were extracted for preliminary analysis of these data sets. The correlation analysis among the parameters was conducted to assess the mutual dependency on yield. The following trend of scatter plots was analyzed-



### c) Correlation Analysis

In the above scatter plot about 86 CCE data points were used pertaining to Alwar & Tonk bearing Mustard Crop. The general trend of correlation obtained for Ground observed yield (dependent variable) Vs other parameters (independent) is found to be linearly dependent except for Rainfall and Temp. The Temp and Rainfall data were extracted from very low-resolution gridded data, due to which the relation is insignificant at GP Level. However, when these data sets are subjected to testing of significance the correlation coefficient, tells us about the strength and direction of the linear relationship between dependent and independent variables. However, the reliability of the linear model also depends on how many observed data points are in the sample. We need to look at both the value of the correlation coefficient and the sample size  $n$ , together. We perform a hypothesis test of the "significance of the correlation coefficient" to decide whether the linear relationship in the sample data is strong enough to use to model the relationship in the population. Because of the high value of RMSE, MAE, MSE, RMSE and the low value of R square obtained for these points, the AI/ML approach modelling was adopted to get possible significant modelling results.

### d) Results on AI/ML Approach using Plot Level Estimate of Crop Yield from CCE data

The data taken under this method was collected from Districts: 13 (Rewari, Tonk, Agra, Ahmednagar, Alwar, Belagvi (Sorghum and Maize), Elluru, Kushinagar, Deoria, Morena, Solapur, Thoothukudi, Vijayapura), Crop: Mustard, Maize, and Sorghum

The data had some outliers which were removed before modeling using the Z-Score analytical elimination method. After this step, data points from different districts were used for modeling. The following confusion matrix is achieved:

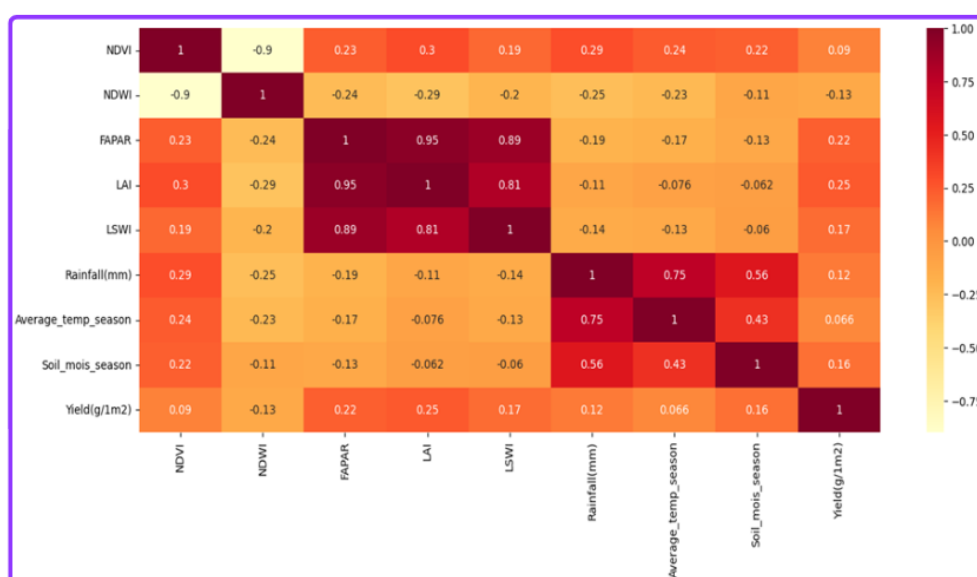
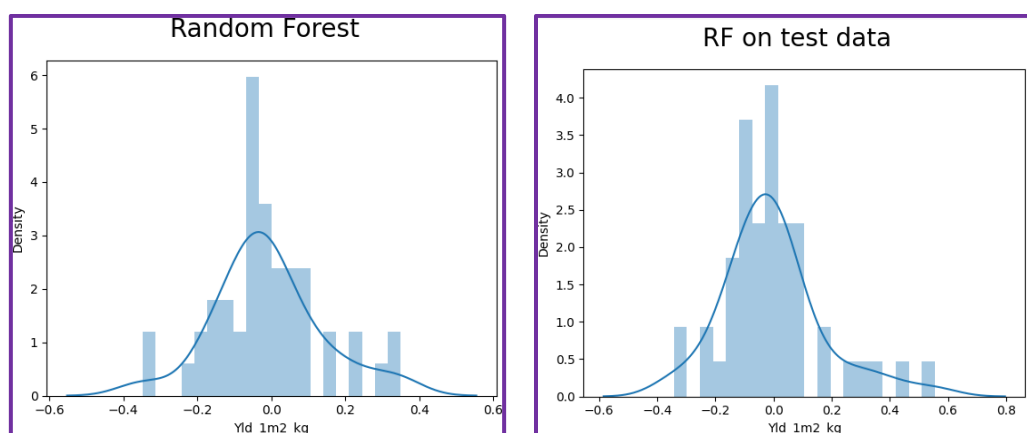


Fig: Confusion matrix shows a correlation between all dependent and independent variables.

The resulting data was split into training and testing data randomly in a ratio of 80:20. There were several methods under AI/ML were tried.

1. **Random Forest:** Random Forest is an ensemble technique capable of performing both regression and classification tasks with the use of multiple decision trees and a technique called Bootstrap and Aggregation, commonly known as bagging. The basic idea behind this is to combine multiple decision trees in determining the final output rather than relying on individual decision trees. The data was normalized before modeling.
- Two experiments were performed - (a) With LAI, FAPAR, NDVI, NDWI, and LSWI; and (b) With LSWI and NDVI. The following results in both methods were obtained:



2. Random Forest showed some kind of satisfactory performance when trained on most dependent variables with yield. However, the RMSE obtained is not within the acceptable range. Hence further study & analysis of the dependency among variables with the yield is required.
  3. There can be several reasons attributed to these models not performing up to the mark: (a) Insufficient training data. (b) High variability in data.
- a. Results on AI/ML Approach using GP Level Estimate of Crop Yield from CCE data.
- The CCE level data of all the districts has been taken in the study.
  - The GP level yield is calculated by extrapolating the CCE level yield to the GP level.
  - The Raw data contains different Remote sensing parameters like NDVI, NDWI, FAPAR, LAI, LSWI & Yield at CCE level.
  - Independent Variables: NDVI, NDWI, FAPAR, LAI, LST
  - Dependent Variable: CCE Level Average Yield

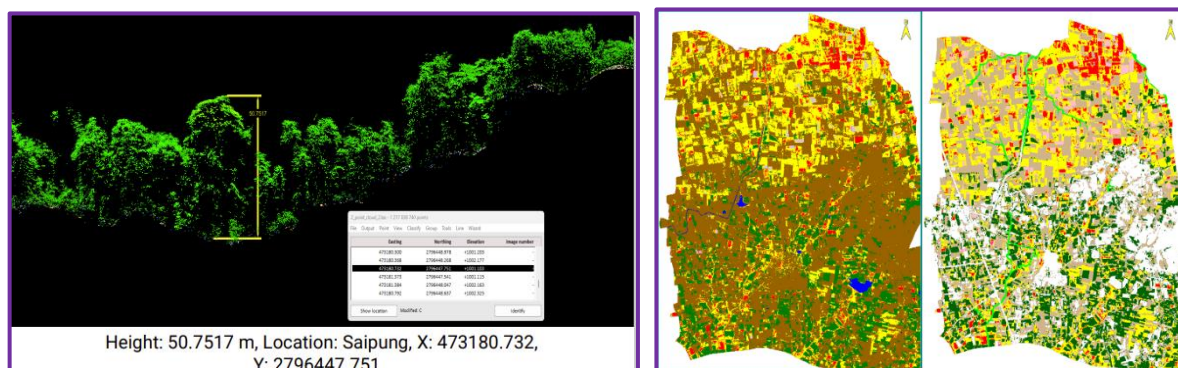
- Further data was split into training and testing data randomly in a ratio of 70:30. The following Modelling algorithms were used-
- Random Forest Regression
- The Random Forest showed better performance. The R square values and MAPE values for all districts are given in below table:

District (Crop)	R Square Value	MAPE Value (%)
Agra (Mustard)	0.87	4.91
Ahmednagar (Sorghum)	0.82	23.55
Alwar((Mustard)	0.85	19.81
Belagavi (Maize)	0.87	14.47
Belagavi (Sorghum)	0.86	57.31
ELURU(Maize)	0.84	17.01
Kushinagar Deoria (Mustard)	0.88	4.93
Morena (Mustard)	0.86	10.67
Rewari (Mustard)	0.84	19.72
Solapur (Sorghum)	0.87	18.93
Thoothukdi (Maize)	0.87	12.73
Tonk (Mustard)	0.85	52.37
Vijayapura (Sorghum)	0.87	1.67

#### 7. Forest Survey and Mapping for Meghalaya Using a hybrid approach (Airborne Sensor/Helicopter/UAV) to Analyze Carbon Financing and Phyto-diversity Heat Map:

NECTAR was entrusted by Meghalaya Biodiversity Board (MBB), Govt. of Meghalaya the subject project. The objective of this project is to conduct an airborne sensor/ Helicopter/ UAV based forest survey and inspection of the proposed reserve forest area in the state of Meghalaya, India by capturing very High-Resolution LiDAR survey and hyperspectral mapping and analysis for carbon sequestration and floral diversity, phyto-diversity heat mapping and to do analysis of Carbon financing of the forest areas, creating a forest database for the entire forested region of the state, proper demarcation of forest area, spectral library of tree species and forest health assessment.





The project was successfully implemented by collecting about 600 sq km area through LiDAR, Hyperspectral and RGB Sensors mounted on UAV and Helicopter Platform. The aerial sensor data was collected over 32 reserve forest patches in different regions of Meghalaya and the data sets are processed & analysed for multiple products in very high resolution (10cm to 1metre). The deliverables such as tree height, tree species, canopy density, Digital elevation Data and other land use land cover information. The data was validated with close supervision of NECTAR technical team and external experts appointed from different institutions (NESAC, JNU, NEHU).

### Outcomes:

Above-ground biomass (AGB) and carbon sequestration (CS) capacity were calculated for different seasons (before and after monsoon), and it was found that both the AGB and CS had increased after monsoon, indicating seasonal changes in the Meghalaya Forest. The highest aboveground biomass was found in Tura Peak (5696 kg), Baghmara followed by Gittingiri. The other high-range AGB forests are Dilma, Imangere, Narpuh 1, Narpuh 2, Nongkhylllem, Rajashimla, Revak, Riat Khwan, Rongengere, Saipung and Songsak. Moreover, carbon sequestration is in high ranges in the forests of Baghmara (15122 ton/hect), Tura Peak, Gittingiri, Narpuh 1, Narpuh 2, Angratoli, Darugiri, Dilma, Ildek, Imangere, Nongkhylllem, Rajashimla, Revak, Riat Khwan, Rongengere, Saipung and Songsak.

Going by the forest structure, from LiDAR data, it was found that the tallest trees are in Tura Peak (67 m), Angratoli, Baghmara, Dambru, Darugiri, Chimabanshi, Dhima, Dilma, Gittingiri, Narpuh 2, Nongkhylllem, Revak, Saipung, Umkuthi, Umsaw, Riat Laban. According to the forest canopy cover, we can stratify the Baghmara, Dambru, Angratoli, Dilma-Rajashimla, Gittingiri, Imangere, Narpuh 1 and 2, Nongkhylllem, Riat Laban, Saipung and Tura Peak having the most extensive canopy cover and density.

The hyperspectral data was used to map out the species of the reserved forest and we have mapped out 400 species and more (these have been listed in the species database). We have found that there are RFs that are heterogeneous and homogeneous. Heterogeneous: Umkuthi, Umsaw, Tura Peak, Upper Shillong, Latikor, Riat Laban, Riat Khwan, Green Block. Homogeneous: Angratoli, Baghmara, Nongkhylllem, Dambru, Darugiri,

Dhima-Chimabanshi, Dibruhills, Gittingiri, Rajashimla, Songsak, Ildek, etc. Apart from this, we have seen that there is evident encroachment from the borders of the reserved forest (it is seen during the change in land use and land cover). Maximum areas are covered in 3-layer foliage and among them, few are in 4-layer foliage.

Apart from this we also found that species like Shorea Robusta, Tectona Grandis, Careya Arborea, Magnolia Hodgsoni, Artocarpus ssp, Exbucklandia populnea, Bauhinia variegata, Schima wallichii and Litsea monopetala have high carbon sequestration capacity. These species can be used for afforestation purposes.

The health of the forest has been mapped and it is seen that the overall forest is on the healthier side. In all these, the healthiest forests are Baghmara, Dambu, Rongengere, saipung, Songsak, Tura Peak, Umsaw, Upper Shillong, Riat Laban, Green Block, Laitkor, Dibru Hill, Umkuthi. Other forests have a few issues like jhumming, forest fire, seasonal change elements, climate change, leaf albedo, and human interferences.

#### 8. Aerial Drone survey project with NEST Foundation in Agriculture land in Meghalaya

North East Social Transformation Foundation (NESTF) is a Non-profit organization based in Guwahati, who works for various development sectors, especially in Agriculture and Allied areas for social economic development of North East Community people. The organization desires UAV /Drone based high resolution Mapping service/ activity from NECTAR based on the capacity possessed by the Centre. NECTAR had successfully completed aerial drone survey in different four district namely West Khasi Hills, East Khasi Hills, West Jaintia Hills and East Jaintia Hills in Meghalaya state and approximately 4500 hectares of Land captured for plantation management. Planning of afforestation program through indigenous plant species in the locality is processed by processing the high-resolution images and has been submitted to NEST Foundation.



*Fig: Field Drone survey in various location in Meghalaya*

### 9. Mahanadi Coalfields Mining area aerial drone survey in Odisha:

Mahanadi Coalfields Limited (MCL) is one of the major coals producing company of India. MCL produce & market the planned quantity of coal and coal products efficiently and economically in an eco-friendly manner with due regard to Safety, Conservation and Quality. The drone survey in coal mining areas is part of a broader initiative to enhance the accuracy and efficiency of data collection and management in the coal mining sector. The project is accomplished by NECTAR, a leading drone service provider in collaboration with its Industrial Partner and Mahanadi Coalfields Limited at Sundargarh & Jharsuguda district of Odisha. NECTAR successfully completed 9000 hectore (large scale mapping) mining areas aerial drone survey with RGB sensor. The project has one vital component on **establishment of Master Control Point (MCPs), Permanent Benchmark (PBMs), Ground Control Points (GCPs)**. It has completed DGPS survey works mainly focused on high accurate locational positioning which is helping them for further development and volumetric estimation of the coal mine area. Along with DGPS them have conducted Aerial drone survey of the entire area which will be used various site identification and mining of coal field. The output of the survey work is 519 RTK based Ground Control Points, 29 Permanent Benchmarks, 12 Master Control Points.



### 10. Quality Assessement of Khasi Mandarin Orange in Warmawsaw and Mawskeilum village of Meghalaya using Drone Images:

A Japan based Company (Casley India Pvt. Ltd.) known for its innovative approaches in utilizing drone technology for various applications, utilised time series Drone Images under a pilot project conducted in Meghalaya in partnership with NECTAR and involving local community farmers in their Khasi Mandarin orchards. NECTAR supported in conduct of drone flying aimed to khasi mandarin fruit crops health monitoring with Multi Spectral Scanner and development initiatives. This project leverages advanced technology such as AI/ML and Blockchain through drone technology to capture high-resolution aerial data, in different time series of crop for quantity and quality assessment.





#### 11. Ground Control Survey through DGPS Observation: Two projects on DGPS survey work were taken up by engaging Northeastern resource person

The successful implementation of advanced Differential Global Positioning System (DGPS) technology facilitated highly precise locational measurement surveys in Karnataka and Kerala, yielding significant revenue. These surveys were conducted with meticulous attention to detail, aiming to achieve unparalleled accuracy in positioning data crucial for urban planning, infrastructure development, and various developmental projects in the regions. Through the utilization of DGPS technology, the surveys achieved unparalleled precision, providing invaluable data that can be leveraged for informed decision-making and strategic planning in diverse sectors. The accurate locational measurements obtained through these surveys serve as a cornerstone for effective urban development strategies, enabling authorities to optimize resource allocation and streamline infrastructure projects for maximum efficiency and impact.



The primary objective of these high-precision locational measurement surveys was to support urban planning initiatives, infrastructure development projects, and other developmental endeavors in Karnataka and Kerala. By harnessing the capabilities of DGPS technology, stakeholders were empowered to gain comprehensive insights into spatial data, facilitating informed decision-making processes and enhancing the effectiveness of

development interventions. Moreover, the successful completion of these surveys underscores the importance of leveraging advanced technologies to address complex challenges and drive sustainable growth and progress in the regions. The revenue generated from these surveys not only underscores their economic viability but also highlights the value of investing in cutting-edge technologies for achieving development objectives with precision and efficacy.

## 12. Quadrant Survey in Forest Mapping Project of Meghalaya

In a comprehensive forest survey initiative, utilizing the quadrant method, researchers undertook extensive fieldwork across the forest areas of Meghalaya, covering more than 32 plots within various dense forest regions. This study employed the quadrant sampling method, a widely recognized technique in ecological research, to systematically collect data on vegetation characteristics such as tree species composition, diameter, and height. Conducted within Reserve Forests, the field surveys aimed to gather detailed insights into the forest ecosystem dynamics and biodiversity, crucial for informed conservation and management strategies. Field data collection occurred during February, chosen for its favorable weather conditions with minimal disruptions from wind or rain, ensuring accurate and reliable data acquisition.

The forest survey in Meghalaya was not limited to basic vegetation data collection but also involved additional sampling efforts to identify tree species through leaf samples. This meticulous approach enhances the accuracy and comprehensiveness of the survey findings, providing valuable information for ecosystem monitoring and management. Furthermore, the collected data served as the foundation for estimating critical parameters such as aboveground biomass, belowground biomass, and soil carbon stocks, utilizing established allometric equations and conversion factors. These estimates play a crucial role in assessing the carbon sequestration potential of forest ecosystems and contribute to the validation of remote sensing-based analyses, enhancing the precision and reliability of ecological monitoring efforts in the region.



## CHAPTER 4 IN-HOUSE PROJECTS

### 1. Project name: Saffron cultivation project in Northeast India during the year 2023-2024

**Implementing Site:** Arunachal Pradesh (West Kameng, Shi- Yomi, West Kameng), Meghalaya (East Khasi Hills District, Eastern-West Khasi Hills District), Sikkim (East District, Geyzing), Mizoram ( Serchhip).

**Implementing Agency:** NECTAR & Arunachal State Rural Livelihood Mission, Directorate of Horticulture, Govt. of Arunachal Pradesh; Bethany Society, Krishi Vigyan Kendra, Meghalaya Basin Development Authority, Directorate of Horticulture, Govt. of Meghalaya; Mizoram Science, Technology & Innovation Council (MISTIC), Mizoram and Sikkim state council of Science and Technology (SSCST).

#### Objectives:

- To promote scientific saffron cultivation in North-East India as a high value crop thereby meeting its increased demand
- To conduct mass cultivation in potential sites based on previous experience(s).
- To create livelihood among the saffron farming community through its vast potential.
- To develop standard practices for its cultivation that would suit the growing conditions thereby following such practices in other areas with similar conditions.
- To provide proper market linkage of NE Saffron with proper branding and packaging

#### Deliverables and outcomes:

The Saffron Cultivation Project aims to harness the agricultural potential of the Northeast by introducing saffron cultivation as a sustainable and lucrative venture for farmers and entrepreneurs. The saffron Cultivation sites were identified after a detailed survey of parameters like altitude, soil, rainfall etc was carried out following remote sensing and GIS technologies using standard reference from Kashmir. Complete assessment related to soil analyses, flowering yield, corm survival rate and multiplication was carried out for the year 2022-2023. Positive outcome from pilot cultivation paved a way to carry forward the project on a larger scale for the year 2023-2024.

A total of 27 quintals of saffron corms were procured from the Pampore Saffron Farmers Producer Company Ltd, Kashmir, and distributed to different cultivation sites across the Northeastern states of Arunachal Pradesh, Sikkim, Meghalaya, and Mizoram. Currently, large scale cultivation is ongoing in two locations which are Menchukha in Arunachal Pradesh and Yuksom in Sikkim. with approximately 10 Q of saffron corms in both the site and continuation of pilot cultivation in medium potential sites to further validate site suitability, such as North Venleiphei



in Mizoram in collaboration with MISTIC, Sajong and Phengla in Sikkim in collaboration with SSCST; Dirang and Shergaon in Arunachal Pradesh in collaboration with Directorate of Horticulture, Govt. of Arunachal Pradesh and ASrLM.

In Meghalaya, few locations have shown potential in both East as well as West Khasi hill districts. Currently, Krishi Vigyan Kendra and Experimental Research Station in Upper Shillong, Bethany society in Umpling, Wellsprings Social service society in Mairang, and 5 individual farmers from Laitkor, Nongshillong, Jongsha, Nongkrem and Thangshning are engaged in Saffron cultivation in collaboration with NECTAR. Many other activities were conducted by NECTAR, before the actual plantation an awareness cum farmers mobilization program was conducted by NECTAR and importance of saffron and its “Package of practices” were explained to the farmers.

**Direct/Indirect Beneficiaries:** Arunachal Pradesh: 46, Meghalaya: 15, Sikkim: 22





*Fig: Saffron cultivation project in NER during different stages of implementation*

## 2. Project Name: Community Radio for Rural Empowerment and Development in Mawkynrew, Meghalaya

Implementing Site: East Khasi Hills, Mawkynrew, Meghalaya

### Objectives:

- Community radio is a short-range, not-for-profit radio station or channel that caters for the information needs of people living in a particular locality, in the languages and formats that are most adapted to the local context.
- Community Radio is intended to bring about social and economic development.
- The focus is to highlight relevant social issues, sharing the latest information with the community, providing a platform to the community to express their opinions and problems and to provide a platform to explore their own creative potentials.
- There are varieties of programs that can be developed and aired on Community Radio addressing some of the following aspects like providing access to information to villagers, creating radio enabled literacy programs, providing a platform to students and the community at large to exploit the potential of this creative



- media, social development of the area by focusing on relevant social issues, creating programs on Health Care, Counselling, Vocational Training

#### Deliverables and outcomes:

- NECTAR has launched a Community Radio Station (CRS) named as “**Mawkynrew 89.60 FM Community Radio**” at Jongksha village, Mawkynrew Block, East Khasi Hills, Meghalaya.
- The CRS will help in promoting Agriculture, Rural Livelihood & Community Development benefiting more than 100 isolated villages with a population of approximately 35,000 people.
- It is the first Community Radio Station in Meghalaya. The proposed programs are focused on issues related to education, health, environment, agriculture, local folk, art, culture, traditional knowledge, rural and community development.
- It will also encourage the voice of the disadvantaged group by broadcasting programs related to problems and limitations, issues etc, promote the cultural perspectives and interests of the minority groups and also popularize the tradition of Indigenous rural peoples with improved social participation and improved education and knowledge of self-employment.

**Direct/Indirect Beneficiaries:** The initiative is currently providing employment to 3 persons from the local ST community as direct employment benefits and also indirect benefits to the residents of the surrounding adjoining areas through radio outreach service.



*Fig: Mawkynrew 89.60 FM Community Radio*



### 3. Project Name: Operation and maintenance of standalone solar dehydrators

Implementing Site : Meghalaya – West Jaintia Hills and Ri Bhoi, Nagaland – Peren and Wokha,  
Mizoram – Khawzawl

The North Eastern region is blessed with a diverse range of horticultural and agricultural crops of immense quality. Drying is one area of importance where the usual practice is open sun drying which is not only time consuming but also poses a threat to food safety, quality and hygiene. Dehydration is much more effective process than sun drying. There have been tremendous advancements in drying technologies over the years, substituting the usual traditional method. Solar dehydrators play a pivotal role in enhancing agricultural productivity by providing a reliable and energy-efficient means of drying produce. The use of solar energy not only reduces dependency on conventional energy sources but also contributes to minimizing the environmental impact associated with traditional drying methods. With the above assessment, the most suitable technology was scouted and accordingly concluded with the installation of the Standalone solar dehydrators which offers added advantage where the drying of material is through solar energy and the fans and blowers also capitalizing on the solar energy fed by system panels, batteries and the hybrid inverter. These units can also run through electricity in cases where there is a lack of sunlight or during rainy season, a weather condition that is common in North East India. NECTAR ensures its operation, maintenance and extension of the applicability of the standalone solar dehydrators to the needy beneficiaries.



*Fig: Drying operation of turmeric at West Jaintia Hills, Meghalaya*

### Objectives:

- Designing the system to maximize the use of solar energy for dehydration while minimizing energy loss.
- Developing a system that is affordable and accessible for small-scale farmers or home use
- Designing the system to maximize the use of solar energy for dehydration while minimizing energy loss.
- Developing a system that is affordable and accessible for small-scale farmers or home use.
- Ensuring the dehydrator can handle a variety of food products, such as fruits, vegetables, and spices.
- Implementing safety features to prevent contamination and ensure the quality of dehydrated products

### Deliverables and outcomes:

- Solar dehydrators are an excellent choice for individuals or communities seeking an eco-friendly and cost-effective way to preserve seasonal produce and extend the shelf life of various foods.
- By harnessing the power of the sun, these devices provide a sustainable solution for food preservation. The benefits extended beyond economics.
- These dehydrators of 15 Nos were installed at various locations in Meghalaya, Nagaland and Mizoram which has supplemented the farmers with the production of dried products while ensuring safety and quality.
- Products emerging from these dehydrators so far include Lakadong turmeric, ginger, jackfruit seeds, chilli, bamboo shoot and gooseberry.

**Direct/Indirect Beneficiaries:** Mizoram: 7 , Meghalaya: 253 , Nagaland: 800

### 4. Project Name: NECTAR Mustard and Honey Mission for the year 2023-2024

**Implementing Site:** Assam (Udalguri, Darrang, Dhemaji, Lakhimpur, Dibrugarh, Baksa), Arunachal Pradesh: Papumpare District), Nagaland (Phek district), Meghalaya (Ri-Bhoi district), Manipur (Senapati district)

**Objectives:** NECTAR has launched a mission mode project to implement various activities of scientific beekeeping in North East Region in 2022-2023. The mission mode implementation is initiated upon successful pilot projects and continuous support for NBHM in Nagaland and other parts of NER. NECTAR has established the honey testing laboratory at Dimapur having been inaugurated by the Hon'ble Union Minister of Agriculture & Farmers' Welfare, Shri Narendra Singh Tomar on 27th June 2022.

**Deliverables and outcomes:** During 2022-23, a significant honeybee rearing activity started, wherein the large-scale Bee Colonies were established to rear in foraging over Mustard cultivated zones. More than 2000 bee colonies were implemented in clusters during the season in few potential districts of North East India.

- About 3 tons of Honey were produced in the process from these colonies during the season. To ensure the smooth operation of the project, NECTAR has empanelled Implementing Agencies, and the sites are being taken care by skilled and semi-skilled Beekeepers. For regular monitoring and reporting, a mobile application has been developed by NECTAR where real time information is being gathered from time to time.
- During 2023-24, NECTAR has focussed mainly on capacity buildings and have organised many online remote coaching sessions to create awareness among the stakeholders on various diseases and bee-management during lean season.
- NECTAR has also organised two batches of hands-on trainings for the bee-farmers of the region during 2023-24.
- A 4-day training program on Beekeeping and its Value Addition at Biswanath Chariali, Assam was arranged by NECTAR under Dr. Lakshmi Rao, Advisor to the Governor of Uttarakhand on Beekeeping.
- Another 5-day training program on Scientific Beekeeping and Value Addition at RRTC Umran, Meghalaya was arranged by NECTAR under Mr. Jan-Arie van Berkum, a consultant on Beekeeping from PUM, Netherlands.
- NECTAR has also organised a stakeholders meet at its headquarter in Shillong with all the suppliers and beekeepers to discuss and solve the ongoing problems faced by the farmers while implementation of the NECTAR Honey mission.
- A total of 34 trainees from across the North East have attended the above training programs and it is expected to give a huge boost in the yield of the beekeepers who have successfully completed the trainings.







### Mapping of Flood prone areas of Assam: A pilot study in Dhubri and Majuli districts

The mapping work was taken up by NECTAR internal team with the approval of Competent Authority keeping in view of the growing concern over repetitive loss of life and property in the districts of Assam due to frequent flooding. The activities are taken up based on open-source satellite and secondary information available and using Geospatial Technology for overall objectives such as disaster risk reduction and resilience building over the population affected by flooding in the districts.

#### Objectives:

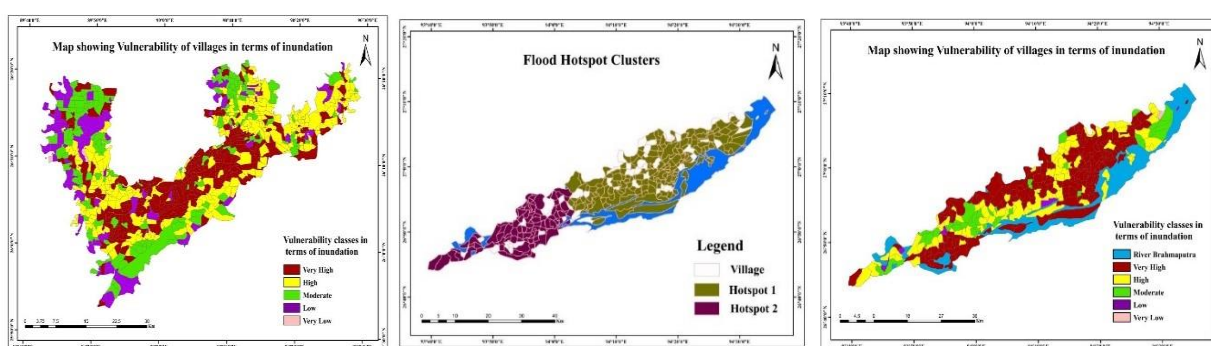
- Mapping of flood affected and flood prone areas using Remote Sensing-GIS and UAV Technology.
- Flood impact assessment and vulnerability assessment through flood risk mapping.
- Enhance resilience of communities through awareness, education and skill development and capacity building.
- Promote appropriate technology for raising flood resilient infrastructure.
- Provide innovative inputs for sustainable flood and erosion management.

#### Deliverables and Outcomes:

- For Dhubri out of 847 villages in the district, 291 villages are under very high vulnerability class, 295 are under high vulnerability class, 161 were found be moderately vulnerable, 97 to be low vulnerable and 3 under very low vulnerability class.

- For Majuli, out of 321 villages in the district, 168 villages are under very high vulnerability class, 90 are under high vulnerability class, 37 were found be moderately vulnerable, 5 to be low vulnerable and 1 under very low vulnerability class.

The study also highlighted the change of wetland boundaries over last 50 years (since 1972) in the districts and estimated population (Census 2011) affected with high vulnerability is of 1.36 lakh and 4.18 lakh in Majuli and Dhubri respectively. The validation the above analysis shall be done in the upcoming flood season.



*Fig: Flood hotspot clusters in Assam mapped under the project*

## 5. Upgradation of IT Infrastructure in NECTAR, Shillong office and NECTAR, Bio Tech Park, Guwahati office.

The recent infrastructure upgrade at NECTAR Shillong and Bio Tech Park, Guwahati, has seen the successful installation of a new server room in the new building, equipped with the latest switches and fiber cables. This project aimed to enhance LAN connectivity to all desktops and laptops, along with robust WiFi connections throughout the facility. The new server room was designed with state-of-the-art equipment to ensure optimal performance and reliability.





*Fig: Key IT systems and conference hall installation at NECTAR offices*

## 6. E-Office Implementation for NECTAR

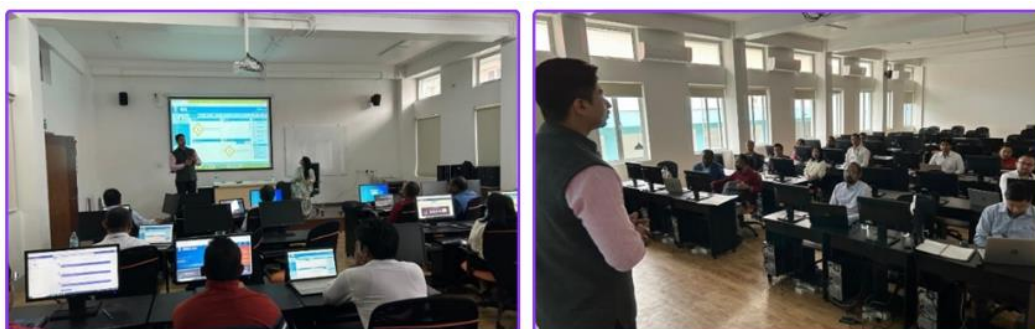
NECTAR has rolled out and implemented an e-Office across its offices at Shillong, Delhi, Guwahati and Agartala.

Training was imparted by Resource Person from e-Office Project Division NIC Delhi on the 15<sup>th</sup> and 16<sup>th</sup> May 2023 at NECTAR's Delhi Office and on 24<sup>th</sup>, 25<sup>th</sup> and 26<sup>th</sup> May 2023 at Shillong.

Since July 2023, usage of Physical File has been discontinued and currently all file movement are being carried out through electronic mode via e-Office as directed by Department of Science and Technology, Government of India.

Since then, it is observed that there is reduction of time in decision making by the senior officials and competent authority, enable Officers to work remotely, reduce paper usage, enhancing productivity and collaboration in modern workplaces.

So far, 409 files have been created in e-Office.



*Fig: e-Office Training conducted by e-Office Project Division, NIC Delhi for NECTAR staff*

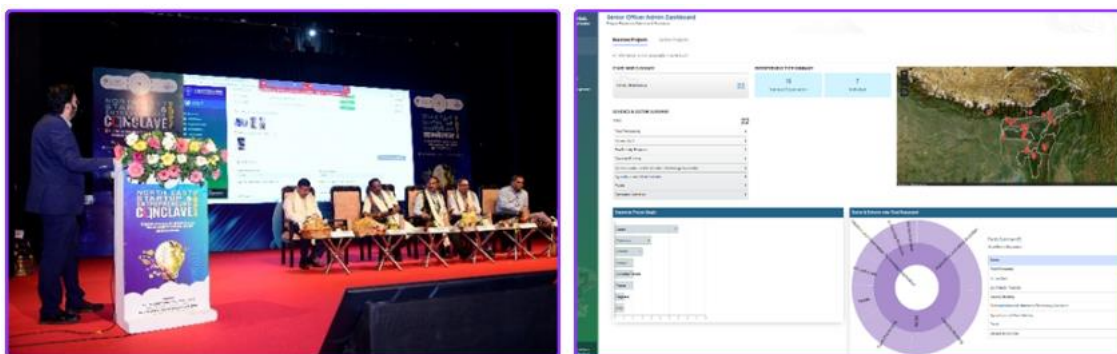


## 7. Development of Project Information Management System (PIMS)

PIMS is a comprehensive Web-based application used for monitoring and evaluating projects supported by NECTAR, implemented by various stakeholders in the North East Regions.

It will help project officers and teams to manage project activities, schedules, budgets and communications effectively with the project Implementer.

This system was launched during the Northeast Startup & Entrepreneurs Conclave 2024 held in Guwahati on the 27<sup>th</sup> and 28<sup>th</sup> March 2024.



*Fig: Launch of PIMS during NE startup and entrepreneur conclave at Guwahati*

## CHAPTER 5 NECTAR GRANT-IN-AID PROJECTS

During the financial year 2023-2024, NECTAR had extended grant-in-aid financial support to various agencies and beneficiaries under its TOSS and BAANS Scheme after careful consideration by Project Assessment Committee spanning various sectors under its three primary divisions: livelihoods, communications, and geospatial divisions some of which have been briefly described in the following sections based on their progress.

### ❖ Project Name: Setting up of a Tea Processing Unit in Mizoram.

The villagers of the Leisenzo village in Mizoram have been traditionally collecting tea leaves from its century-old jungles and drying them to make tea. However, without modern machinery and equipment, the villagers could not make much profit. Also, huge amount of tea leaves go wasted because of the lack of driers among the villagers. Trying to provide a solution to the people of Leisenzo, NECTAR has supported M/s Eco Far to set up a tea processing unit at Leisenzo village of Champhai district of Mizoram. The tea processing unit will be equipped with all modern machineries like solar dryer, electric dryer, tea roller machine, tea branch slicers, and weighing scales. The project has also been able to get a space of approx. 1500 sq. ft at Zoram Mega Food Park funded from the Ministry of Food Processing, Government of India, for operations like storing, packaging, and labelling.



❖ **Project Name: Setting up Pre-Processing units for horticultural and medicinal plant produces by Dibang Farmers' Producers Cooperative Society Ltd. at Anini, Dibang Valley, Arunachal Pradesh.**

This unit at Anini supported by NECTAR with a grant of Rs. 25 lakhs is at present fully operational with the processing of kiwi and other medicinal plants. The unit has produced Kiwi jam, Squash, Dried kiwi from the available Kiwi during the season along with many other products from the medicinal herbs available there.

Examples include Dehydrated Water Dropwort Leaf Powder and Oenanthe Javanica which helps in curing Jaundice, High blood pressure, abdominal pain and hepatitis. Others include Thambai leaf powder which have antimicrobial and antifungal properties and is known to increase appetite, Dehydrated Oxaliscorniculata (Creeping woodsorrel) Powder which can be used as dietary foods, dehydrated Centella Asiatica (Gotu kola) Powder which can heal wounds, cure skin diseases, stomach problems and many more. About 9-10 people including women of the locality are directly employed in the unit at present.





❖ **Project Name: Infrastructure Up Gradation of textile and fashion designing, training cum production centres by Ramakrishna Mission Ashrama, Sohra, Meghalaya**

This project with a sanctioned grant of Rs. 25 lakhs was taken up with the aim of imparting employable skills to women from vulnerable backgrounds in weaving and tailoring to improve the quality and upscale the production capacity of the centre and the new industrial machinery has led way to manufacturing uniforms for school students of the Ashram. As for the weaving/textile section, the existing looms were painted, lubricated and repaired to optimize the production capacity. Needful accessories were replaced for hassle free weaving. The gears of looms were technically checked and polished for better results in the speed and quality of the handlooms and this centre has created employment for 16 weavers weaving acrylic wool merchandise along with silk and cotton sarees, eri stoles, blended stoles etc. which are displayed in the showroom in the campus of RKM which are a source of attraction for tourists and exhibited as souvenirs of Meghalaya. The expanded infrastructure of the tailoring section has employed 25-27 women in the exclusive set of new machinery procured. Along with these, the Generator and IT support has significantly supported to maintain the consistent production activity and the logistic data of textile and fashion designing centres respectively.

❖ **Project Name: Establishment of Eri Spun Mill at Bhoirymbong, Meghalaya**

Situated in Bhoirymbong, Meghalaya, a project supported by a grant of Rs. 25 lakhs is set to revolutionize the silk industry, particularly focusing on Ahimsa Eri Silk from the North East. This initiative stands as a beacon for the region's rich heritage and cultural significance, aiming to project Ahimsa Eri Silk on the global stage. With a strategic vision to bridge the gap between various sectors of the industry, including cocoon, yarn, and fabric, the project seeks to establish sustainability and promote economic growth.





At its core, this project envisions tapping into the substantial raw cocoon production worth 108 crores, while simultaneously addressing the local demand for 123.5 MT of yarn. By enhancing production across all sectors of the industry, it aims to meet both domestic needs and expand into global markets. Moreover, the project emphasizes the generation of employment opportunities, providing livelihoods to local communities and contributing to socio-economic development. Through these concerted efforts, the initiative not only aims to boost the silk industry but also to preserve and celebrate the cultural heritage of the North East, positioning Ahimsa Eri Silk as a symbol of sustainable luxury on the international stage.





❖ **Project Name: Replacing Wheat flour by Joha Rice Flour in Bakery Industry in Assam.**

With a sanctioned grant of Rs. 25 lakhs, a pioneering project has been launched to revolutionize the bakery industry by replacing wheat flour with Joha rice flour. Initiated in the later part of the financial year, this project focuses on producing Joha rice-based cookies, aiming to enhance the health benefits for consumers. Joha rice, renowned for its nutritional value and aromatic properties, offers a healthier alternative to traditional wheat flour. By incorporating Joha rice flour into bakery products, the project not only promotes healthier dietary choices but also supports local agriculture, particularly the cultivation of Joha rice, which is indigenous to the region.



The production of Joha rice-based cookies represents a significant step towards addressing dietary concerns and promoting healthier lifestyles. These cookies offer consumers a tasty yet nutritious snack option, enriched with the goodness of Joha rice. By replacing wheat flour with Joha rice flour, the project not only caters to health-conscious consumers but also contributes to the diversification of products in the bakery industry. Additionally, this initiative has the potential to stimulate the local economy by creating demand for Joha rice, thereby



supporting farmers and promoting sustainable agricultural practices. Overall, this project holds promise for enhancing consumer health and promoting the culinary heritage of the region through innovative bakery products.

❖ **Project Name: Setting up of a King Chilli Processing Unit in Manipur.**

The project, supported by NECTAR, and is being implemented by M/s Spring Charitable Trust of Manipur aims to set up a unit for processing of King Chilli produced in Noney district, Manipur. The promoter has been supported by NECTAR to install all the required machinery/equipment like solar dryer, tray dryer, grinders, slicers, hydro machines, digital weighing scales, filing machine and packaging machine. The construction of the processing unit and procurement of machinery has begun. Once the unit is ready with all the machines installed, it is expected to hugely benefit the king chili farmers of the region and give a boost to its market value. The project is also expected to provide employment to local youths of the region.



❖ **Project Name: Building safe and affordable bamboo-based bio-composite boats**

The project, being implemented by a firm M/s Akvotransiro Tech Pvt Ltd. in Guwahati, Assam aims to build boats out of bamboo-based bio-composite materials. With the gants and bamboo composite boards received from NECTAR, Akvotransiro has been able to build 6 number of different type of boats till now, which are - 3shallow water boats of 8-PAX capacity, two fishing canoes of 2 and 4-PAX capacity and a trimaran of 12-18 PAX capacity. The promoter has entered into an agreement with IIT Guwahati for testing and validation of the manufactured boats. The project is also able to provide direct employment to two local youths. The project is expected to increase the safety of its users in comparison to other commercially available boats in Assam and other parts of NE.



❖ **Project Name: Empowerment of rural farmers through technology intervention on Mustard by Unique Trust, Imphal**

The "Empowerment of Rural Farmers through Technology Intervention on Mustard" project by Unique Trust, Imphal, is set to revolutionize agriculture in Kyamgei Mayai Leikai, Imphal East District, Manipur. With the procurement of necessary machinery and a target production of 250 liters of mustard oil per day, the project focuses on training approximately 300 local farmers in post-harvesting techniques and marketing strategies. This training aims to enhance yield quality and efficiency, ensuring that farmers can maximize their productivity and income. Strategic marketing tie-ups have been established to provide farmers with direct access to larger markets, reducing reliance on middlemen and securing stable economic benefits.

The project emphasizes the use of state-of-the-art, energy-efficient machinery to boost production capacity and quality while promoting sustainable farming practices. This initiative is expected to significantly improve the economic stability of participating farmers, benefiting the broader community through better livelihoods, education opportunities, and health outcomes. Unique Trust will continuously monitor and refine the project to ensure it remains responsive to the farmers' needs and market dynamics. Overall, this project aims to elevate the mustard oil industry in the region, fostering a stronger and more resilient rural community.



❖ **Project Name: Large scale production of Eco-friendly paper cups to mitigate plastic packaging.**

The "Large scale production of Eco-friendly paper cups to mitigate plastic packaging" project, backed by a budgetary assistance of Rs. 25 lakhs, is a significant step towards addressing the pressing issue of plastic pollution. This initiative is centered around the production and distribution of eco-friendly paper cups across the state, with a primary objective of reducing the reliance on plastic packaging. By replacing plastic cups with environmentally sustainable alternatives, the project aims to mitigate the adverse environmental impacts associated with plastic waste, such as pollution and harm to wildlife. Furthermore, the widespread distribution of these eco-friendly paper cups is expected to foster a culture of environmental responsibility and promote sustainable consumption habits among the populace.





A key focus of this project is not only on environmental conservation but also on socio-economic development. By establishing large-scale production facilities for eco-friendly paper cups, the project creates significant livelihood opportunities for a substantial number of individuals in and around Aizawl. Through reliable commercialization and distribution channels, this initiative not only provides employment but also stimulates local economic growth. Additionally, by promoting the use of eco-friendly alternatives, the project aligns with global efforts to combat climate change and promote sustainable development. Overall, the "Large scale production of Eco-friendly paper cups" project represents a holistic approach to addressing environmental challenges while simultaneously fostering socio-economic progress in the region.

### ❖ **Setting up of Remote Pilot Training Organisation (RPTO) in Guwahati**

NECTAR's project to establish a Remote Pilot Training Organization (RPTO) within the campus of JN College in Boko, Guwahati, marks a significant milestone in the advancement of drone technology in the North East region. Following recommendations from the Public Accounts Committee (PAC) and approval from the 7th Finance Commission (FC), as well as subsequent endorsement from the Executive Committee (EC) and General Council (GC), the project gained momentum. Adhering to protocols mandated by the Directorate General of Civil Aviation (DGCA), NECTAR successfully completed the setup of the RPTO, which includes essential infrastructure such as drone flying grounds, simulation software and hardware, computers, and trainer drones.

After meticulous planning and execution, the RPTO facility underwent inspection by DGCA authorities on 3rd April 2024, resulting in the sanctioning of RPTO operation. This achievement signifies a major step forward in enhancing the region's capacity for drone technology training and utilization. The RPTO is poised to offer a comprehensive 5-day training program for aspiring drone pilots in the North East, enabling them to obtain DGCA authorized licenses known as Remote Pilot Certificates (RPCs). This initiative not only opens new avenues for students and unemployed youth in the region but also addresses the growing demand for skilled professionals in the emerging field of drone technology.



The establishment of the RPTO holds immense potential for economic growth and employment generation in the North East. With the increasing adoption of drones in various sectors such as land mapping, agriculture spraying, and other drone applications, trained drone pilots are in high demand. By providing opportunities for skill development and professional certification, the RPTO empowers individuals to pursue careers as drone pilots, thereby contributing to the region's socio-economic development and providing a pathway to sustainable livelihoods for the youth of the North East.

❖ **Project Name: Skill Pill - A mobile application for skill development courses in Assamese**

Skill Pill has launched a mobile application aimed at addressing the education and skill gap among rural youth in Assam. Based in Guwahati, Assam, this innovative project focuses on providing high-value skills such as digital marketing, graphic designing, and computer programming in Assamese, targeting students in grades 9-12. By offering detailed tutoring and pre-recorded online tuition, Skill Pill aims to empower rural youth, enhancing their employability, entrepreneurial capabilities, and personal growth. Recognizing the challenges faced by rural youth in accessing quality education and essential soft skills, the project endeavors to bridge these gaps by delivering courses in the local language, Assamese, thereby fostering a more inclusive and empowered community.

Through its efforts, Skill Pill seeks to unlock the potential of rural youth by equipping them with the necessary tools and education to succeed. The project not only aims to benefit a broad audience but also identifies specific indirect beneficiaries, including two men and two women, who stand to gain from enhanced skills and economic opportunities. By leveraging mobile technology and delivering education in Assamese, Skill Pill not only addresses educational deficiencies but also contributes to the economic growth and personal advancement of rural regions, serving as a testament to the transformative power of accessible education and skill development.



*Fig: Dashboard Launch of Skill Pill Application*

❖ **Project Name: Development of Aerostatic Drones for Forest Surveillance and Wildlife Monitoring**

NECTAR has supported the project under its Technology Outreach and Services Scheme (TOSS) scheme of NECTAR. The objective of the project is to provide a low-noise, mobile aerial observation platform to aid in conservation efforts in ecologically sensitive and protected zones. The drone has very high endurance of more than three hours to be afloat in air and gives live feed of the data. The drone is very light weight and unlike other drones can also be flown in tethered mode. However, traditional heavier-than-air drones, such as multirotor and fixed-wing UAVs, have limitations; primarily in their short endurance, potential to disturb wildlife and concerns over their safety. This is because conventional UAVs expend a significant portion of their onboard energy in lift generation. On the contrary, an aerostatic UAV derives a significant part of its lift from buoyancy and the rest using aerodynamics. Due to this, aerostatic UAVs require only a minute portion of their stored energy to stay afloat in the air. Most of their stored energy is utilized in manoeuvring and performing the mission objectives. Furthermore, depending on the application, they can stay aloft anywhere from hours to days. This makes aerostatic UAVs superior in terms of endurance compared to heavier-than-air UAVs. Currently the two prototypes are ready to be deployed in the field area and the discussion with forest officials in under process for the deployment purpose. The drone once made commercial will be a game changer in the field of UAV and surveillance. Two prototypes of the drone are ready for deployment and NECTAR is planning to deploy the drone at one of the forest areas in Meghalaya or Assam. This project will help in enhance the forest and wildlife monitoring in the North East India.



❖ **Project Name: Project Monitoring Dashboard for the Chief Executive Member of Bodoland Territorial Council**

The Chief Executive Member (CEM) of the Bodoland Territorial Council (BTC) has launched a Project Monitoring Dashboard, developed by M/S Digitaloma Private Limited and funded by NECTAR to boost transparency and efficiency in project management across Bodoland, Assam. This innovative dashboard, accessible at <https://sopd.btrcemdashboard.co.in/>, provides real-time data to the public and stakeholders, marking a significant technological advancement. A key outcome is the successful upload of detailed Annual Operation Planning (AOP) reports for 2023-24, covering various projects and schemes, ensuring readily



accessible and current data for analysis. Collaboration with 40 BTC departments has been crucial, with each department designating a user to update real-time data, enhancing the accuracy and timeliness of project information on the dashboard.

The robust real-time updating process ensures the most recent information is always available, significantly improving the Council's ability to monitor projects and make informed decisions. Successful user training sessions, especially with the Chief Heads of Departments (CHDs), have ensured key personnel are adept at using the portal and maintaining accurate data updates. Overall, the BTR CEM Dashboard represents a major step forward in project management and governance for the BTC, leveraging modern technology and fostering inter-departmental collaboration to enhance the efficiency and transparency of public administration in the region.



Fig: CEM Dashboard

## CHAPTER 6 TRAINING AND CAPACITY BUILDING

### 1. Promoting Techno-preneurship in NER by Entrepreneurship Development Institute of India

**Objective:** Implementation of a project on Promoting Techno-preneurship (Technology based enterprises) in collaboration with Entrepreneurship Development Institute of India (EDII), Ahmedabad for the first phase has been successfully completed on 3rd November 2022, with operations in the states of Assam, Arunachal Pradesh, Nagaland & Tripura. A proposal received from EDII for the second phase of trainings comprising of 2 Entrepreneurship Awareness Programme (EAP) and 4 Entrepreneurship Development Programme (EDP), has been approved with operations in Manipur and Mizoram. Total number of beneficiaries is EAP- 119, EDP- 103. Out of 103 trainees trained under EDPs, 5 trainees from Mizoram have started implementing the learnings acquired during their training programmes conducted at various location. There were a total of 220 participants, with females outnumbering males (170 vs. 50), and the majority belonged to the Scheduled Tribe (ST) category with 148 participants.

**Location:** Manipur and Mizoram



### 2. Training cum Production of Bamboo Products by North East Cane and Bamboo Development Council (NECBDC)

**Objective:** Formerly known as CBTC, NECBDC was incorporated with the objective of organizing the hitherto untapped bamboo sector of NE India which is a significant occupant of its topography, culture, and customary practices since time immemorial. NECBDC involves its creativity and resource in talent scouting, training, technology sourcing, market linkage for giving a new age thrust to the age-old bamboo sector. The proposed training would include entrepreneurship-based training and production of bamboo products like serving tray, cane and bamboo box, coil based products, packaging items. Three training programmes have been completed with the

participation of 73 beneficiaries. Bamboo products like pen stands (229 nos.), cane and bamboo baskets (100 nos.), lamp shades (27 nos.), tea and tiffin boxes (14 nos.), trays (29 nos.), dustbin (17 nos.), bamboo spoons (20 nos.), bottle holder (2 nos.) and cane stool (1 nos.) have been produced. A total of 73 participants were recorded, with males (59) being more numerous than females (14), and the majority belonging to the ST category (54).

**Location:** Byrnihat, Assam



### 3. Technology intervention and upgradation in Biodegradable Yoga Mat production

**Objective:** During the period of April and May, an extensive training program lasting 45 days was initiated under Binanda Kalita, who previously held the position of Training Head at Antaran—a project supported by Tata Trust. This training programme was conducted in collaboration with NECTAR partner Implementing Agency Simang Collectives pvt ltd. This program was designed to empower a cohort of 11 women with the skills needed to become proficient Loom trainers. Subsequently, these trained women have taken the initiative to organize regular classes. In these classes, they are imparting their newly acquired knowledge to women in the village, effectively integrating them into the project's activities. There were a total of 22 participants, all who were females and from SC category.

**Location:** Guwahati, Assam





#### 4. Apiculture and Integrated Farming in Sikkim Implemented by Sikkim State Council of Science and Technology, Govt. of Sikkim

**Objective:** The main objectives of the training programme was identification of potential trainees, providing technical and hands on training on beekeeping, distribution of bee box, bee colonies and other associated tools, for production of bee colonies and honey production for sustainable rural livelihoods of Sikkimese Farmers. 25 Farmers were attended during the training program. Trainees were inclusive of drop out students, progressive farmers and educated unemployed youths of rural areas of Rishi, GPU Block. There were a total of 25 participants, all who from ST category.

**Location:** Sikkim



#### 5. Bamboo Weaving and Handicraft Training Implemented by Dream Alive Foundation, Mizoram Lunglei

**Objective:** The project aims at imparting bamboo weaving/ Handicraft Training to youths by the older artisans to pass on the skills to the young generations to promote livelihoods generation activities for the unemployment youths. 50 Trainees were trained by the Resource Person from Zogam Bamboo Works from Dimapur Nagaland. After the training some of the trainees have started doing these handicraft activities. There were a total of 25 participants, all who were females and from ST category.

**Location:** Lunglei, Mizoram; **Participant Details:** Male – 15; Female – 10; ST – 25



#### 6. Training activities for bamboo and allied areas by BCDI Tripura

A number of training activities were undertaken at the Bamboo and Cane Development Institute, Tripura for imparting hands-on skill and product development training to artisans across various areas of processing and value addition of bamboo and related items such as bamboo propagation and nursery management, bamboo treatment processing, bamboo bottle and basketry products and various other bamboo handicrafts, bamboo shoot processing, cookies and pickle making, etc. A total of 19 different training and skill development programmes were conducted in collaboration with various agencies such as Odisha Bamboo Development Agency (OBDA), Directorate of Commerce & Industries Govt. of Meghalaya, Forest Department Govt. of Tripura, NABARD Tripura Regional Office and Tripura Bamboo Mission, respectively in which about 442 individuals from various backgrounds out of whom majority were females, were directly benefitted.







## 7. Training activities in Geospatial and allied areas by Geospatial Division at Guwahati, Assam

- i. **Training on basics of Remote Sensing and GIS**- One batch of ten days training program on basics of Remote Sensing and GIS was organized at Skill Development Centre and Geospatial Lab, NECTAR, Khanapara for a total of 17 college students and working professionals. The training program was aimed at giving the basic knowledge about theoretical aspects of Remote sensing and GIS and laid more emphasis on practical knowledge. The training program covered available free sources of imageries such as bhoonidhi, USGS etc. and free boundaries available on Survey of India portal. The participants learned the use of QGIS, ArcGIS and Erdas Imagine software. At the end of the training program, a three-day case study was given to participants to get the learning outcome of the project.
- ii. **Training on Drone Data Acquisition and Processing (DDAP)** – One batches of five days training program on Drone Data Acquisition and Processing was organized at Skill Development Centre and Geospatial Lab, NECTAR, Khanapara for a total of 13 college students and working professionals. The training program focused on giving insights about the process of drone data acquisition, processing of drone data and demonstration of drone flying. The participants gained knowledge about the droner rules, digital sky portal, rules and regulation related to drone flying and different categories of drones. The participants were taken to Jawaharlal Nehru College, Boko where the drone data was acquired, and the participants processed that data. It gave them experience of working on actual data instead of dummy data.



- iii. **Training on Drone Awareness Training (DAT)** – Two batches of five days training program on Drone Awareness Training (DAT) were organized at Skill Development Centre and Geospatial Lab, NECTAR, Khanapara for the college students and working professionals with a total of 30 participants. This training was organized in collaboration with IHFC-IIT Delhi. It aimed at giving the participants knowledge about the hardware of the drone and assembly of the drones. The training program also gave experience of flying on simulator to give the experience of flying to participants. At the end of the training program the participants were able to assemble the drone and perform the basic coding for controlling the drone using the RC.



- iv. **Training on Drone Manufacturing and Assembly Technician in association with National Skill Development Council** – Two batches of training on drone manufacturing and assembly technician was organised in association with National Skill Development Council with a total of 40 students. The training programme was focused on teaching the participants about assembling the drone and hardware of the drone. The training was a comprehensive training providing complete training on drone hardware and drone manufacturing. The training program also aimed at motivating the students to open startups in the field of drone manufacturing.





- v. **Training on Drone Service Technician in association with National Skill Development Council under PMKVY 4.0** – One batch of training program on Training on Drone Service Technician in association with National Skill Development Council with a total of 16 participants. The training program aimed at providing the skills to the unemployed youth for the drone repairing. This training program ensured that the participants get in-depth knowledge on repairing the drone. It enhanced the skill of the youths in the drone sector and created more opportunities for them in the field of drone industry.

## CHAPTER 7 CONFERENCES AND EVENTS

### 1. Signing of MOU between NECTAR and various organisations

During FY 2023-24, NECTAR had undertaken signing of agreements and understandings with various organisations and institutes in order to further its activities towards successful implementation of various initiatives and projects in the NER which is listed as follows:

- MoU between ICAR-National Research Centre for Banana and NECTAR on 07.06.2023 as part of PM-Devine banana pseudostem project implementation in NER
- MoU between NECTAR and National Institute of Rural Development & Panchayati Raj, Hyderabad. 01.07.2023
- Umbrella MoU between NECTAR and National Bureau of Plant Genetic Resources (NBPGR) on 13.10.2023 as part of PM Devine Organic project implementation in NER
- MOU signed between MSDE and NECTAR for Implementation of special projects under PMKVY 4.0
- MoA between NECTAR & MSRLS for Implementation of special projects under PMKVY 4.0
- MoA between NECTAR & MFEC for Implementation of special projects under PMKVY 4.0
- MoU signing ceremony with RC Hobbytech for setting up Remote Pilot Training Organisation at JNC Boko, Assam
- MOU between NECTAR and Meghalaya State Rural Livelihoods Society, Govt of Meghalaya on 21<sup>th</sup> August 2023 as part of PM Devine Organic project implementation in NER
- MOU between NECTAR and Bioresources Development Centre, Govt of Meghalaya on 20<sup>th</sup> July 2023 as part of PM Devine Organic project implementation in NER
- MOA between NECTAR and Institute of Bioresources and Sustainable Development, Meghalaya
- MoU between NECTAR and Amrita Vishwa Vidyapeetham, Kerala for Research, development and validation of products for research, taking up joint programmes, possibility of academic collaboration, including joint courses to enhance the awareness and preparedness and carrying out joint R&D in the development of technology for NER.



- MoU between NECTAR and Kalinga Institute of Industrial Technology (KIIT) University, Bhubaneswar for IP Portfolio Management, Technology Transfer, and IP Commercialization activities, Joint industrial projects activity, Mobility of researchers and spinoff creation, Faculty development program and Facilitating Sponsored Research program funded by industry for industrial problem statements.
- Mou between NECTAR and Meghalaya Farmers Empowerment Commission" signed on 20th July 2023 for Promoting Apiculture in the North East Region.





## 2. India-Japan Symposium: AIST-INDIA DAILAB PIKNIKH SERIES 55 on 27.02.2024

NECTAR- Japan (AIST), Joint Symposium on 27th of February 2024 for PIKNIKH (Platform for Innovating Knowledge to International Know How) Series 55 on the topic "Nutraceutical Interventions for Stress, Aging and Cancer: Science and Technology to Product Development". It was a dynamic program that brought together esteemed Japanese researchers, institutions from North East and local experts to deliver into the latest insights shaping the Science and Technology landscape. The collaborative event proved to be an enriching exchange of knowledge and ideas, fostering cross-cultural dialogue and innovation. The program featured a series of engaging discussions, presentations, and interactive sessions, where participants explored diverse topics ranging from Ashwagandha, Biolight-based screening system for nutraceuticals, Factors affecting human neurogenesis - learning from neural stem cell culture studies, Small and Smart live screening system for anti-Alzheimer compounds, and many other related and relevant topics. Esteemed speakers from Japan shared their expertise, offering unique profound insights, practices and innovations from their intensive research.





### 3. North East Start Up & Entrepreneurs' Conclave 2024

NECTAR hosted the 'North East Start Up & Entrepreneurs' Conclave 2024' at Srimanta Sankaradeva Kalakshetra, Guwahati on March 27-28, 2024 with the aim to display the vibrancy of the Northeast startup ecosystem, bringing together stakeholders to unite investment, innovation, and connectivity. The event, inaugurated by Prof. Abhay Karandikar, Secretary, Department of Science and Technology, Government of India was aimed to boost innovation and entrepreneurship in North East India, showcasing its startup ecosystem and encouraging investment and connectivity.

An exclusive Northeast India-only event bringing together delegates, including policymakers, investors, academia, funding agencies, successful startups and budding entrepreneurs, students and leaders from India's startup ecosystem, the event provided a unique opportunity to engage in thought-provoking discussions, learn from industry experts, and foster meaningful connections. Attendees include students, entrepreneurs, investors, and professionals, converging to address regional challenges and promote economic development. A number of stalls were also set up for the different entrepreneurs to display their various products. Technical sessions covered various topics such as technology diffusion, agriculture, flood mitigation, and ICT, technology development specific to the northeast, and the science-technology-heritage nexus in the region.

Highlights of the event included innovators, rural entrepreneurs, investors, leaders discover, connect, and prosper together. The expo also provided a platform for the exhibition of various innovative technology and products of/for NER and possible B2B and B2G and B2C interactions. The conclave provided a platform for networking, learning, and collaboration among stakeholders in the startup ecosystem. With objectives ranging from highlighting regional success stories to fostering investment opportunities and enhancing corporate governance practices, the event attracted 380 participants, including entrepreneurs, investors, policymakers, and students. Through panel discussions,



workshops, pitch sessions, and cultural programs, attendees gained valuable insights, forged meaningful connections, and explored avenues for future collaboration. The conclave culminated in a successful conclusion, laying the groundwork for continued growth and innovation in the Northeast startup landscape with a comprehensive white paper on emerging trends, solution designs and best practices in the Northeast startup ecosystem. Expo having 60 stalls were set up for display innovative technology and products of/for NER and possible B2B and B2G and B2C interactions.





*Fig: North East Start Up & Entrepreneurs' Conclave 2024*

NECTAR has been actively promoting innovative agricultural practices and socio-economic development in North East India through various workshops. These efforts focus on utilizing advanced technologies and sustainable methods to enhance productivity and livelihood opportunities in the region.

- NECTAR hosted a workshop at its Shillong office in collaboration with Casley India Pvt Ltd., focusing on the quantification and tasting of fruits through remote sensing technology. The workshop aimed to explore innovative approaches for fruit assessment and flavor analysis, emphasizing the integration of remote sensing techniques.
- One-Day Workshop on PMDevINE Scheme and NECTAR Impact: Symbiosis School of International Studies, in collaboration with NECTAR and ICSSR, conducted a workshop on the theme "Survey of PMDevINE Scheme and NECTAR: Impact on Livelihood in NE." Dr. Arun Kumar Sarma inaugurated the event online, highlighting PM-DevINE's role in rural employment. Dr. Sukalpa Chakrabarti presented survey findings, emphasizing socio-economic benefits.



- On June 20, 2023, the North East Centre for Technology Application and Reach (NECTAR) organized a pivotal meeting in Shillong focused on the "Honey Mission Mode Project." This gathering brought together a diverse group of stakeholders, including expert members and beekeeping beneficiaries from across North East India. The primary aim of the meeting was to discuss the progress, challenges, and future strategies of the Honey Mission, which is designed to boost beekeeping activities in the region. The initiative seeks to enhance livelihoods, promote sustainable agricultural practices, and increase honey production, contributing significantly to the region's economic development and ecological balance. The event provided a collaborative platform for sharing insights, experiences, and innovative approaches to further strengthen the beekeeping sector in North East India.
- NECTAR organized a crucial meeting in Shillong On June 20, 2023 to discuss the "PM-DevINE project - Value Chain on Utilization of Banana Pseudo-stem for Value Added Products." The meeting aimed to facilitate discussions for the project's successful implementation, focusing on transforming the often-discarded banana pseudo-stem into valuable products. Key stakeholders, including experts, industry representatives, and local beneficiaries, shared insights on optimizing the value chain, identifying markets, and addressing processing challenges. The project seeks to boost the local economy, enhance livelihood opportunities, and promote environmental sustainability. This meeting marked a significant step toward achieving these goals through collaborative efforts.





5. Dr Arun K Sarma, Director General and Dr Collin Z Renthlei, Advisor Technical attended 2-day Stakeholder conference on Promoting Apiculture in Northeastern Region organised by Meghalaya Farmers Empowerment Commission held at State Convention Centre, Shillong



6. **Participated in Global Sourcing Accra at Ghana from 30 and 31<sup>st</sup> Jan. 2024.** The multi-sector trade show, Global Sourcing Accra, concluded with resounding success at the Accra International Conference Centre. The event served as a pivotal platform for international sourcing and direct engagement with suppliers across Ghana and West Africa. The NECTAR's Pavilion stood out as a beacon of innovation and collaboration amidst the bustling trade show in Ghana, facilitating dynamic exchanges of ideas and fostering valuable partnerships. Under the esteemed guidance of the Indian High Commissioner, H.E. Mr. Manish Gupta, the inauguration ceremony heralded the dawn of a promising era characterized by enhanced global connections and the vibrant showcasing of India's diverse trade offerings. Throughout the duration of the event, a diverse array of visitors, entrepreneurs, and students thronged the stalls, engaging with the showcased products and expressing admiration for their innovative qualities. The enthusiastic reception underscored the potential for fruitful collaborations and knowledge exchanges between various government organizations and stakeholders, all aimed at nurturing the growth of the livelihood sector and fostering development across the boundaries.



7. Inauguration of NECTAR funded Language cum Multimedia lab on 1.3.2024 by Dy Chief Minister Meghalaya and Mrs Grace Mary Kharpuri local MDC at Pynursla Meghalaya



8. NECTAR organized Asharikandi Craft mela event on 2nd Nov 2023, in light of the SEED-DST funded project, “Improving the Sustainability of Traditional Terracotta and Pottery Business at Asharikandi” The event was graced by Chief Guest -Prof N.C. Talukdar, VC, ADU, Guwahati, Event chair, Dr. Manoranjan Mohanty Head AI Div, DST, GOI and guest of honour Sh. Dibakar Nath, DC Dhubri District.



9. On December 14, 2023, a comprehensive training program focusing on disaster response and emergency measures was successfully conducted in collaboration with the National Disaster Response Force (NDRF). The session saw active participation from 30 individuals, contributing to a valuable and informed discussion on enhancing preparedness and response strategies. The insights gained during this training are crucial for fostering a resilient and well-prepared community in the face of potential emergencies.





**10. Industrial visit from students from various Institutes:** More than 300 in 8 batches students from MTech computer science 2<sup>nd</sup> and 4<sup>th</sup> semester visited Skill Development Centre and Geospatial Lab, Khanapara to gain the knowledge the current trends in field of Remote Sensing, GIS and Drone Technology. The students were given an overview on different application areas of Remote Sensing and GIS technology such as agriculture, town planning, water resources, flood mapping and simulation, forestry etc. Students were also given a session on drone simulators to gain experience of drone flying. Demonstration on actual drone flying was also given to the students by the drone pilots of NECTAR. They were also given the knowledge about the different types of drones and their categories.



**11. Internship by students at University of Science and Technology (USTM), Meghalaya:** Five students from Masters of Geography, Department of Earth Science, University of Science and Technology, Meghalaya joined NECTAR for one month internship program. The students were trained in real time projects related to crop mapping on satellite data using Remote Sensing and GIS Technology. The students were able to successfully generate GP level crop map for Sorghum, Mustard and Maize crops for one district each with an accuracy of 85%.



**12. Job fair for the students of North East:** A two-day job fair was organized for the students of North East from backgrounds such as computer science, Geoinformatics, geography and geology in association with GarudaUAV. All the universities and students of North East who have taken training from NECTAR and NIT Meghalaya were invited in the job fair. A total of 36 students participated who were initially assessed on basic aptitude written test, followed by first round of interview. 22 students were further shortlisted for the second round of interview for employment on various job positions.

**13. A Drone Simulation Competition in NE start-up and Entrepreneurs conclave 2024:** The North East Start-up and Entrepreneurs Conclave featured a drone simulation competition that attracted over 50 participants of all ages. Held at the NECTAR Pavilion of Shrimanta Shankar Dev Kalakshetra on March 28, 2024, the competition utilized



**14. sophisticated drone simulation software to provide a realistic flying experience.** Participants were briefed on the software's features and DGCA Drone Rules before showcasing their skills in take-off, precise manoeuvring, and landing. The competition highlighted the talent and enthusiasm for drone operations in the Northeast, promoting innovation and entrepreneurship in the region.



15. An exclusive placement drive was organized on 6<sup>th</sup> and 7<sup>th</sup> December 2023, for the students of North East in collaboration with Garuda UAV. A total of 36 participants actively participated in this unique opportunity to connect with a leading organization in the field of Unmanned Aerial Vehicles (UAVs).

16. Participation in an Exhibition during Science-20 under G-20 Presidency event on 3rd April 2023, at International Fair Ground, Hapania, Agartala. Hon'ble CM Tripura including Prof. Ashutosh Sharma, President, INSA Visited at stall.



16. Fundamental course in Computer literacy and employability for persons with visual impairment was inaugurated by DR Mazel Ampareen Lyngdoh on 16<sup>th</sup> May 2023. The project is being implemented by Bethany Society, Shillong.



17. Participated in the Exhibition during Mizoram state "Horticulture Fair, 2023" during 30<sup>th</sup> May to 2<sup>nd</sup> June 2023 at Aizawl. Deputy CM, Government of Mizoram including Dy Director Horticulture visited stall.





18.NECTAR with the support of DC (Handicrafts) participated in the HGH B2B from 4<sup>th</sup> to 7<sup>th</sup> July 2023 at Bombay Exhibition Centre, Mumbai to facilitate the artisans of different clusters showcasing their products. 10 craft persons, from across the North East states displayed products of different crafts such as Bamboo and Cane, Artistic textiles, Dry flower, Metal Jewellery, grass products and Handicrafts of North East.



19.Meeting of ABD, NBM and TBM resource persons at BCDI for development of Bamboo Value Chain in North East on 30<sup>th</sup> July 2023



20.Participated in Indian Crafts Bazar on the sidelines of the G20 Leaders summit from 7-10 Sept 2023 at IECC, Pragati Maidan, New Delhi





21. Participated in National Seminar on promotion of clean energy access in North East India attended by Dr Arun K Sarma, Director General and Dr Collin Z Renthlei, Advisor (Technical) on 23.6.23 at Marriot Hotel, Shillong



22. Inauguration of NECTAR-funded Inclusive Music school on 21.6.23 at State Central Library Shillong by Commissioner & Secretary, Art & Culture, Shri F. Kharkongor and Adviser North Eastern Council, Smt R. Lalrodingi



23. Visit to Mizoram by Dr Arun K Sarma, Director General and Dr Collin Z Renthlei, Advisor Technical 12<sup>th</sup>-15 May 2023 to discuss various collaborative works with Govt of Mizoram.



**24.**International Women's day observed at NECTAR HQ Shillong office on 8.3.2024 with invited chief guest Smt. Trinity Saioo, Padma Shri awardee for her invaluable contribution to the cultivation of Lakadong turmeric and to promote organic farming in Meghalaya



**25.**NECTAR was invited to participate during the Meghalaya Buckwheat strategy dialogue 2024 jointly organised by NECTAR, Meghalaya Farmer's (Empowerment) Commission (MFEC); Directorate of Agriculture, Govt of Meghalaya and Meghalaya Agricultural Management and Extension Training Institute (MAMETI) on 19th March 2024.







26. Visit to Nagaland by Dr Collin Z Renthlei Advisor Technical 4<sup>th</sup> – 6<sup>th</sup> December 2023 to visit NECTAR's entrepreneurs and participate in the 5<sup>th</sup> Nagaland Honey Bee Day and Hornbill Festival.



27. Exposure visit of NITI Aayog Delegation on 20 December 2023 at BCDI Tripura



28. Participated and delivered a talk on Bamboo Skill, Technology and Innovation during National Seminar on bamboo Sector during Kerala Bamboo Fest at Kochi from 12<sup>th</sup> to 14<sup>th</sup> January 2024





29. Celebration of Independence Day and Republic Day at NECTAR's Headquarter on 15<sup>th</sup> August 2023 and 26<sup>th</sup> January 2024 respectively.



30. As part of its ongoing effort to implement adoption of Hindi as an official language, NECTAR has been organising a number of Hindi workshops including conducting Official Language Implementation Committee's meetings every 3 months, attending the NARAKAS meeting on 29.11.2023 and also celebrating Hindi Pakhwada from 14<sup>th</sup> to 28<sup>th</sup> September 2023 in all NECTAR Offices.



## CHAPTER 8 NECTAR IN NEWS

### Cotton University And NECTAR Shillong Forge Partnership For Geospatial Technology Advancement

© Wire News (Feb 25, 2023)



**GUYHARATE:** Cotton University and the North East Centre for Technology Application and Reach (NECTAR) Shillong have formalized a Memorandum of Understanding (MoU) to propel the advancement of Geospatial Applications software to Northeast India on January 24. The signing ceremony, attended by key dignitaries including the Vice-Chancellor of Cotton University and the Director of the Centre for Clouds and Climate Change Research, marked a significant stride in integrating Geospatial Information Systems (GIS) and Remote Sensing (RS) applications within the academic landscape of the region.

[Click here to join our WhatsApp channel](#)

Under this collaboration, cutting-edge Geospatial Applications software will be provided, facilitating the implementation of GIS and RS application-based course training programs across various institutes in Northeast India. The partnership aims to empower students and researchers by providing state-of-the-art tools and knowledge in geospatial technologies, thereby enhancing their skills and capabilities.

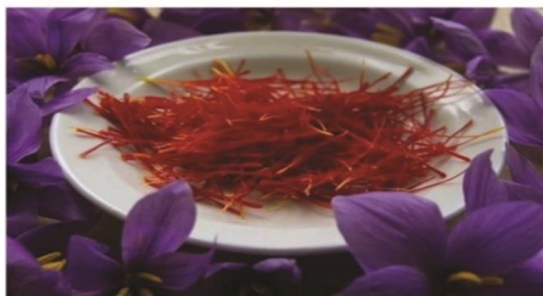
Prof. Ramesh Deka, Vice-Chancellor of Cotton University, commented, "Cotton University is dedicated to providing its students with cutting-edge educational opportunities. The integration of Geospatial Applications software into our academic programs will not only enhance the learning experience but also open up new avenues for research and innovation."

**ALSO READ:** [ULFA Disburses 44 Years After Proclamation Following Triplicate Agreement](#)

Rohini Mukherjee, Director of the Centre for Clouds and Climate Change Research at Cotton University, highlighted the transformative impact this initiative would have on the academic and research landscape of Northeast India. The Centre for Clouds and Climate Change Research will play a pivotal role in coordinating and overseeing the successful execution of the GIS and RS application-based training programs.

### Centre to expand saffron cultivation in Meghalaya

by HP News Service — December 30, 2023 in Meghalaya, Statewide



### Mokokchung Times

6m · 3

Shedding light on the 100 percent utilization of bananas, Dr Arun Kumar Sarma, Director General of the North East Centre for Technology Application and Reach (NECTAR), stated that India now possesses technology capable of converting banana fiber and whole stems into leather, commonly known as vegan leather.



mokokchungtimes.com

Banana fiber and whole stem can be converted into leather: Dr Arun Kumar

### Govt aims at expansion of saffron cultivation in northeast: Official

PTI 29 December, 2023 04:56 pm IST



Shillong, Dec 29 (PTI) The Centre is eyeing at expansion of saffron cultivation in the northeastern states of Sikkim, Arunachal Pradesh and Meghalaya in collaboration with state governments to improve farm income, an official said.

Saffron is a costly spice fetching a minimum of Rs 3.5 lakh per kilogramme and is rich in bioactive compounds with therapeutic properties.

The North East Center for Technology Application and Reach (NECTAR), an autonomous body under the Department of Science and Technology, Government of India, brought good quantity of saffron seeds for the pilot project from producer groups in Kashmir in 2020.

The seeds were distributed to 64 farmers in Sikkim, Arunachal Pradesh, Meghalaya, and Mizoram as part of a trial and the yield in terms of saffron seeds and flowers was above average in the pilot project, NECTAR director general Arun Sarma told PTI.



**Embassy of Japan in India**  
16 January 2024

The project report seminar will be held in Shillong on 23rd Jan, by Casley India Pvt.Ltd. and VFR (a drone company in Japan) and NECTAR. They worked on a feasibility study for the fruit crop/taste monitoring. Please come and check!

**FRUIT QUANTIFICATION AND QUALITY VIA REMOTE SENSING**  
We Casley India Pvt.Ltd. and VFR (Drone Company in JAPAN) and NECTAR worked on Feasibility Study in Meghalaya in 2023.

Our Project Report Seminar in January 2024

**OBJECTIVE**  
Overview of the mobile application for the fruit taste and related parameters.  
Overview of the AI/ML and Blockchain technology used in the app.  
Role of drone technology for the fruit crop monitoring/taste monitoring.

**OUR PROJECT KEYWORDS**  
Blockchain  
Agri-Tech  
Drone

RSVP by 16/01/2024

0124-4210631  
www.casleyindia.com

Manipur | MSRLM planning to set up bamboo producer companies with technical support from NECTAR

3 minutes read | 20-01-2024

NECTAR will be providing technical support for all these future projects

Blawadeep Gupta



An awareness camp training program on "Natural packaging for agriculture and horticulture organic products from bamboo" was jointly organized by South Asia Bamboo Foundation (SABF) and Manipur State Rural Livelihood Mission (MSRLM), Department of Rural Development, Government of Manipur from 15th-20th January at Bamboo Complex here at Imphal.

The program was sponsored by the North East Centre for Technology Application and Reach (NECTAR), Government of India. The training program included both Technical & Practical sessions presented by experts from BCRI c/o NECTAR. P-sonaration of bamboo treatment and processing was also shown during the training program by the experts. The trainees also performed all the various processes during this training.

## Drone Awareness Training Held In Guwahati



The training modules will enable people of the region with better job opportunities in both Government and Private sectors.

GUWAHATI: NECTAR has launched four training modules on Geospatial Technology applications to train and build students and unemployed youths from the North East region into professional resource persons with the introduction to Drone awareness and certified Remote Pilot Training.

## THE ASSAM TRIBUNE, GUWAHATI 5 Guwahati Biotech Park organises training prog on micro-propagation

STAFF REPORTER

GUWAHATI, April 19: Guwahati Biotech Park (GBP) organised a training programme on 'micro-propagation' recently with the support of North East Centre for Technology Application and Reach (NECTAR), DST, GOI.

Dr Bala Choudhury, Senior Scientist, GBP & Programme Coordinator delivered the welcome address and stressed the need of skill development training programme on plant tissue culture for local youths of the Northeast to develop entrepreneurial ventures in the field of biotechnology and allied sectors.

Prof NS Choudhary, Vice-Chancellor, Assam Science & Technology University (ASTU) interacted with the participants and discussed new innovations and others. Dr Pankaj Bhargava: CSIR-NEIST, Dr Pranita Hazarika, TRES, Dr Manab Gogoi, AAU, Dr Kalpana Barman, Dr Dorodi Priyom Dasmah, Goa, Dr Aniruddha Sarma, Pandu College, Dr Moumita Saikia, ADIP College, Rahul Sarma, Simanta Das, Bharat Phukan, NECTAR, Dr Sanjeeb Mazumdar & Abinash Kumar, NREDC, Dr Rajib

Chandra Dev Goswami and Dr Prajvalendra Kumar Borooah, among others attended the event.

The programme concluded with the guidance of Keerthi Jalli, CEO, GBP & Dr Kamrup and Dr Arun Sharma, Director General, NECTAR.

The programme witnessed participation of start-ups, entrepreneurs and students from Assam Royal Global University, Nagaland University, Cotton University, AIMT, Bodoland University, Gauhati University, Assam Don Bosco University, Darrang College, St Edmund's College, Shillong, Nagam College, Jagirvad College, Kaliahar College, JIST, NITK, NEP College of Pharmacy; start-ups viz., Primogen Biotech Pvt Ltd., Himangshu Goswami & Co., Greenboys, Rudeez Agrofarm & Shergon Organic Farms of Arunachal Pradesh.

GBP has planned to organise similar programmes at regular intervals. Companies/professionals/start-ups interested to associate with GBP may visit [www.guwahatibiotechpark.com](http://www.guwahatibiotechpark.com) for EIO of micro propagation facility as well as for upcoming trainings.

## North East StartUp & Entrepreneurs' Conclave 2024 begins at Sankaradeva Kalakshetra

**Guwahati:** The North East Centre for Technology Application and Reach (NECTAR), an autonomous body under the Department of Science and Technology (DST), Government of India is organizing 'North East Start Up & Entrepreneurs' Conclave 2024' at Srimanta Sankaradeva Kalakshetra, Guwahati on 27th & 28th March 2024. The Conclave aims at fostering innovation and entrepreneurship in North East India. It will also display the vibrancy of the North East startup ecosystem, bringing together stakeholders to unite investment, innovation, and connectivity. This was stated by Dr. Arun Kumar Sharma, Director General of NECTAR in a press conference today. The Conclave was inaugurated by Prof. Abhay Karandikar, Secretary, Department of Science and Technology, Govt of India in online mode. This event will attract diverse audiences including school and university students, entrepreneurs, investors, industry professionals and business en-



thusiasts. The goal of this Conclave is to guide the youth energy into constructive innovation and to address regional challenges, which shall foster economic development of the region. NECTAR has been working for the last 10 years to promote and implement appropriate science and technology solutions for improving livelihoods and wellbeing of NE region and empowerment of communities through sustainable development. The techno-conclave is a flagship event of NECTAR organized since the year 2019. The conclave will provide a platform to bring together scientists, technologists, academicians, entrepreneurs, farmers and artisans and students to discuss various S&T applications for socioeconomic development of the NE region. The event featured multiple technical sessions on topics and issues like technology diffusion in the NE region; S&T innovation for generating livelihood in the agriculture, horticulture, food processing and bam-

boo sectors; mitigating flood and erosion hazard; application of geospatial technology; Information and communication technology (ICT); technology development specifically for the northeast; science-technology-heritage connect in the northeast etc. A large number of entrepreneurs, promoted and supported by NECTAR will gather to share their success stories. The event is supported by Technical Partners – Invest India, Startup India, SABB, NIF-India and IASST as well as Organizing Partners IHFC-IIT Delhi, INSA, NIF-India, VIBHA, UBA and IASST. A Technology Expo was also organized, which will provide an opportunity for technology developers and end-users to showcase their ideas, products and processes resulting from application of S&T in various development domains. The Technology Expo was inaugurated by Prof. Ashutosh Sharma, President of Indian National Science Academy and Shri Praveen Ramadas, National Joint Organising Secretary of Vijnana Bharati (VIBHA). More than 60 technology providers, innovators, entrepreneurs, and startups including about twenty-five technology institutions and R&D labs of Central and State Governments, NGOs, companies, co-operatives, and farmer-producers' organizations, have participated in the Technology Expo. A Quiz and Debate competition will also be held to encourage students at colleges and universities to explore the exciting world of emerging socially relevant technologies for NE India. Another attraction of the event was a cultural function in the evening of 27th March with diverse forms of rich traditional music and dance of NE Region. Two days long North East Start Up & Entrepreneurs' Conclave 2024 will be concluded on 28th March at Srimanta Sankaradeva Kalakshetra, Guwahati

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## How smart agriculture can contribute to better production

Priyanka Chakrabarty, May 17, 2023



Assam Agriculture Top Stories Govt Schemes/Policies Editorial

Spread the love

Guwahati: How smart agriculture farming can contribute to better production in India. The topic was debated at the the Indian Institute of Technology, Guwahati (IITG) conducted talk on Smart Agriculture Farming during the Research and Integration Conclave 2023.



The host of the talk Professor (Dr) Rakhi Chaturvedi, Head of the Department of Biosciences and Bioengineering enlightened the gathered audience that smartness of agriculture is linked to the infrastructure available. Smartness refers to the sustainability of the agriculture throughout the year as well as tracking and monitoring in all aspects including the environment.

Smart farming also helps and if agriculture is taken as a profession by adding smartness and automation into it that it will be very useful for India. It will not only increase the production of the country but will also utilize unused agriculture land for production.

The main speaker were Dr Prakash Kumar, Professor of National University of Singapore, renowned Entrepreneur Dr Dhruvrajyoti Sarma, Director of Dera Tea Sutya Prakash Borthakur and a food technologist from North East Centre for Technology Application and Reach (NECTAR) Marlon Pathan.



Home > India > Sikkim >

## Purple blooms on Northeast hills spur hope of saffron cultivation outside Kashmir

At least 15 cultivation sites were identified in Arunachal Pradesh, Meghalaya, Mizoram and Sikkim following individual land surveys meticulously assessing the related parameters specific to saffron cultivation.

Sumir Karmakar | [View](#)

Last Updated: 20 December 2023, 02:07 IST

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Saffron cultivated in the Northeast hills. Credit: Special Arrangement

Guwahati: Parts of the hills in Mechuka in Arunachal Pradesh and Yuksom in Sikkim have literally turned purple as farmers have taken to cultivation of saffron, raising hope for commercial cultivation of the costliest spice outside Kashmir.

## Jongksha on air: Community radio station launched

The formal airing of Mawkynew 89.60 FM Community Radio at Jongksha was held today, with local MLA Banteidor Lyngdoh inaugurating the service, a first for rural Meghalaya.

The North East Centre for Technology Application and Reach (NECTAR) set up this community radio station, which is like a normal FM station. Informative programmes on education, health, environment, agriculture and local music will be beamed directly to the people of the rural community.

The project is a unique initiative of the communication division of NECTAR, under the leadership and guidance of Arun Kumar Sarma, its Director General.

This community radio project is entirely funded by NECTAR amounting to Rs 60 lakh and will be operated by the village dobar of Jongksha, which will help in promoting agriculture, rural livelihood and community development to more than 100 isolated villages with a population of approximately 35,000 people under Mawkynew block and adjacent rural areas.

Speaking on the occasion, Lyngdoh said that he is proud to see that the first radio station in rural Meghalaya has come up in Jongksha.

Lyngdoh also thanked the Sordar of Jongksha, Olet Kharsohnoh, for taking the initiative to start this radio station in collaboration with NECTAR.

He also said that through this radio station people from other places can get more information about Mawkynew, especially of the beautiful tourist sites that the area is blessed with.

Lyngdoh also said that students can make use of the radio station to get tutorials on various subjects like mathematics, science and other subjects, free of cost.



Assam Meghalaya Tripura Mizoram Manipur Nagaland Arunachal Pradesh Business Entertainment >

Opinion

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## NECTAR hosts NE start-up conclave 2024 at Guwahati's Srimanta Sankardeva Kalakshetra

by Northeast News — April 5, 2024 in Assam



The inaugural session witnessed participation from more than 25 young students.

Recommended



382 female recruits shine at Assam Rifles attestation parade in Nagaland

9 MONTHS AGO



Unemployment, a challenge in Meghalaya as job-seekers multiply: CM Sangma

10 MONTHS AGO



By Dr Sunita Upadhyaya

**Saffron**, the oldest and the costliest spice in the world is known for its organoleptic properties. Often referred to as '**red gold**' the thread-like dried stigmas of the Crocus flower are the storehouse of several bioactive compounds including crocetin, crocin, picrocrocin, kaempferol and safranal making it a potential functional food. It has wide-ranging therapeutic properties including anti-cancer, anti-diabetic, anti-depressant, anti-seizure, anti-inflammatory, and hypolipidemic. Known for its unique flavour, aroma, and colour, saffron is a popular ingredient in various food and beverage products.



## North East Start Up & Entrepreneurs' Conclave 2024 Begins at Kalakshetra

The Conclave was inaugurated by Prof. Abhay Karandikar, Secretary, Department of Science of Technology, Govt of India in online mode.



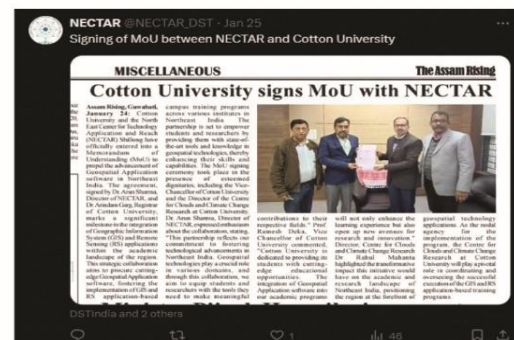
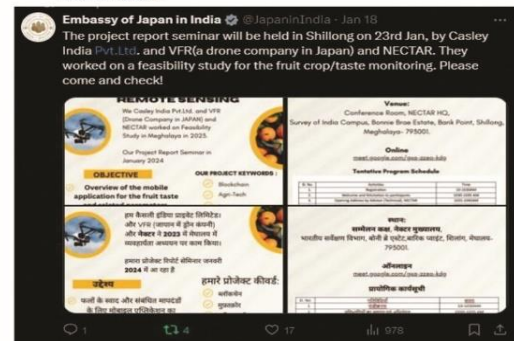
North East Start Up & Entrepreneurs' Conclave 2024 Begins at Kalakshetra

Pratidin Time

Updated on: 27 Mar 2024, 10:17 pm



The North East Centre for Technology Application and Reach (NECTAR), an autonomous body under the Department of Science and Technology (DST), Government of India is organizing 'North East Start Up & Entrepreneurs' Conclave 2024' at Srimanta Sankaradeva Kalakshetra, Guwahati on 27th & 28th March 2024. The Conclave aims to foster innovation and entrepreneurship in North East India. It will also display the vibrancy of the North East startup ecosystem, bringing together stakeholders to unite investment, innovation, and connectivity. This was stated by Dr. Anan Kumar Sarma, Director General of NECTAR in a press conference today.













**DINESH JAIN & ASSOCIATES**  
CHARTERED ACCOUNTANTS

A-115, Vikas Marg, 2nd Floor  
Shakarpur, Delhi - 110092  
Tel.: 42487261, 22017204  
Mob.: 98100 92750,  
98109 22575  
E-mail: dkjain440@gmail.com

### INDEPENDENT AUDITOR'S REPORT

To the Members of **NORTH EAST CENTRE FOR TECHNOLOGY APPLICATION AND REACH (NECTAR)**

#### Report on the Financial Statements

We have audited the financial statements of **NORTH EAST CENTRE FOR TECHNOLOGY APPLICATION AND REACH (NECTAR)** ("the Society"), which comprise the Balance Sheet as at March 31, 2024, the Statement of Income and Expenditure, the Receipt and Payment Account for the year then ended and schedules to the financial statements, including a summary of significant accounting policies.

#### Basis for Opinion

We conducted our audit in accordance with the Standards on Auditing (SAs) issued by ICAI. Our responsibilities under those Standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are independent of the entity in accordance with the Code of Ethics issued by ICAI and we have fulfilled our other ethical responsibilities in accordance with the Code of Ethics. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

#### Responsibilities of Management and Those Charged with Governance for the Financial Statements

The Society's management is responsible for the preparation of these financial statements according to its Bye Laws that gives a true and fair view of the financial position and financial performance of the Society in accordance with the accounting principles generally accepted in India.

This responsibility also includes maintenance of adequate accounting records for safeguarding the assets of the Society and for preventing and detecting frauds and other irregularities; selection and application of appropriate accounting policies; making judgments and estimates that are reasonable and prudent; and design, implementation and maintenance of adequate internal financial controls, that were operating effectively for ensuring the accuracy and completeness of the accounting records, relevant to the preparation and presentation of the financial statements that give a true and fair view and are free from material misstatement, whether due to fraud or error.

### Auditor's Responsibilities for the Audit of the Financial Statements

Our responsibility is to express an opinion on these financial statements based on our audit. We have conducted our audit in accordance with the Standards on Auditing issued by "ICAI".

Those Standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and the disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal financial control relevant to the Society's preparation of the financial statements that give a true and fair view in order to design audit procedures that are appropriate in the circumstances. An audit also includes evaluating the appropriateness of the accounting policies used and the reasonableness of the accounting estimates made by the Society's management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion on financial statements.

### Opinion

Subject to our audit observations in "Annexure I" of the report, we report that:

- a) We have sought and obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purposes of our audit.
- b) In our opinion, proper books of account as required by law have been kept by the Society so far as it appears from our examination of those books.
- c) The Balance Sheet and the Statement of Income and Expenditure dealt with by this Report are in agreement with the books of account.
- d) In our opinion and to the best of our information and according to the explanations given to us, the said financial statements read with the schedules/notes thereto give the information required and give a true and fair view: -
  - i. In case of Balance Sheet, of the state of affairs of the Society as at 31<sup>st</sup> March, 2024; and
  - ii. In case of Income and Expenditure, of excess of expenditure over income for the year ended on that date.

For DINESH JAIN & ASSOCIATES  
CHARTERED ACCOUNTANTS  
Firm Regn. No: 004885 N

PLACE: DELHI  
DATED: 25-07-2024

(DINESH KR. JAIN) FCA  
PARTNER  
M.No. 082033

UDIN : 24082033BKDI BV8205



### AUDIT OBSERVATIONS – ANNEXURE I

1. The TDS returns filed by the Society for its employees are not according to the Income Tax Act, as the details of salary for the month of March 2024 has not been included in the TDS return so filed. We have been informed by the Society that they have been following this practice as the parent organization DST is also following the same and the salary for the month of March is paid in April. However, the Society has been advised to review the policy in line with the provisions of the Income Tax Act, 1961.
2. During the course of audit, no balance confirmation as on 31<sup>st</sup> March 2024, were received from debtors / creditors and TDA loan outstanding parties. Therefore the balances of all debtors, creditors and TDA loans are unconfirmed and unreconciled. In most of the cases the Society has already taken legal action.
3. During the course of audit, it was observed that various TDA loans are in arbitration and legal process. Society has to take necessary steps to sought out the same as early as possible. There are total 87 cases in legal proceedings as on 31.03.2024 in which 30 cases are in arbitration and 57 other legal cases in courts.
4. Advance to suppliers (6 parties) amounting to Rs. 53.05 Lakhs is outstanding for a long time. Efforts should be made to collect the same and in case of non-recoverability adequate provision should be made there against.
5. The Society was mandated to hold Executive Council (EC) meeting at least once in every three months in each year of its operation. Therefore 4 EC meetings should have been held during the year. However, only two EC meetings were held on 21.07.2023 & 15.02.2024 by the society.
6. The Society has closing stock of Rs. 28.74 Lakh as on 31.03.2024 lying at Shillong/Guwahati location of the Society in which there is no movement during the year.
7. The Society has to get back an amount of Rs. 9,11,796 comprising TDS of Rs. 2,15,622 and CPF interest of Rs. 6,96,174 from TIFAC as on 31.03.2024
8. The Society has got various project specific grants from Government departments which are maintained as Earmarked funds and routed through Balance Sheet. On completion of the said projects, the actual surplus / deficit will be taken in Profit and Loss Account.
9. During the year 2021-22, w.e.f. 06.08.2021, an agreement was executed between Development Commissioner (Handicrafts), Ministry of Textiles, Govt. of India and NECTAR through which the operational and management control of Bamboo & Cane Development Institute (BCDI) has been entrusted to NECTAR for efficient running of Bamboo Technology to support diverse kind of livelihood in Tripura and North East as well as rest of India initially for a period of three years.

After taking the operational and management control of BCDI, NECTAR started the activities as a project. The financial summary as at 31.03.2024 and 31.03.2023 respectively has been summarized below and dully incorporated in the financial statements of NECTAR:-

Particulars	Amount Rs. Lakh	
	Current Year 31.03.2024	Previous Year 31.03.2023
Total Grant received for the Training Programmes / Sales & Services	105.67	104.57
Total Amount Incurred for Training Programmes	101.89	109.56
<b>Surplus/Deficit</b>	<b>3.78</b>	<b>(4.99)</b>
Corpus/Capital Fund	164.87	161.09
Current Liabilities	33.85	3.57
<b>Total</b>	<b>198.72</b>	<b>164.66</b>
Cash and Bank Balance	97.18	63.88
Other Assets F/A & CA	101.54	100.78
<b>Total</b>	<b>198.72</b>	<b>164.66</b>

## NORTH EAST CENTRE FOR TECHNOLOGY APPLICATION AND REACH

### REPLIES TO AUDIT OBSERVATIONS “ANNEXURE I”

The point-wise replies on the observations of the Audit are given below:

1. It is the practice in government (particularly in DST) to pay the salary of March in April every year. As it was paid in April, hence included in 1st quarter return of next year. The practice will be reviewed and would be take care in future.
2. Emails were posted to all the debtors/creditors to confirm their o/s balance and from TDA loan parties to confirm their TDA loan outstanding balance. No responses have been received so far. NECTAR has taken legal action against most of the TDA defaulters.
3. Arbitration has been initiated against almost all TDA loan defaulters. In some of the cases new reschedulement of repayment has been signed and PDCs has been received after reschedulement . In other cases the parties have started paying the outstanding amount after legal case was filed against them.
4. Legal proceeding has taken against the suppliers and the recoveries are under process.
5. Two executive council meeting were held, two other meeting of executive council could not be held due to unavailability of time of EC members.
6. Some of the Stock items lying at other locations of NECTAR. Most of the items are bamboo based and it is planned to be consumed in production of bamboo related items of NECTAR / BCDI.
7. The amount of Rs.9,11,796/- receivable from TIFAC in under process of recovery.
8. Grant received for project from other Government department routed through Balance sheet and after completion of the project surplus and deficit taken into profit and loss account as per G.O.I. Norms.
9. All activities of BCDI are taken up as per MOU signed with DC (Handicrafts) Ministry of Textiles and NECTAR.



NORTH EAST CENTRE FOR TECHNOLOGY APPLICATION AND REACH

**BALANCE SHEET AS AT 31.03.2024**

Amount in Rs.

Particulars	Schedule	Current Year	Previous Year
<b><u>CORPUS/CAPITAL FUND AND LIABILITIES</u></b>			
Corpus / Capital Fund	Schedule 1	1,105,391,028.83	885,873,308.55
Reserves and Surplus		-	-
Earmarked / Endowment Funds	Schedule 2	12,105,868.00	45,917,336.00
Secured Loans and Borrowings		-	-
Unsecured Loans and Borrowings		-	-
Deferred Credit Liabilities		-	-
Current Liabilities and Provisions	Schedule 3	25,823,327.91	23,042,802.91
<b>TOTAL</b>		<b>1,143,320,224.74</b>	<b>954,833,447.46</b>
<b><u>ASSETS</u></b>			
Fixed Assets (Net)	Schedule 4	278,678,002.45	62,758,303.79
Investments-From Earmarked / Endowment Funds		-	-
Investments-Others		-	-
Current Assets, Loans and Advances etc.	Schedule 5	864,642,222.29	892,075,143.67
<b>TOTAL</b>		<b>1,143,320,224.74</b>	<b>954,833,447.46</b>
Significant Accounting Policies	Annexure A		

As per our report of even date annexed herewith;

For Dinesh Jain & Associates  
Chartered Accountants  
FRN.004885N

CA.Dinesh Kumar Jain  
Partner  
Membership No.: 082033  
UDIP

Accounts Manager  
(NECTAR)

Sr. Admin Officer  
(NECTAR)

Director General  
(NECTAR)

Dated: 25.07.2024  
Place: Delhi

NORTH EAST CENTRE FOR TECHNOLOGY APPLICATION AND REACH  
INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31.03.2024

Particulars	Schedule	Amount in Rs.	
		Current Year	Previous Year
<b>INCOME</b>			
Income From Promotional Activities	Schedule 6	17,549,246.00	693,509.00
Grants/Subsidies	Schedule 7	151,984,810.00	102,507,862.00
Fees / Subscriptions	Schedule 8	83,500.00	106,510.50
Income from Investment		-	-
Income from Royalty, Publication Etc.		-	-
Interest Earned	Schedule 9	14,250,424.00	15,805,702.00
Other Income (Including Partner Cont.)	Schedule 10	7,962,988.00	9,390,102.55
Increase/Decrease in Stock of Finished Goods & Work in Progress	Schedule 11	-	(334,100.77)
<b>TOTAL (A)</b>		<b>191,830,968.00</b>	<b>128,169,585.28</b>
<b>EXPENDITURE</b>			
Establishment Expenses	Schedule 12	52,216,488.00	47,318,013.00
Other Administrative Expenses etc.	Schedule 13	42,115,518.07	27,482,395.28
Expenditure on Grant ,Subsidies Etc.(Project Expenditures)	Schedule 14	85,111,330.00	79,480,389.00
Interest		-	-
Prior Period Expenditure	Schedule 15	2,189,129.00	796,891.00
Depreciation on (Net Total at the Year end)	Schedule 4	22,908,449.34	11,580,404.44
<b>TOTAL (B)</b>		<b>204,540,914.41</b>	<b>166,658,092.72</b>
Balance being excess of Income over Expenditure (A-B)		(12,709,946.41)	(38,488,507.44)
Balance being excess of Expenditure over Income (B-A)		378,233.69	(499,764.52)
Surplus of Bamboo & Cane Development Institute (BCDI)			
Balance being Surplus transferred to Corpus/Capital Fund			
Balance being Deficit transferred to Corpus/Capital Fund		(12,331,712.72)	(38,988,271.96)

As per our report of even date annexed herewith;

For Dinesh Jain & Associates  
Chartered Accountants  
FRN.004885N

CA.Dinesh Kumar Jain  
Partner  
Membership No.: 082033  
UDIN: .

Dated: 25.07.2024  
Place: Delhi

Accounts Manager      Sr. Admin Officer      Director General  
(NECTAR)                      (NECTAR)                      (NECTAR)

NORTH EAST CENTRE FOR TECHNOLOGY APPLICATION AND REACH

RECEIPTS & PAYMENT ACCOUNT FOR THE YEAR ENDED 31.03.2024

Amount in

RECEIPTS	Current Year	Previous Year	PAYMENTS	Current Year	Previous Year
<b>1 Opening Balances</b>			<b>1 Expenses</b>		
a) Cash in hand	-	-	a) Establishment Expenses	52,290,178.00	44,894,820.00
b) Bank balances	-	-	b) Administrative Expenses	45,801,853.44	34,519,161.00
i) In Current Accounts	-	-	c) Selling Expenses	-	-
ii) In Deposit Accounts (fd)	104,483,150.00	99,391,331.00	d) Payments made against funds for various projects	-	-
iii) Savings Accounts	271,788,348.06	363,842,469.00	<b>2 (A)EXPENSES ON OWN PROJECTS</b>		
<b>2 Grants Received</b>			Technologies-Delivery & Services	16,945,180.00	25,071,933.00
a) From Government of India	391,100,000.00	146,600,000.00	Technology Assistance to State Government	1,440,000.00	960,000.00
b) From Government of India (Seed Project)	-	-	Ass to St Govern in technology Aided Decision Supp	4,044,429.00	6,834,286.00
c) MNCF-Geospatial project	-	4,390,185.00	Technologies-Consultation Projects	234,500.00	1,174,167.00
d) PM-DeVINE Project (Donner)	33,046,601.00	2,000,000.00	Technologies Demonstration and Induction	27,525,052.00	35,054,190.00
e) MBB-Meghalaya project	122,668,207.00	20,170,000.00	Technologies-Extension & consolidation	16,268,737.00	9,508,203.00
f) National livestock mission (M/Fisheries)	-	5,000,000.00	Technology Development Assistance-Loan	8,753,250.00	14,670,000.00
g) NERAMAC-CB&O	11,025,000.00	-	Inhouse projects (Honey Mission,PWIKV & Saffron)	4,988,362.00	1,274,516.00
<b>3 Income on Investments from</b>			NERAMAC-Project	13,529,698.00	93,729,208.00
a) Farmarked/Endowment Funds	-	-			
b) Own Funds	-	-	<b>(B)EXPENSES ON EARMARKED PROJECTS</b>		
<b>4 Interest Received</b>			1)Grant for SDR Nagaland & Meghalaya Police	-	-
a) On Bank Deposits	6,585,568.00	7,227,022.00	2)Grant for Toss Project	-	1,190,166.00
b) On Savings accounts	7,747,701.00	6,960,191.00	2)Grant for Baans project	7,931,351.00	420,120.00
c) Interest on income tax refund	-	7,020.00	3)Geospatial Projects	16,414,019.00	5,429,424.00
d) Penal Interest	-	-	4)PM DeVINE Project (Donner)	48,792,345.00	768,107.00
<b>5 Other Income (Specify)</b>			5)MBB-Meghalaya project	110,878,171.00	21,332,431.00
Training fees	153,839.00	20,500.00	6)SED-Project	11,076,922.00	2,467,365.00
Other Receipt (RTI)	-	52.00	7) HGH Project	3,894,023.00	2,976,781.00
Misc. Receipts	2,928.44	87,282.50	8) NLM Project	3,950,000.00	-
Other receipts	109,210.00	98,025.00		197,036,731.00	35,076,384.00
Guest House Charges	351,121.00	380,270.00	<b>3 Expenditure on Fixed Assets &amp; Capital Work-in Progress</b>		
<b>6 Amount Borrowed</b>			a) Purchase of Fixed Assets & WIP	34,486,944.00	47,126,919.00
<b>7 Advances Received For Contracts</b>			Building Construction	204,400,000.00	238,895,944.00
<b>8 Any Other Receipts (Give Details)</b>			<b>4 Refund of Unspent funds</b>		
a) Partner Contribution	873,100.00	168,102.00	a) Unspent Funds refunded, G.O.I.	1,421,421.00	24,260,517.00
b) Refund from TDA	5,585,332.00	2,586,330.54	b) Interest on Unspent fund refunded, G.O.I	-	464,688.00
c) Realisation From Receivable Parties	3,556,225.00	937,656.00	c) Unspent Funds refunded PMDeVine project, G.O.I	-	1,092,433.00
d) Amount received from SBI	-	370,421.00	<b>5 Finance Charges (Bank Charges)</b>	-	13,089.07
e) Refund from project advance	6,583.00	747,000.00	<b>6 Other Payments (Specify)</b>		
f) Refund from income tax	18,224.00	99,559.00	EMD & Others	630,000.00	130,980.00
g) Refund from employees	615,099.00	494,039.00	Advances to Employees	759,561.00	4,764,352.00
h) CPF & EMD-Received	130,000.00	-	GST Payable	277,701.00	290,224.00
i) HGH Exhibition Fund received	7,781,920.00	913,305.00		1,667,662.00	5,185,556.00
j) Refund from payables	-	1,400,000.00	Advances given to suppliers and others	-	-
			Security Deposit	1,491,921.00	100,000.00
<b>Total</b>	<b>967,626,206.50</b>	<b>863,848,760.64</b>	<b>7 Closing Balances</b>		
			a) Cash in hand	-	-
			b) Bank balances	-	-
			i) In Current Accounts	224,153,764.59	104,483,150.00
			ii) In Deposit Accounts	111,124,434.00	271,788,348.06
			iii) Savings Accounts	-	-
			<b>Total</b>	<b>335,278,198.59</b>	<b>376,271,498.06</b>
				<b>967,626,206.50</b>	<b>863,848,760.64</b>

As per our report of even date annexed herewith

For Dinesh Jain & Associates  
Chartered Accountants

CA.Dinesh Kumar Jain  
Partner  
Membership No.: 082033  
UDIN:

Accounts Manager  
(NECTAR)

Sr. Admin Officer  
(NECTAR)

Director General  
(NECTAR)

Dated: 25.07.2024  
Place: Delhi



NORTH EAST CENTRE FOR TECHNOLOGY APPLICATION AND REACH  
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31.03.2024

Amount in Rs.

Schedule 1 - Corpus / Capital Fund	Current Year	Previous Year
<b>NECTAR</b>		
Opening Balance	885,873,308.55	897,873,750.06
Add:-TDA adjustment	750,000.00	
Add:-Received Capital fund from DST	238,500,000.00	40,000,000.00
Less:- Deferred Revenue Grant	(6,594,336.00)	(8,867,064.55)
Less:-Capital Grant Refundable	-	(4,145,105.00)
Less: Fund reufnd to DST	(806,231.00)	-
<b>TOTAL</b>	<b>1,117,722,741.55</b>	<b>924,861,580.51</b>
Excess of Expenditure over Income	(12,331,712.72)	(38,988,271.96)
<b>TOTAL</b>	<b>1,105,391,028.83</b>	<b>885,873,308.55</b>
<b>Closing Balance</b>	<b>1,105,391,028.83</b>	<b>885,873,308.55</b>
<b>Total</b>	<b>1,105,391,028.83</b>	<b>885,873,308.55</b>

Schedule 2 - Earmarked/Endowment Funds	Current Year	Previous Year
a) Opening Balance of the funds	45,917,336.00	57,390,979.00
b) Additions to the Funds:		
i) Donations /Grants		
a) Grants for SEED Project	130,632.00	-
b) Grants for PM DeVINE Project	33,046,601.00	907,567.00
c) Grants for Geo-Spatial Project	226,449.00	4,390,815.00
d) Grants for Meghalaya MBB Project	122,668,207.00	20,170,000.00
e) Grants for National Livestock Mission	-	5,000,000.00
f) DC&H (HGH Exhibition )	6,486,978.00	913,305.00
g) NERAMAC CBBO Project	50,644.00	-
ii) Income from investments made on account of Fund	-	-
iii) Other Additions (Specify)	-	-
<b>TOTAL (a+b)</b>	<b>208,526,847.00</b>	<b>88,772,666.00</b>
c) Utilization /Expenditure towards objectives of funds		
i) Capital Expenditure		
a) Toss/Baans/SDR Scheme	-	6,772,793.00
b) Seed Project	7,343,540.00	
c) PM DeVINE Project	36,456,377.00	
ii) Revenue Expenditure		
a) Toss/Baans/Sdr Scheme	7,931,351.00	108,000.00
b) Seed Project	3,873,288.00	2,562,817.00
c) PM DeVINE Project	13,312,731.00	768,107.00
d) Geo Spatial Project	10,388,382.00	5,758,873.00
e) Meghalaya MBB Project	108,759,762.00	23,839,361.00
f) NERAMAC CBBO Project	-	50,644.00
g)HGH Exhibitions Expenses	4,405,548.00	2,994,735.00
h)NLM Project Expenses	3,950,000.00	-
<b>TOTAL (c)</b>	<b>196,420,979.00</b>	<b>42,855,330.00</b>
<b>NET BALANCE AT THE YEAR END (a + b- c)</b>	<b>12,105,868.00</b>	<b>45,917,336.00</b>

**Notes**

- 1) Disclosures shall be made under relevant Heads based on conditions attaching to the Grants.
- 2) Plan Funds received from Central /State Governments are to be shown as separate Funds and not to be mixed up with any other Funds.

NORTH EAST CENTRE FOR TECHNOLOGY APPLICATION AND REACH  
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31.03.2024

Amount in Rs.		
<u>Schedule 3 - Current Liabilities and Provisions</u>	Current Year	Previous Year
<b>A. CURRENT LIABILITIES</b>		
1. Acceptances	-	-
2. Sundry Creditors:		
a) For Goods	855,506.00	855,506.00
b) Others	750,869.00	99,567.00
3. Advance Received		
Partner contribution payable	820,785.00	820,785.00
4. Interest accrued but not due on:	-	-
a) Secured Loans/borrowings		
b) Unsecured Loans /borrowings		
5. Statutory Liabilities:		
a) Over dues	-	-
b) Others: TDS Payable	1,440,397.00	2,764,510.00
c) GST Payable	16,660.00	37,970.00
6. Other current Liabilities		
Administrative Expenses Payable (Annexure-1)	1,478,140.00	1,348,250.00
Establishment Expenses Payable (Annexure-2)	4,107,730.00	3,714,353.00
Bamboo & Cane Development Institute (BCDI)	6,461,560.91	3,510,181.91
SDR technology	9,434,880.00	9,434,880.00
<u>Earnest Money-</u>		
Security Retention Money- RS Softech	46,800.00	46,800.00
OVN Bio Energy P.Ltd. ,Gurgaon	100,000.00	100,000.00
Sree Engineers, Hyderabad	100,000.00	100,000.00
Deva Bamboo & Allied Ind., Imphal	5,000.00	5,000.00
Dhanjal Mechanical Works P. Ltd.	100,000.00	100,000.00
Prince Carbon & Charcoal Ind.	5,000.00	5,000.00
R.D. Industrial Corp., Kolkatta	100,000.00	100,000.00
<b>TOTAL (A)</b>	<b>25,823,327.91</b>	<b>23,042,802.91</b>
<b>B. PROVISIONS</b>		
1. For Taxation	-	-
2. Gratuity	-	-
3. Superannuation /Pension	-	-
4. Accumulated Leave Salary / Encashment	-	-
5. Trade Warranties/Claims	-	-
6. Others (Specify)	-	-
<b>TOTAL (B)</b>	<b>-</b>	<b>-</b>
<b>TOTAL (A+B)</b>	<b>25,823,327.91</b>	<b>23,042,802.91</b>

SCHEDULE 4-FIXED ASSETS- NECTAR																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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NORTH EAST CENTRE FOR TECHNOLOGY APPLICATION AND REACH

SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31.03.2024

	Amount in Rs.	
<u>Schedule 5 - Current Assets, Loans, Advances Etc.</u>	Current Year	Previous Year
<b>A. CURRENT ASSETS</b>		
<b>1. Inventories:</b>		
a) Stores and Spares	-	-
b) Loose Tools	-	-
c) Stock-in-trade		
Finished Goods	2,874,229.27	2,874,229.27
Work-in-progress	-	-
Raw Materials	-	-
d) Software Defined Radio-SDR	-	-
<b>2. Accounts Receivables:(Promotional Activities)</b>		
a) Debts Outstanding for a period exceeding six months	25,180,388.54	25,320,388.54
b) Others	3,814,417.00	8,327.00
<b>3. Cash balances in hand</b> (including cheques /drafts and Imprest)	-	-
<b>4. Bank Balances:</b>		
a) <u>With Scheduled Banks:</u>		
On Current Accounts	-	-
On Deposit Accounts (Short term deposits)	111,124,434.00	104,483,150.00
On Savings Accounts	224,153,764.99	271,788,348.06
On Bamboo & Cane Development Institute (BCDI)	9,718,502.82	6,388,890.13
b) <u>With non-Scheduled Banks:</u>		
On Current Accounts	-	-
On Deposit Accounts	-	-
On Savings Accounts	-	-
<b>5. Post Office-Savings Accounts</b>	-	-
<b>TOTAL (A)</b>	<b>376,865,736.62</b>	<b>410,863,333.00</b>

NORTH EAST CENTRE FOR TECHNOLOGY APPLICATION AND REACH  
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31.03.2024

	Amount in Rs.	
<u>Schedule 5 - Current Assets, Loans, Advances Etc</u>	Current Year	Previous Year
<b>B. LOANS, ADVANCES AND OTHER ASSETS</b>		
<b>1. Loans</b>		
a) <u>Technology Development Assistance Loan</u>	461,856,249.00	457,938,331.00
b) <u>Staff and other loans</u>		
a) Staff : Advance (Annexure - 3)	5,076,961.00	4,868,353.00
b) Other: Entities engaged in activities/objectives similar to that of the		
<u>value to be received.</u>		
a) On capital Account		
b) Prepayments for Projects		
c) Security Deposits		
Security Deposit:E-Sign (CDAC)	100,000.00	100,000.00
Security Deposit: MTNL	1,500.00	1,500.00
Security Deposit: Rent TDC Guwahati	166,662.00	166,662.00
Security Deposit: Qutab Service Station	10,000.00	10,000.00
Security Deposit: NECTAR G/H	200,000.00	195,000.00
Security Deposit: BSNL	2,499.00	2,499.00
Security Deposit: Water Bottel	3,000.00	3,000.00
Security Deposit: SOI Shillong	236,700.00	120,000.00
Security Deposit: GAS shilong	3,550.00	3,550.00
Security Deposit: APDCL (Electricity)	537,060.00	82,500.00
Security Deposit: Reliance Jio shilong	3,536.00	-
Security Deposit: NECTAR G/H-G	200,000.00	-
Security Deposit: NECTAR GBP	217,125.00	-
EMD Deposit: Krishi Bhawan	500,000.00	-
d) Others		
Arbitration expenses recovery	54,313.00	54,313.00
Recovery from TIFAC	911,796.00	911,796.00
Insolvency Charges	45,436.00	45,436.00
Prepaid Insurance Charges	8,120.00	760.00
Prepaid AMC Charges	3,837.00	11,472.00
Land Revenue Charges	1,000.00	2,000.00
Prepaid Website Maintenance Charges	825.00	1,445.00
SDR Installation Arunachal Pradesh	435,963.00	435,963.00
A. B. Composites Pvt. Ltd.	1,797,982.95	1,797,982.95
Advances to Suppliers and Others (Annexure-5)	5,350,532.00	5,350,532.00
<b>3. Income Accrued</b>		
a) On Investments from Earmarked/ Endowment Funds		
b) On Investment – Others		
c) On Loans and Advances		
d) Others: Interest Accrued	5,197,827.00	5,020,857.00
<b>4. Claims Receivable</b>		
GST Receivable	4,543,665.72	4,071,634.72
TDS (A.Y.- 2023-24)	-	16,224.00
TDS (A.Y.- 2024-25)	310,346.00	-
<b>TOTAL (B)</b>	<b>487,776,485.67</b>	<b>481,211,810.67</b>
<b>TOTAL (A+B)</b>	<b>864,642,222.29</b>	<b>892,075,143.67</b>

NORTH EAST CENTRE FOR TECHNOLOGY APPLICATION AND REACH  
SCHEDULES FORMING PART OF INCOME & EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31.03.2024

Schedule 6 - Income From Promotional Activities	Current Year	Previous Year
1. <u>Income from Promotional Activities</u>		
a) Sale of Finished Goods/Traded	-	393,300.00
b) Sale of Raw Material		
c) Sale of Scraps		
d) Miscellaneous		
2. <u>Income from Services</u>		
a) Labors and Processing Charges		
b) Professional/Consultancy Services	3,250,846.00	225,000.00
c) Agency Commissions and Brokerage		
d) Maintenance Services (Equipment/Property)		
e) Others (Specify)	48,400.00	75,209.00
f) NERAMAC Project Receipts	14,250,000.00	-
<b>TOTAL</b>	<b>17,549,246.00</b>	<b>693,509.00</b>
<u>Schedule 7 - Grants / Subsidies</u>	<u>Current Year</u>	<u>Previous Year</u>
(Irrevocable Grants & Subsidies Received)		
1. From Central Government	-	-
Grants in Aid (General)	115,400,000.00	76,600,000.00
Less: Returned	(129,165.00)	(3,381.00)
Grant in Aid (Salary)	37,200,000.00	30,000,000.00
Less: Returned	(486,025.00)	(4,088,757.00)
2. Central Government other projects	-	-
3. State Government projects	-	-
4. Institutions/Welfare Bodies	-	-
5. International Organizations	-	-
6. Others (Specify)	-	-
<b>TOTAL</b>	<b>151,984,810.00</b>	<b>102,507,862.00</b>
<u>Schedule 8 - Fees / Subscriptions</u>	<u>Current Year</u>	<u>Previous Year</u>
1. Entrance Fees		
2. RTI Receipts	-	52.00
3. Seminar/Program Fees	-	20,500.00
4. Processing Fees	-	27,933.50
5. Others (Tender Money)	83,500.00	58,025.00
<b>TOTAL</b>	<b>83,500.00</b>	<b>106,510.50</b>



NORTH EAST CENTRE FOR TECHNOLOGY APPLICATION AND REACH  
SCHEDULES FORMING PART OF INCOME & EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31.03.2024

<u>Schedule 6 - Income From Promotional Activities</u>	<u>Current Year</u>	<u>Previous Year</u>
1. <u>Income from Promotional Activities</u>		
a) Sale of Finished Goods/Traded	-	393,300.00
b) Sale of Raw Material		
c) Sale of Scraps		
d) Miscellaneous		
2. <u>Income from Services</u>		
a) Labors and Processing Charges		
b) Professional/Consultancy Services	3,250,846.00	225,000.00
c) Agency Commissions and Brokerage		
d) Maintenance Services (Equipment/Property)		
e) Others (Specify)	48,400.00	75,209.00
f) NERAMAC Project Receipts	14,250,000.00	-
<b>TOTAL</b>	<b>17,549,246.00</b>	<b>693,509.00</b>
<u>Schedule 7 - Grants / Subsidies</u>	<u>Current Year</u>	<u>Previous Year</u>
(Irrevocable Grants & Subsidies Received)		
1. From Central Government	-	-
Grants in Aid (General)	115,400,000.00	76,600,000.00
Less: Returned	(129,165.00)	(3,381.00)
Grant in Aid (Salary)	37,200,000.00	30,000,000.00
Less: Returned	(486,025.00)	(4,088,757.00)
2. Central Government other projects	-	-
3. State Government projects	-	-
4. Institutions/Welfare Bodies	-	-
5. International Organizations	-	-
6. Others (Specify)	-	-
<b>TOTAL</b>	<b>151,984,810.00</b>	<b>102,507,862.00</b>
<u>Schedule 8 - Fees / Subscriptions</u>	<u>Current Year</u>	<u>Previous Year</u>
1. Entrance Fees		
2. RTI Receipts	-	52.00
3. Seminar/Program Fees	-	20,500.00
4. Processing Fees	-	27,933.50
5. Others (Tender Money)	83,500.00	58,025.00
<b>TOTAL</b>	<b>83,500.00</b>	<b>106,510.50</b>

<b>Schedule 9 - Interest Earned</b>	<b>Current Year</b>	<b>Previous Year</b>
1. On Term Deposits:		
a) With Scheduled Banks	6,833,785.00	9,190,504.00
b) With Non-Scheduled Banks	-	-
c) With Institutions	-	-
d) Others	-	-
2. On Savings Accounts:		
a) With Scheduled Banks	7,416,639.00	6,608,178.00
b) With Non-Scheduled Banks	-	-
c) Post Office Savings Accounts	-	-
d) Others	-	-
3. On Loans:		
a) Employees/Staff	-	-
b) Others (Long term advances)	-	-
4. Interest on Debtors and Other Receivables		
a) Penal Interest	-	-
b) Interest on Income tax refund	-	7,020.00
<b>TOTAL</b>	<b>14,250,424.00</b>	<b>15,805,702.00</b>

<b>Schedule 10 - Other Income</b>	<b>Current Year</b>	<b>Previous Year</b>
1. Profit on Sale/ disposal of Assets	-	-
a) Owned assets	-	-
b) Assets acquired out grants, of received free of cost	-	-
2. Export Incentives realized	-	-
3. Fees for Miscellaneous Services-(HIGH Project)	1,294,942.00	-
4. Miscellaneous Income	-	-
Deferred Revenue Grant	6,594,336.00	8,867,064.55
Other Receipt	25,710.00	329,977.00
User Charges	48,000.00	134,570.00
Misc. Receipts	-	58,491.00
<b>TOTAL (A)</b>	<b>7,962,988.00</b>	<b>9,390,102.55</b>
<b>Partner Contribution</b>		
	-	-
<b>TOTAL (B)</b>	<b>-</b>	<b>-</b>
<b>Refunds from Projects-Grant</b>		
	-	-
<b>TOTAL (C)</b>	<b>-</b>	<b>-</b>
<b>Refund of Working Capital Loan</b>		
	-	-
<b>TOTAL (D)</b>	<b>-</b>	<b>-</b>
<b>Total (A) + (B) + (C) + (D)</b>	<b>7,962,988.00</b>	<b>9,390,102.55</b>

NORTH EAST CENTRE FOR TECHNOLOGY APPLICATION AND REACH  
SCHEDULES FORMING PART OF INCOME & EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31.03.2024

<u>Schedule 11 - Increase / (Decrease) in stock of Finished Goods &amp; Work in Progress</u>	Current Year	Previous Year
a) Closing stock		
Finished Goods	2,874,229.27	2,874,229.27
Work-in-progress	-	-
b) Less: Opening Stock	-	-
Finished Goods	2,874,229.27	3,208,330.04
Work-in-progress	-	-
<b>NET INCREASE/(DECREASE) [a-b]</b>	-	(334,100.77)

<u>Schedule 12 - Establishment Expenses</u>	Current Year	Previous Year
1. Salaries	45,489,777.00	39,753,801.00
2. Allowances and Leave encashment	784,207.00	751,730.00
3. Employer Contribution to Provident Fund	574,821.00	612,009.00
4. Wages	636,018.00	924,491.00
5. Expenses on Employees' Retirement and Terminal Benefits		1,241,942.00
6. Staff Welfare Expenses	-	-
7. NPS Contribution	4,104,442.00	3,630,315.00
8. Others (Specify)		
Medical Reimbursement	441,751.00	212,244.00
Tuition Fee / CEA	162,000.00	166,500.00
EPF Administration Charges	23,472.00	24,981.00
<b>TOTAL</b>	<b>52,216,488.00</b>	<b>47,318,013.00</b>



NORTH EAST CENTRE FOR TECHNOLOGY APPLICATION AND REACH  
SCHEDULES FORMING PART OF INCOME & EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31.03.2024

Schedule 13 - Administrative Expenses etc.	Previous	
	Current Year	Current Year
a) Repairs and Maintenance	886,702.00	394,319.00
b) Rent, Rates and Taxes	4,191,900.00	793,029.00
c) Car Hire Charges	1,076,619.00	1,377,853.00
d) Postage & Courier Charges	55,108.00	113,280.00
e) Printing and Stationary	652,182.00	693,927.00
f) Traveling Expenses	2,769,638.00	2,840,418.00
g) Expenses on Seminar/Workshops	2,543,780.00	2,369,703.00
h) Meeting Expenses	175,936.00	377,908.00
i) Audit Fee	119,250.00	105,800.00
j) Advertisement Charges	387,062.00	153,943.00
k) Conveyance Charges	148,565.00	88,589.00
l) Telephone and Communication Charges	170,398.00	118,213.00
m) Internet Charges	1,377,057.00	941,465.00
n) Anti Virus Charges	514,946.00	-
o) Hindi Programme Expenses	202,871.00	58,500.00
p) Legal & Professional Charges	1,639,518.00	1,447,094.00
q) Testing Charges	-	50,327.00
r) Arbitration Expenses	382,500.00	306,750.00
s) Membership & Fees	296,315.00	457,092.00
t) AMC Charges	12,750.00	7,783.00
u) Shipping/Transportation Charges	283,054.00	12,683.00
v) Website Charges	161,630.00	134,811.49
w) Promotion & Publicity	465,467.00	156,700.00
x) MISC. Office Expenses	937,935.00	809,000.98
y) Electricity	225,320.00	152,416.00
z) Bank Charges	13,089.07	10,981.81
aa) Newspaper & periodicals	53,986.00	39,122.00
ab) Exhibition Expenses /Conclave Expenses	3,588,576.00	230,345.00
ac) Honorarium -Non Official	226,234.00	89,000.00
ad) Security Charges	375,101.00	280,541.00
ae) Gest House Maintenace Expense	347,124.00	243,984.00
af) Insurance Charges	22,738.00	12,657.00
ag) Training Expenses	574,990.00	4,267,010.00
ah) TDC Guwahati Expenes	7,602,768.00	3,821,751.00
ai)Renovation of NECTAR office Shillong & Quarters	2,679,824.00	278,707.00
aj)House Keeping Charges	886,209.00	275,975.00
ak) Consumable Items	166,416.00	145,862.00
al) Consultancy Charges/Service Charges	1,246.00	3,173,414.00
an)E-office Service Charges	5,900,714.00	651,441.00
<b>TOTAL</b>	<b>42,115,518.07</b>	<b>27,482,395.28</b>

NORTH EAST CENTRE FOR TECHNOLOGY APPLICATION AND REACH  
SCHEDULES FORMING PART OF INCOME & EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31.03.2024

Schedule 14 - Expenditure on Grants, Subsidies etc.	Current Year	Previous Current Year
a) Grants given to Institutions/Organizations		
Grant (Annexure 4)	66,451,315.00	78,255,779.00
Loan	-	-
Other Project Expenses	18,660,015.00	1,224,610.00
b) Subsidies given to Institutions/Organizations		
<b>TOTAL</b>	<b>85,111,330.00</b>	<b>79,480,389.00</b>

Schedule 15 - Prior Period Expenses	Current Year	Previous Current Year
a) Taxes	34,020.00	-
b) Misc Office Expense	12,400.00	18,900.00
c) CRA Charges	845.00	-
d) Car Hire Charges	129,040.00	-
e) Legal & Professional fess	77,495.00	321.00
f) News Paper & Periodicals	603.00	750.00
g) Telephone Expenses	13,803.00	35,658.00
h) Repair & Maintenance Expenses	-	4,700.00
i) Rent Warehouse/Shillong office	1,044,000.00	62,667.00
j) Printing Charges	-	2,400.00
k) Security Charges	-	24,480.00
l) Electricity Charges	-	243,361.00
m)Gratuity	876,923.00	173,654.00
n)Project Expenses	-	230,000.00
<b>TOTAL</b>	<b>2,189,129.00</b>	<b>796,891.00</b>

NORTH EAST CENTRE FOR TECHNOLOGY APPLICATION AND REACH

Annexure - 1

Administrative Expenses Payable

PARTICULARS	Current Year	Previous Year
Conveyance expenses Payable		2,524.00
Miscellaneous Office Expenses Payable		62,190.00
Electricity Payable		35,935.00
Travelling Expenses Payable (Domestic)		248,182.00
Security Charges Payable		66,627.00
Administrative Expenses Payable		23,965.00
Postage & Courier Charges Payable		1,404.00
Internet Charges Payable		35,006.00
House Keeping Charges Payable		25,494.00
Legal & Professional Fees Payable	78,480.00	105,480.00
News paper and periodical exp payable		1,080.00
Honorarium Charges payable		2,500.00
Car hire Charges payable		221,422.00
Intern Stipend payable	10,000.00	104,739.00
Salary payable for project staff	1,389,660.00	411,702.00
<b>TOTAL</b>	<b>1,478,140.00</b>	<b>1,348,250.00</b>

Annexure - 2

Establishment Expenses Payable

PARTICULARS	Current Year	Previous Year
NPS/EPF Payable	703,353.00	643,394.00
Salary Payable	3,327,093.00	2,984,791.00
QTR Charges Payable	13,064.00	-
Wages Payable	64,220.00	86,168.00
<b>TOTAL</b>	<b>4,107,730.00</b>	<b>3,714,353.00</b>

Annexure - 3

Staff Advance

PARTICULARS	Current Year	Previous Year
<b>Petty Cash Advance:</b>		
BK Manthan	3,000.00	3,000.00
Gavin Vandroff	30,000.00	14,892.00
Fedlia Diengdoh	20,000.00	20,000.00
Bharat Phukan	20,000.00	15,000.00
Ajit kumar	20,000.00	20,000.00
Rajdeep Sinha	20,000.00	-
Simon Phukan	20,000.00	-
<b>LTC advance</b>		
Debabrata Gogoi	62,000.00	-
Dr Colline Z. Renthlei	26,000.00	-
<b>HBA advance</b>		
Ankit Shrivastava	2,138,000.00	2,330,000.00
Somanath Nath	2,179,000.00	2,179,000.00
<b>Tour &amp; Other Advance:</b>		
B K Manthan	24,000.00	24,000.00
Manoranjan Deka	-	9,500.00
Ravi Singh	11,840.00	11,840.00
Akashay Kumar Padhi	46,000.00	-
Ram Kumar	16,000.00	-
Virender Kumar Yadav	30,000.00	-
Simanta Das	-	60,000.00
Birendra Kumar Sharma	30,000.00	-
Simon Phukan	100,000.00	30,000.00
Rakesh Kumar Sarmah	-	70,000.00
Ravi Kumar Singh	81,121.00	81,121.00
Dr Colline Z. Renthlei	100,000.00	-
Dr. Abhinav Kant	100,000.00	-
<b>TOTAL</b>	<b>5,076,961.00</b>	<b>3,868,353.00</b>



NORTH EAST CENTRE FOR TECHNOLOGY APPLICATION AND REACH

Annexure - 4

Grant

PARTICULARS	Current Year	Previous Year
<b>Ass to St Govern in Technology Aided Decision Supp</b>		
Honey Testing Laboratory-Dimapur(NBHM)	1,050,000.00	2,100,000.00
IOT Based Nurse Calling System	-	1,000,000.00
Mobile Clinic Patient Monitoring System	1,494,429.00	996,286.00
Patient Monitoring System	-	2,298,000.00
Solar Powered Cold Storage-Serchhip,Mizoram	-	440,000.00
Settingup Solar Power Cold Storage-Meghalaya	1,500,000.00	-
<b>Total (A)</b>	<b>4,044,429.00</b>	<b>6,834,286.00</b>
<b>Technology Assistance to State Government</b>		
Motif Design and Replication System of traditional	1,440,000.00	960,000.00
<b>Total (B)</b>	<b>1,440,000.00</b>	<b>960,000.00</b>
<b>Technology Consultation Projects</b>		
DPR-Preparatoin-KVIC		
Physiochem & Shelf Life Evaluation of Products-NIFT	234,500.00	209,167.00
Production & Marketing of Speciality Tea-AAU,Jorhat	-	627,000.00
Dev.of Food Box amd Liquid Container-IIT Delhi	-	338,000.00
<b>Total (C)</b>	<b>234,500.00</b>	<b>1,174,167.00</b>
<b>Technology Demonstartin and Induction Grant</b>		
CSIR-CIMAP(Develoement of Solar Aroma Distillation	374,645.00	191,400.00
Development of Kombucha-Paras Biosciences	180,000.00	760,000.00
Development of Virtual Laboratory-Assam	-	403,200.00
Dev.of Software for Gamusa Loom Type	(6,583.00)	919,000.00
Infra Upgradation of Textile & Fashion- RKM	-	1,000,000.00
Integrated Farming System for Marginal Farmers	-	420,000.00
Low Cost Water Treatment Plant-NIT,Manipur	352,000.00	-
Tulip Cultivation	265,230.00	-
Beekeeping Colony	270,000.00	-
Emulsified Meat Products Projects	1,000,000.00	-
Organic Cultivation of Mushroom-Saitul,Mizoram	-	313,000.00
Setting Up of Ginger & Turmeric Processing -Kamrup	-	669,000.00
Setting Up Smoking Unit with Electric Smoker-DO Nam	303,600.00	-
Setting Up Unit for Maufactue Bio-Sampler(Aavya)	-	1,500,000.00
Tumor Margin Detection-GRS India P.Ltd.	-	495,000.00
Waste to Wealth-Udalguri Farmers Coop Society	-	952,513.00
Low Cost User Friendly Broom Binding	640,000.00	-
Aerostatic Drones for Forest Surveillanc	944,000.00	944,000.00
Agriculture Integrated Farming Sikkim	315,200.00	315,200.00
Anti Microbial Coating(Mask)-3D Pasma Technology	-	547,912.00
Biodegradable Low-Cost Kit (IIT-Delhi)	246,400.00	246,000.00
Catalyzing the Traditional Kouna Craft	-	917,440.00
Development of Illicium Griffithi - Monyul	1,380,000.00	920,000.00
Development of Proejct Monitoring Dashboard -CEM	752,435.00	752,435.00
Dev.Instantaneous Hypochlorite Generator-AMPRICARE	621,600.00	789,600.00
Dev. of Training / Production-Bell Met Unit-IIT Guw	-	2,081,616.00
Dimoria Eri Cluster	320,000.00	320,000.00

Establishment of Spice & Aromatic Distillation Unit	1,077,000.00	718,000.00
Extraction and Processing of Lotus Fiber	485,000.00	1,940,000.00
Extraction of Pineapple Leaf Fiber-NIT Megh.	506,352.00	506,352.00
Hydraulic Ram Pump Irrigation	-	176,927.00
Innovation in Colored Pearls Production-Cotton Uni	260,000.00	260,000.00
Integrated Dairy Product (Dikhomukhu )	-	1,250,000.00
Integrated Innovations Utilising Thermal Engery Sto	264,224.00	1,980,000.00
Manufacturing of Compostable Bioplastic- Ecostarch	198,600.00	1,880,000.00
Multipurpose Eco Enzyme Processing Unit ( MEEPU)	1,180,620.00	787,140.00
Mushroom Cultivation -Assam (MDF)	-	1,500,000.00
Mushroom Spawn Production Unit	-	1,312,000.00
Recycling of Wast Wood to Make Furniture	250,000.00	1,000,000.00
Setting Up Ginger & Turmeric Proc.Unit Asaam	-	960,000.00
Setting Up Hand and Homemade Chocolate Making Plant	555,600.00	555,600.00
Setting Up Mustard Processing Unit-Data Consultancy	852,000.00	852,000.00
Setting Up Product Dev Unit-NER	500,000.00	2,000,000.00
Setting Up Rubber Plants-Ichamati Megh	117,420.00	469,680.00
Smart Water Tower-RKM Sohra	-	198,996.00
Solar Thermal Dryer Installtion-CSIR-CSMCRI	-	350,179.00
Tableware Using Pineapple Leaves-Yuvraj Ind.	-	900,000.00
Emulsified Meat Products Projects	1,000,000.00	-
Manufacturing of Biodegradable Cups and Plates	511,098.00	-
Pineapple Peeling Technology-UKB	1,184,000.00	-
Replacing Wheat Flour in Bakery Insustry-Project	990,000.00	-
Setting Up Fruit Wine Processing Unit	1,000,000.00	-
Setting Up King Chili Cultivation and Processing Un	1,000,000.00	-
Setting Up Lemon Processing Unit	2,000,000.00	-
Setting Up Micro Cashew Processing Unit	2,000,000.00	-
Setting Up of Language Cum Multimedia Lab	1,628,028.00	-
Setting Up Tea Procesing Unit-Mizoram	2,000,000.00	-
<b>Total (D)</b>	<b>27,518,469.00</b>	<b>35,054,190.00</b>
<b>Technology Delivery &amp; Services</b>		
Developing Habit of Sericulture -Assam Silk-SEWA	-	(747,000.00)
Inclusive Sustainable and Income Generation	651,152.00	-
Training & Skill Development at IITDC, Agartala	3,200,000.00	7,340,418.00
Mobile Skill Development Course in Assamese	800,000.00	-
Skill Development training for Visual Impairment	1,356,000.00	-
OXON Mentors AtmanirbharNE( Mindshare)	-	1,254,000.00
Training Programme on Bmaboo Products	2,276,603.00	-
Training Programme on Handsa on Training	367,000.00	-
Skill Development Training-NIT (A.P.)	2,620,900.00	5,463,100.00
Skillpreneurship Programme in NER-EDI	-	515,000.00
Training on Banana Fiber Handloom and Handicraft-	327,500.00	327,500.00
Training Programme on Micropropagation	162,035.00	162,035.00
Promoting Techno-Entrepreneurship in NER	1,339,200.00	4,226,590.00
Awakening the Hiden Culture NER Music for Living	1,497,500.00	1,000,000.00
Bee Keeping Trainings-Nagaland	-	225,500.00
Creating Nutritional Superfood From Mushrooms	958,800.00	958,800.00

Digitization and Documentation of Culatural Heritag	-	220,000.00
Drone Awareness Training Programme	938,490.00	938,490.00
Livelihood Generation Through Tofu Value Addtion	450,000.00	450,000.00
Manu.Arecanut Leaf Plate-FISS	-	990,500.00
Manuf of Arecanut Leaf Plate, Tripura	-	1,000,000.00
<b>Total (E)</b>	<b>16,945,180.00</b>	<b>24,324,933.00</b>

<b>Technology Extension &amp; Consolidation</b>		
Banana Food & Fibre Extraction-Khankho-Lom	-	1,435,680.00
Cocoa Primary Processing and Value Addition	680,000.00	680,000.00
Eco- Dev of Rural Farmers Mushroom Cultivation	-	1,175,000.00
Eco-Friendly Cowdung Pots for Nursery	-	575,193.00
Empowerment of Rural Farmers Tech Intervention-Must	-	822,500.00
Livelihood Enhancement of of Rulral Farmers-	398,165.00	796,330.00
Preprocessing Centre for Horticultural Produce	-	1,000,000.00
Processing of Various Fruits & Vegetables-NUNSEI	-	2,500,000.00
Tech. Intervention& Upgrad in Yoga Mat Prod-Simang	1,469,243.00	640,000.00
Yoga Mat Water Reed(Kouna) Env & HR Centre	-	283,500.00
Enhancement of the Existing Food Manu.	2,000,000.00	-
Establishing Green Briquette Enterprise	997,391.00	-
Establishment of Community Radio (CRS)	2,307,598.00	-
Estb. of Tea Manufacturing Unit-Nagaland	1,524,840.00	-
Est.of Eri Spun Mill	1,000,000.00	-
Large Scale Production of Eco Friendly Paper Cups	970,000.00	-
Livehood Enhancement -Integrated Spiece Pro-Unit	1,000,000.00	-
Production of Vegan Leather Products Banana Fiber	751,500.00	-
Promotion of Traditional Naga Tribal Food Products	1,000,000.00	-
Recycling & Reusing Wood Waste to Usable Products	1,000,000.00	-
Scientific Beekeeping for Develop of RC-Kanyaka/CRE	1,170,000.00	-
<b>Total (F)</b>	<b>16,268,737.00</b>	<b>9,908,203.00</b>
<b>TOTAL EXPENDITURE ON GRANTS (A+B+C+D+E+F)</b>	<b>66,451,315.00</b>	<b>78,255,779.00</b>

**Annexure - 5**

<b>Advances to Suppliers and Others</b>	<b>Current Year</b>	<b>Previous Year</b>
Hari Om Sales and Service	2,860,089.00	2,860,089.00
S. P. Engineers	1,658,197.00	1,658,197.00
FPV Model International	83,667.00	83,667.00
RC Bazar	87,388.00	87,388.00
Vyom Vista	171,750.00	171,750.00
Karunesh Enterprises	489,441.00	489,441.00
<b>TOTAL</b>	<b>5,350,532.00</b>	<b>5,350,532.00</b>



## ANNEXURE A

### NORTH CENTRE FOR TECHNOLOGY APPLICATION AND REACH (NECTAR)

#### SIGNIFICANT ACCOUNTING POLICIES

1. The Society has adopted accrual basis of accounting. The annual accounts have been prepared in the uniform format of accounts applicable to Central autonomous bodies.
2. Fixed assets are stated at cost less accumulated depreciation. Cost comprises the purchase price and any other cost of bringing the asset to its present location and condition.
3. Depreciation on fixed assets is computed on the written down value (WDV) method at the rates and in the manner prescribed under the provisions of Income Tax Act.
4. Retirement benefits in the form of provident fund and superannuation fund are defined benefit contribution schemes and the contributions are charged to the statement of income and expenditure in the year when such contribution is due.
5. Gratuity benefits is accountant for and paid as per the internal calculations made by the management without any actuarial valuation method.
6. Inventory is valued at Cost Price or NRV, whichever is lower.
7. Amount released under various projects are accounted as expenditure of the year in which payment is made irrespective of the fact whether the amount is fully utilized towards the specific objective or not.
8. All disbursements (irrespective of its utilization) for projects are treated as expenditure during the financial year and assets created, if any, out of the said disbursement to the project, are not accounted for as assets in the books of the society.

**For Dinesh Jain & Associates**

**Chartered Accountants**

**Firm Registration No: 004885N**

**A. Dinesh Kumar Jam**  
(Partner)  
MRN: 082033  
UDIN:

**Accounts Manager**  
(NECTAR)

**Sr. Admin Officer** **Director General**  
(NECTAR) (NECTAR)

Date: 25.07.2024  
Place: New Delhi



### **Headquarter :**

📍 Survey of India Campus, Bonnie Brae Estate,  
Barik Point, Shillong-793001, Meghalaya

☎ 0364-2505034 (Administrative) / 2506085  
(Reception)

✉ nectar@nectar.org.in

### **New Delhi Office Address :**

📍 2nd Floor, Vishwakarma Bhawan, Shaheed  
Jeet Singh Marg, New Delhi -110016

☎ 011-26566778, 26513967

✉ nectar@nectar.org.in

### **Guwahati Office :**

📍 North East Centre for Technology Application  
and Reach (NECTAR)  
First Floor, Guwahati Biotech Park, Amingaon,  
Namati Jalah, Guwahati, Assam - 781031

### **Agartala Office :**

📍 Bamboo & Cane Development Institute (BCDI)  
C/o North East Centre for Technology Application  
& Reach (NECTAR)  
Lichubagan, P. O. - Agartala Secretariat  
Agartala – 799 010 (Tripura)