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Director's Desk

Foreword



There is a dire need to empower and enlighten the middle level extension officials on the issues plaguing in agri and allied sectors like disaster management, alternative energy options, nutrition management in livestock, carbon trading, community management, one health, food waste management, Human wild life conflict, building networks and partnerships and Natural Resource Management.

The Extension Education Institute, Southern Region took the lead to conduct the capacity building programmes on all the above areas to capacitate the middle level extension officials of the Southern Region. These trained officials will in turn facilitate the farmers to apply all these concepts at field level for faster adoption of the technologies in Agri and Allied sectors and improving the livelihoods of the farming community.

These officers will in turn empower the farmers on such above niche areas to help improve their agricultural practices, and increase their incomes through increased productivity, improved livelihoods, enhanced food security, environmental stewardship, and market competitiveness. Because of lack of access by the farmers to education and training opportunities resulting in suboptimal production, reduced profitability, and increased poverty. The empowered farmers by the middle level extension officers are well-versed in agritech and can play a significant role in promoting sustainable agriculture, improving food safety and quality, and enhancing the economic and social outcomes of rural communities.

(Dr. M. Jagan Mohan Reddy)
Director, EEI, Hyderabad



Natural Resource Management in Agri. & Allied Sectors

Effective natural resources management in agriculture and allied sectors is essential for achieving long-term sustainability, environmental protection, economic growth, and social well-being. By adopting sustainable practices and promoting responsible resource use, a better future is ensured for current and future generations.

Extension Education Institute EEI, Hyderabad has organized a comprehensive online training program titled "ECHO - Natural Resource Management in Agri. & Allied Sectors" from July 2nd - 06th July, 2024.

Contents covered in the programme were – Natural Resource Management in Agri and allied sectors- An Overview, Soil and Water management strategies for climate smart agriculture, Biodiversity Conservation through remote sensing & GIS techniques, Natural farming for restoration of natural resources, Carbon trading in Agri and Allied sectors, Climate smart ITKS in Agri. and allied sectors, Integrated Pest Management (IPM) and crop rotation strategies, Smart irrigation techniques, Soil and Water management strategies for climate smart agriculture, Soil health management and conservation, Economic benefits of sustainable natural resource management, Extension strategies to promote natural resource management, Gender mainstreaming and budgeting, GOI schemes, programs and initiatives

During the inaugural event, Dr. M. Jagan Mohan Reddy, Director, EEI stated that sustainable management of

natural resources shall strike a harmonious balance between economic, social, and environmental considerations, ensuring that the cost and benefits are equitably distributed and prevent further damage to the environment by avoiding over-consumption of natural resources

During the valedictory programme, Dr. M. Jagan Mohan Reddy Director, EEI has advised the participating officials to practice the extension strategies like Capacity building and training, Participatory approaches, ICTs, Extension publications and Collaborative networks in natural resource management aiming to educate, engage, and empower stakeholders, particularly farmers and rural communities, to adopt sustainable practices in restoring the glory of the natural resources.

The participants felt that the contents like Natural farming for restoration of natural resources, Biodiversity conservation, Carbon trading, Climate smart ITKs in Agriculture, Integrated pest management strategies, Smart irrigation techniques, Soil health management and conservation and GOI Schemes are very much useful for performing their job roles effectively.

A total of Eighty one (81) trainees participated from the Agriculture, Agri Business and Marketing, Fisheries, Forestry, and Dairy Development Departments of Kerala, Tamilnadu, Odisha, Andhra Pradesh, Andaman & Nicobar Islands and Telangana. The program was coordinated by Dr.N. Praveen, Professor, EEI, Hyderabad.



Dr. M. Jagan Mohan Reddy, Director, EEI and Dr.N. Praveen, Professor and Course coordinator, addressing the Participants during valedictory session



Participants presence online during the training programme



Nutrition Management for enhancing Livestock Productivity

Livestock farming is an integral part of crop farming and contributes substantially to household nutritional security and poverty alleviation through increased household income. The returns from livestock especially dairying and mixed farming in small and medium holdings are larger and highly sustainable. About 20.5 million people depend upon livestock for their livelihood. Livestock contributed 16% to the income of small farm households as against an average of 14% for all rural households. Livestock provides livelihood to two-third of rural community. It also provides employment about 8.8 % of the population in India. India has vast livestock resources. Livestock sector contributes 4.11% to the GDP and 25.6% to the total Agriculture GDP (2019 livestock census). Though the cattle wealth is quite abundant in terms of population the production from these animals is very poor viz., 987 kgs per lactation whereas the world average is 2038 kgs per lactation. The main reasons for this shortcoming is the abundant population of livestock, chronic shortage of feed and fodder, poor nutritive value of the available feed and fodder. The high producing livestock requires a diet that supplies the nutrient needs for high milk production. Carbohydrates, amino acids, fatty acids, minerals, vitamins, and water are all nutrients required by the lactating livestock. However, in order to develop the livestock which produces high milk yield, it begins with the nutrition.

In this connection, the Extension Education Institute (EEI) Hyderabad organized an ECHO online training program titled "**ECHO - Nutrition Management for enhancing Livestock Productivity**" from 08th to 12th July, 2024.

Contents covered in the programme were – Nutrition Management for enhancing livestock productivity : An Overview, Scientific feeding practices for



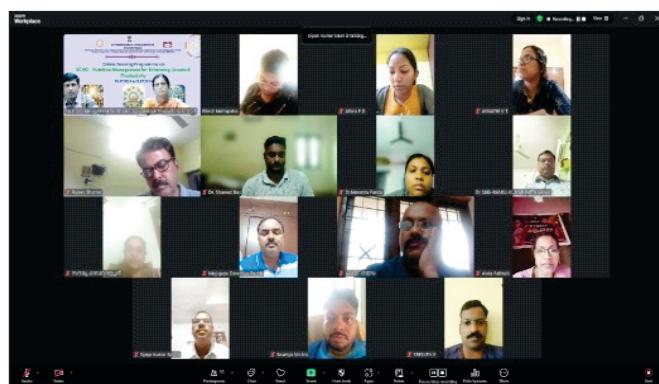
Dr. M. Jagan Mohan Reddy, Director, EEI and Dr. P. Vijaya Lakshmi, Professor and Course Coordinator addressing the participants during valedictory session

calves, Heifers, lactating and pregnant mother, Feeding strategies for ameliorating negative energy balance in postpartum cows, Low cost feed formulations for enhancing livestock productivity, Promoting high yielding varieties of fodder to meet nutritional security in dairy, Season based feeding practices to maintain productivity in dairy animals, Backyard poultry production and nutrition management under free range and semi intensive system of rearing, Managing fodder shortages: Hydroponic fodder and silage, Profitable pig husbandry: Nutrition and housing management, Importance of balanced and economical nutrition for sheep and goats &goi programmes and schemes, Prevention and control of important production diseases in dairy animals by nutritional enrichment, Extension strategies to promote nutrition management for enhancing livestock productivity and Gender mainstreaming and budgeting in livestock sector.

During the inaugural ceremony, Dr. M. Jagan Mohan Reddy, Director, EEI stressed the importance of nutrition management for enhancing livestock, productivity, Maintenance of livestock, export of livestock products for improving the socio economic status of farming community.

Dr. M. Jagan Mohan Reddy, Director, EEI graced the valedictory session and congratulated the participants for successful completion of the training programme. He encouraged the officers to take the learnings to back home and guide the farmers about nutrition management particularly, season based feeding practices to maintain productivity and promoting high yielding fodder varieties to meet nutritional security.

Participants felt that the training programme was very informative and need of the hour. All sessions were very useful and refreshed the knowledge, especially



Participants presence online during the training programme



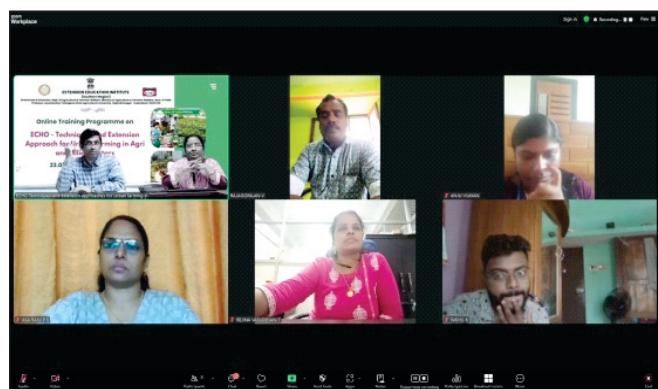
feeding strategies for ameliorating negative energy balance in postpartum cows, managing fodder shortage-hydroponic fodder and silage, profitable poultry and pig husbandry, balanced and economical nutrition for sheep and goat are very information.

Techniques and Extension Approaches for Urban Farming in Agriculture and Allied Sectors

Urban Agriculture (UA) provides food products from different types of crops, animals, fish as well as non food products. Green roof tops with vegetable and fruit plants provide chemical free food and can make an important contribution to household food security, especially in times of crisis or shortages of food or natural calamities.

Recognizing these imperatives, the Extension Education Institute (EEI), Hyderabad organized an online training program titled "ECHO - Techniques and Extension Approaches for Urban Farming in Agriculture and Allied Sectors" from 23rd - 27th July, 2024.

Contents covered in the programme were – Techniques and Extension approaches for urban farming in agriculture and allied sectors, Nutri Sensitive Urban Farming, Urban forestry and Carbon credits: Opportunities and challenges, Sharing of expériences in urban natural garden, Global innovations in Urban farming, Mushroom farming: A boon for urban dwellers, Opportunities for urban fisheries, Traditional and digital interventions of successful Urban gardeners, Livestock and Poultry enterprises in Urban and Periurban areas, Bee keeping: a profitable subsidiary enterprise, entrepreneurship in urban farming, GOI schemes and gender budgeting. Case study, group discussions in break out rooms, and back home planning on transfer of learnings to clientele.



Dr. M. Jagan Mohan Reddy, Director, EEI and Dr. R. Vasantha, Professor and Course coordinator addressing the participants during valedictory session

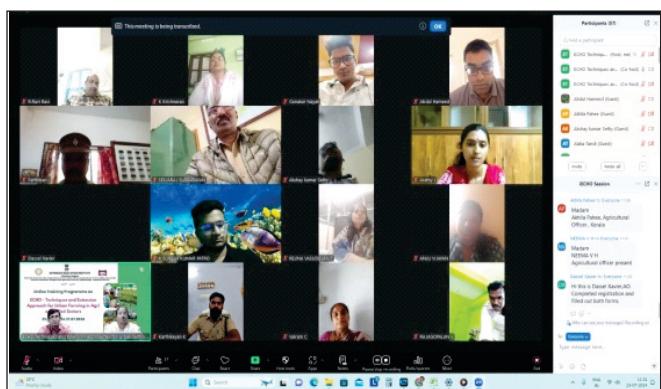
A total of Fifty five (55) trainees participated from the Animal Husbandry and Dairy Development Departments of Kerela, Odisha, and Telangana. The program was coordinated by Dr. P. Vijaya Lakshmi, Professor, EEI, Hyderabad.

Virtual terrace garden visit was conducted to the terrace of Telanganahorticulture training institute, Nampally, Hyderabad. In which terrace garden design, various containers, irrigation, pot filling, aquaponics, cultivation methods of various types of fruit, vegetable and flower plants, techniques like, trellis, grow bags, silpalin bags, organic inputs were explained during field visit

During hands on training, an active trainee is assigned the role of case presenter, she presented the issue of slow progress of Urban farming in case template provided which is followed by small group discussions in breakout rooms and presentation of solutions by participants.

During inauguration of the training program, Dr M. Jagan Mohan Reddy, Director, EEI, Hyderabad explained the importance and need of this training to the participants. He added that urban farming plays a crucial role in the development of sustainable and local food systems, ensuring that city dwellers have easy access to fresh and healthy food. He requested trainees to be attentive in the sessions and be interactive

During valedictory, Dr M. Jagan Mohan Reddy, Director, EEI Hyderabad requested the trainees for immediate back home application of learnings. He suggested participants for self practice of simple



Participants presence during the online training



technologies like microgreens, leafy vegetables etc before suggesting others. He asked them to visit schools and colleges and motivate the students and faculty for Organic urban gardening.

With regard to effectiveness of training programme 42% and 40% of trainees felt that, the training was Excellent and Very good respectively. Few of them suggested to include topics like Economics for urban

farming, information on exotic fruit plants, varieties and package of practices and urban area waste land development in future courses of this type.

A total of fifty (50) trainees participated from Agriculture, Forestry and Fisheries Departments of Andhra Pradesh, Odisha and Andaman & Nicobar. The program was coordinated by Dr. R. Vasantha, Professor, EEI, Hyderabad.

Emerging trends in Fisheries sector for enhancing professional competencies

A training program on emerging trends in the fisheries sector is crucial for enhancing professional competencies and addressing the evolving challenges and opportunities in the industry. Here are some key aspects of its importance: Participants learn about cutting-edge breeding techniques, advanced feed formulations, and sustainable aquaculture practices, improving efficiency and productivity. Training includes the use of automated systems and artificial intelligence in monitoring and managing fish farms, leading to more precise and efficient operations. Emphasis on reducing the environmental footprint of fisheries through sustainable practices and responsible resource management

Recognizing these imperatives, the Extension Education Institute (EEI) Hyderabad organized an online training program titled "ECHO - Emerging trends in Fisheries sector for enhancing professional competencies" from 23rd - 27th July, 2024.

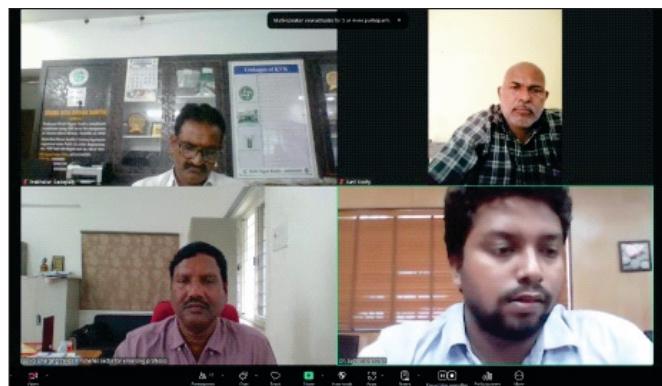
Contents covered in the programme were – New farming technologies in Fisheries Sector – An Overview; Current trends and future prospects in the fisheries sector, Technological innovations in Aquaculture, Disease diagnosis and Management, Biosecurity measures in fisheries, Health management in aquaculture, Digital technologies in fisheries: Applications of IoT, AI, and data analytics in fish farming and management, Best practices for sustainable fishery operations, Management practices, Stock assessment and monitoring, Fisheries policy and regulations national and international environmental policies, Market trends and trade in fisheries, Innovations in post-harvest technologies and value addition, Aquaponics and integrated farming systems, Entrepreneurship and business development in fisheries, Extension strategies to promote fish farming, GOI schemes, programs and initiatives in fisheries sector and Gender mainstreaming and budgeting.

During the inauguration program the Course coordinator highlighted the importance of innovation in fisheries. He emphasized the need for sustainable practices to meet the growing demand. He explained the program's role in shaping a resilient and forward-thinking fisheries industry.

During valediction of the training program, Dr. M. Jagan Mohan Reddy, Director, EEI commended the participants' engagement and dedication. He praised the program's impact on professional growth and he emphasized ongoing learning and collaboration also highlighted the program's success in fostering future-ready professionals.

Participants found the training program was highly practical and informative. They appreciated the actionable insights on sustainable practices and innovative techniques. The content was directly applicable to their work, enhancing their professional skills. The program equipped them to implement new strategies effectively.

A total of Eighty one (81) trainees participated from Fisheries Department of Andhra Pradesh, Odisha and Andaman & Nicobar. The program was coordinated by Dr. S. Chandrashekhar, Professor, EEI, Hyderabad.



Dr. S. Chandrashekhar, Professor and Course coordinator addressing the participants during valedictory session



Disaster Management and Mitigation Strategies in Agriculture and Allied Sectors

Human vulnerability to disasters is an age-old phenomenon. Disasters play havoc with people's lives results in death, destruction, misery and trauma. The unique geo climatic conditions of our country make this region vulnerable to natural disasters. There are varied reasons for occurrence of disasters. Modernization and industrialization have disrupted the natural resource balance. This, along with alarming increase in population, depletion of resources. Lack of knowledge and skills, rising economic disparities are considered to be mainly responsible for the vulnerability of society to these catastrophes. One of the most direct ways disasters affect agriculture is through lower-than-expected production by weather changes or variations in physical conditions like cyclones, floods and droughts resulting in disruption of people's livelihoods. Thirty five per cent of world crop production is lost due to pests, disease, wild animals, insects and weeds. Past outbreaks are generally the result of a combination of temperature, monoculture of crops, introduction of plants to new locations and weather pattern.

Keeping this in view, EEI has taken initiative in conducting this training program which focus on unravelling facts of Disaster management and Mitigation strategies in Agriculture and Allied Sectors from 30th July - 03rd August, 2024 in online mode.

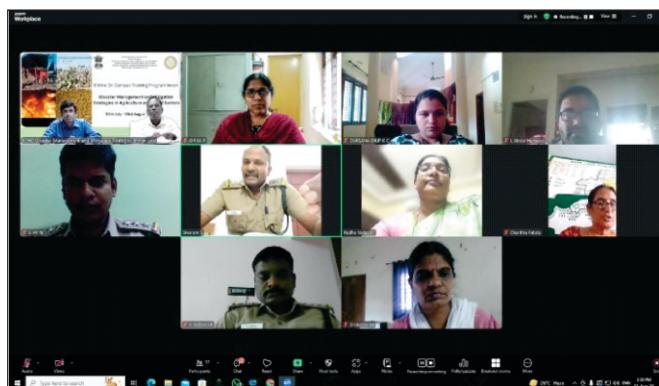
Contents covered in the programme were - Overview on disaster management and livelihoods, Crop Insurance and Disaster Management, Disaster management and mitigation strategies in agriculture and

horticulture crops, Disaster forecast systems and SOP, Role of INCOIS in Cyclone, Flood and tsunami management, Livestock management and mitigation strategies during disasters, Role of Remote sensing satellite data in Disaster Management, Disaster management in fisheries and aquaculture, Land slide management, Govt. of India schemes and programmes and gender budgeting.

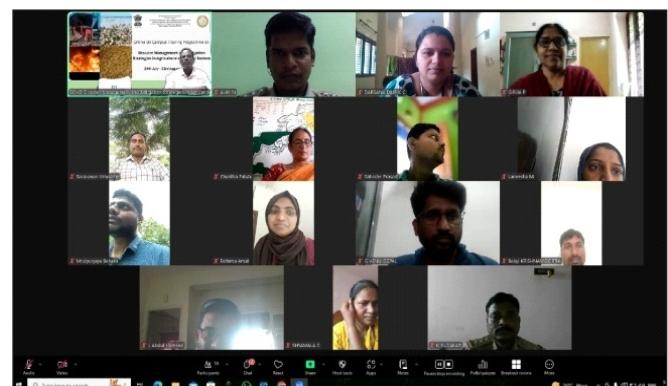
During the inaugural event, Dr. M. Jagan Mohan Reddy Director, EEI stated that sustainable management of natural resources shall strike a harmonious balance between economic, social, and environmental considerations, Ensuring that the costs and benefits are equitably distributed and prevent further damage to the environment by avoiding over-consumption of natural resources.

During the valedictory programme, Dr. M. Jagan Mohan Reddy Director, EEI, Hyderabad highlighted that cropped area of the country is vulnerable to pest, disease, insects and weeds, therefore an effective and regular pest surveillance system is to be recommended, which would continuously monitor pest activity through an exclusive network. State government needs to be more proactive in handling disaster related issues leading to effective management in agriculture.

A total of sixty (60) trainees participated from Departments of Agriculture and Allied Sectors, South Indian States. The programme was coordinated by Dr. K. MadhuBabu and Dr. N. Praveen, Professors, EEI, Hyderabad.



Dr. M. Jagan Mohan Reddy, Director, EEI and Dr. N. Praveen, Professor & Course Coordinator along with participants on board during the training programme





Homestead Technologies and Extension strategies for Women officers in Agri and Allied Sectors

Homestead farming satisfies the requirements of sustainability and is initiated as an answer to the environmental sufferings caused by the indiscriminate use of chemical pesticides and synthetic fertilizers. It is a system of farming done to repair, maintain and improve the ecological balance. Hence this training is conceived to upgrade knowledge of middle level extension officers on homestead technologies.

Recognizing these imperatives, the Extension Education Institute (EEI) Hyderabad organized an online training program titled "ECHO - Homestead Technologies and Extension strategies for Women officers in Agri and Allied Sectors" from 5th – 9th August, 2024.

Contents covered in the programme were – Overview on Homestead technologies, Nutrisensitive homestead farming, Organic kitchen gardening and Extension strategies for profitable homestead farming, Ecocolours: Cottage industry for homestead farms, Medicinal and aromatic plants in homestead farming, Gender budgeting and GOI Schemes in Urban farming, Sharing of experiences in Bio hitechyster mushroom cultivation, Aquaculture for homestead farms, Production of value added products in homestead farming, Profitable homestead enterprises: Poultry, Rabbit, Swine, Sheep, Goat and Dairy, Entrepreneurship in beekeeping and Processing of locally grown food crops in homestead farms as an enterprise and case based learning

A virtual tour is organised to honey extraction field located in Narsaraopet Village, Palnadu, Andhra Pradesh. Number of boxes to be kept on acre basis for different crops



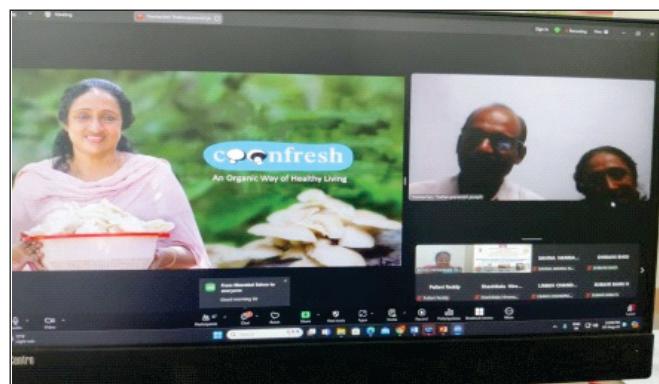
Dr. M. Jagan Mohan Reddy, Director, EEI and Dr. R. Vasantha, Professor and Course coordinator addressing the participants during valedictory session

like Sunflower, Aizwan and fruit crops etc, equipment used for Honey extraction, safety precautions taken by workers, identification of various types of bees, their feeding habits etc., were explained in detail

During hands on training, New methodology administered is Case based learning A homestead farmer facing an issue in farming was selected for the case study with the help of trainees. Smt Dhanalaxmi, ADA, Karnataka, an active trainee was assigned the role of case presenter and asked to prepare case study of the selected farmer in the given case template. On the last day of training, case presenter explained the case in detail, later participants are assigned to various breakout rooms for discussion to arrive at different solutions to solve farmer problem. Then group wise solutions were presented by leader of each group on the farmer case.

Inauguration is conducted by Dr. R. Vasantha, Course coordinator and informed the trainees that Homestead farming is a specialized agricultural production or farming system surrounding the home of farmers. She also explained its importance in the current era of indiscriminate chemical farming. Later she briefed about the components of Homestead farming. At the end, daily schedule, rules and mandatory instructions were explained to trainees clearly.

During valediction, Dr. M. Jagan Mohan Reddy, Director, EEI, appreciated the participants for their enthusiastic interaction throughout the training and stated that homestead farming, when combined with a well-balanced combination of agro-climatic agricultural



Participants presence online during the training programme



enterprises, helps to enhance farmer income and family labour employment. He also opined that homestead components recycle farm wastes more successfully. He urged the trainees to transfer the homestead technologies they had learnt to as many farmers as they could.

Trainees from fisheries department, Odisha felt that they shall advise woman farmers to take up backyard Biofloc farming or Ornamental fish farming. Horticulture officers of Odisha expressed that they can grow vegetables in small patches of land so that chemical free food can be

consumed. Few trainees indicated that they shall transfer learnings on mushroom and apiculture enterprises to farmers.

A total of forty eight (48) trainees participated from Agriculture, Horticulture, Fisheries, Sericulture of Andhra Pradesh, Telangana, Kerala, Tamil Nadu, Odisha, and the Union Territory of Andaman and Nicobar Islands. The program was coordinated by Dr. R. Vasantha, Professor, EEI, Hyderabad.

Artificial Intelligence and IOT applications in agri and allied sectors

Artificial Intelligence (AI) and Internet of Things (IoT) applications have become increasingly important in the agriculture and allied sectors due to their potential to revolutionize various aspects of farming, livestock management, and supply chain operations. AI and IoT technologies enable farmers and agricultural businesses to optimize their operations, leading to increased efficiency and productivity. Through the use of data-driven insights and real-time monitoring, farmers can make informed decisions regarding irrigation, fertilization, pest control, and crop management. IoT devices such as sensors, drones, and satellite imagery provide valuable data that AI algorithms can analyse to detect patterns. Predict crop yield, and optimize resource allocation and situations prone to disasters. AI and IoT enable precision agriculture techniques, which involve applying inputs such as water, fertilizers, and pesticides in a targeted manner based on the specific needs of each crop or field area and nutrients and medicines to control diseases in livestock by collecting data from sensors, Drones, satellites and AI algorithms can analyse the information and provide recommendations for

precise actions, reducing waste and environmental impact while maximizing crop yields. IoT devices, such as wearable sensors and smart monitoring systems, can be used to track and monitor livestock health, behaviour, and environmental conditions. AI and IoT technologies play a crucial role in optimizing the agricultural supply chain. From tracking the movement of goods and monitoring storage conditions to forecasting demand and optimizing logistics, these technologies can improve the efficiency and traceability of agricultural products. By automating processes and reducing manual errors, AI and IoT can enhance food safety, reduce waste, and facilitate faster and more reliable deliveries. With the increasing need for sustainable farming practices, AI and IoT applications provide valuable tools for resource management.

In view of the above, the Extension Education Institute (EEI), Hyderabad organized an online training program titled "ECHO - Artificial Intelligence and IOT applications in agri and allied sectors" from 5th – 9th August, 2024.



Dr. M. Jagan Mohan Reddy, Director, EEI and Dr. P. Vijaya Lakshmi, Professor, Course coordinator addressing the participants during valedictory session



Participants presence online during the training programme



Contents covered in the programme were – Introduction to AI and IoT in agri and allied sectors, AI and IoT applications in livestock sector, AI and IoT applications for agri and allied waste management, IoT applications in agri and allied sectors : Sharing of experiences, Drones and AI: A new combination for crop and fisheries protection, AI & IoT applications in fisheries sector, AI and IoT applications in farm mechanization in agri and allied sectors, Precision farming in agriculture, Gender mainstreaming and budgeting, AI & ML applications in agri and allied sectors, sensitization of farmers on cyber crimes, GoI programmes and schemes in agri and allied sectors and Successful applications of AI, IOT, BCT, RS & Robotic technologies in agri and allied sectors

During the inaugural programme Dr. P. Vijaya Lakshmi, Course coordinator briefed about the programme on Artificial Intelligence and IOT applications in agri and allied sectors.

Dr. M. Jagan Mohan Reddy, Director, EEI graced the valedictory session and congratulated the participants for

successful completion of the training programme. He encouraged the officers to take the learnings to back home and sensitize the peers, subordinates and farming community about Artificial intelligence and IoT applications in agri and allied sectors.

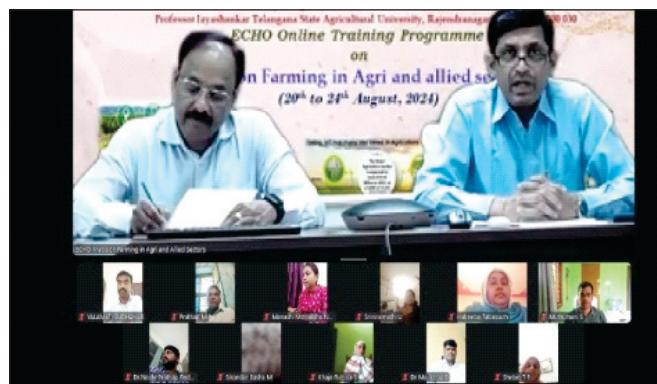
During feedback, Participants felt that training programme was very informative, thought provoking and need of the hour. All sessions were very useful, especially AI & IOT applications in agriculture, livestock sector, fisheries sector, AI & IOT applications in waste management and precision farming etc.,

A total of forty six (46) trainees participated from Departments of Agriculture, Horticulture, Forestry, Agricultural Engineering, Dairy development, Veterinary and Animal husbandry and VKVs of Andhra Pradesh, Telangana, Kerala, Tamil Nadu, Odisha, and the Union Territory of Andaman and Nicobar Islands. The program was coordinated by Dr. P. Vijaya Lakshmi, Professor, EEI, Hyderabad.

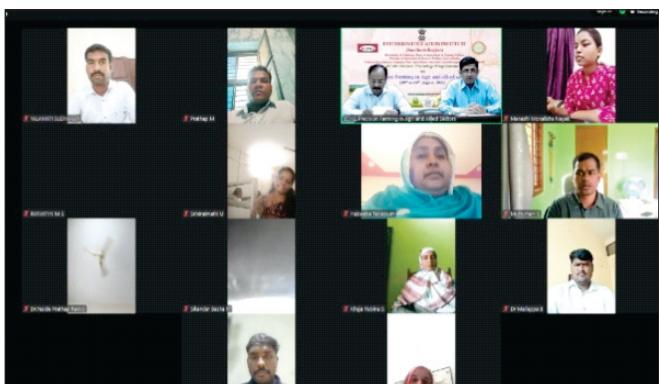
Precision Farming in Agri and Allied sectors

Agriculture is the backbone of the Indian economy and the villages are the lifelines of growth of India. Precision agriculture is a pro-active approach that reduces some of the risks and variables common to agriculture. The concept of precision agriculture offers the promise of increasing productivity while decreasing production costs and minimizing environmental impacts. Precision Agriculture is changing the way Indian farmers and agribusinesses view the land from which they reap their profits. It's about collecting timely geospatial information

on soil-plant-animal requirements and prescribing and applying site-specific treatments to increase agricultural production and protect the environment. Precision Farming is gaining in popularity largely due to the introduction of high technology tools into the agricultural community that is more accurate, cost-effective, and user-friendly. In the light of today's urgent need, there should be an all-out effort to use new technological inputs for the development of our society, as well as to make the "Green Revolution" an "Evergreen Revolution".



Dr. M. Jagan Mohan Reddy, Director, EEI and Dr. K. MadhuBabu, Professor, Course coordinator addressing the participants during valedictory session



Participants presence online during the training programme



In view of the above, the Extension Education Institute (EEI), Hyderabad organized an Online Oncampus training program titled "ECHO - Precision Farming in Agri and Allied sectors" from 20th – 24th August, 2024.

Contents covered in the programme were – Prospects and Challenges of precision farming in India, Applications of Geospatial technologies in land evaluation studies, Smart Farming, Smart Irrigation, Hi-Tech Agriculture, Poly houses and digital farming, Mechanization in Precision farming, Precision weed management practices, Site specific Nutrient Management, Fertigation and digital farming, Sensors in precision water management, Precision livestock farming, Application of crop simulation models for Precision Agriculture, Use of Drones in Agriculture, Programmes & Schemes of GOI to Promote Agriculture and Allied Sectors and Gender budgeting and case presentations.

Dr. M. Jagan Mohan Reddy, Director, EEI expressed during the inaugural session of the programme that, precision agriculture increases efficiency and productivity by enabling farmers to target their inputs such as seeds, fertilisers and pesticides precisely in their farms to generate more output with reasonable and calibrated investment. He has also told that, it leverages advanced

digital technologies and will play a significant role in the third modern farming revolution.

During valediction, the Director, EEI, Dr. M. Jagan Mohan Reddy said that, Precision Agriculture is also called Site-Specific Crop Management (SSCM) is a technology - enabled approach to farming management that observes, measures and analysis the needs of identified fields and crops. He appealed the participants to operationalize all the leanings at field level and impress the farmers to get benefited with precision farming technologies.

During feedback, the participants felt that, all the sessions were nicely organised. Few more sessions on Drones may be planned. The sessions were highly useful for forestry Department also. Some more forestry aspects may be included. The IECHO platform is very easy and user friendly. The programme has been organised systematically making the participants learn about the core concepts of Precision farming.

A total of fifty two (52) trainees participated from Departments of Agriculture, Forestry, SAMETI and SAUs and KVKS of Andhra Pradesh, Tamil Nadu, Karnataka, Andhra Pradesh, Odisha and Kerala. The program was coordinated by Dr. K. MadhuBabu, Professor, EEI, Hyderabad.

Building Networks and Partnerships (PPP) for Profitability in Agri and Allied sectors

India has systematically rolled out a PPP (Public Private Partnerships) program for the delivery of high-priority public utilities and infrastructure and, over the last decade, developed what is perhaps one of the largest PPP Programs in the world. As per the World Bank, India is one of the leading countries in terms of readiness for PPPs with ~2000 PPP projects in various stages of implementation. As per the 2018 Infrascope Report of the Economist Intelligence Unit, India ranked fourth in Asia with first rank in Investment and business Climate and second rank in Finance parameters. India launched the National Infrastructure Pipeline ('NIP'), in 2020 which envisages an investment of Rs. 111 lakh crores over 2020 to 2025 i.e., an annual average investment of ~Rs. 22 lakh crores. Public Private Partnerships (PPP) have been identified as a valuable instrument to speed up infrastructure development and investments envisaged under NIP. PPPs in agriculture are often marketed as having the capacity to

modernize the agriculture industry and bring many allowances to help smallholder farmers achieve sustainable agricultural growth.

In India, private and public players are investing actively in the agriculture sector. The limitations of PPP such as focus mainly on high end technologies, high profit margin areas and crops, perceived mistrust and lack of transparency and non-adherence to agreement among partners could be overcome through appropriate working mechanism and policy support. The most important factor that has to be prioritized in this area is the capacity building of Extension workers.

In view of the above, the Extension Education Institute (EEI), Hyderabad organized an Online On campus training program titled "ECHO - Building Networks and Partnerships (PPP) for profitability in Agri and Allied sectors" from 02nd to 06th September, 2024.



Contents covered in the programme were – PPP approaches as integrated with supply chain management in Agriculture and Allied sectors, Role of NGOs in Public Private Partnership in Agricultural Extension Activities, Experiences sharing and interaction with successful private Agri Entrepreneur, Funding Opportunities for PPP Projects/ Programmes/ Schemes of Government, Role of Agristartups in building networks and partnerships, Export environment ecosystem for networks and partnerships, PPP in Animal Husbandry sector – Challenges/Issues, Working models and experiences, PPP model- Experiences and Opportunities in general and ways to explore the same in Agriculture and Allied sectors. PPP Models – Experiences and Opportunities in Horticulture, Global mechanisms in public private partnerships, GOI Schemes, Programs, Initiatives in Agri and Allied Sectors, Gender Budgeting for mainstreaming of gender in Agri and allied sectors, Farmers networks: case presentation.

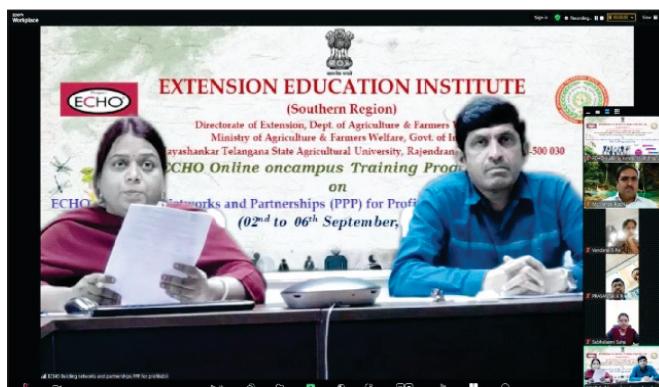
During hand on training case presentations were administered by dividing the participants into 4 groups through breakout rooms and each group was asked to prepare case on the networks and partnerships in their working area. Template was provided for the case presentations and two external experts were selected by the course coordinator to evaluate the cases presented by the participants. Dr. D. Shireesha, Asst. Professor, EEI moderated the case presentations and submitted the summary report of the cases at the end of the each presentation. Case presentations of the participants included the cases like Case 1: Coconut FPO by Andhra Pradesh participants Case 2: PPP model under PMFME scheme (Jowar roti and oil extraction) by karnataka participants, Case 3: Promotion of fruit covers in Mango through Farmers Network by KVK scientists of Andhra

Pradesh, Case 4: Providing an alternate source of income to dairy farmers for sustainable dairying by Kerala participants All the cases were evaluated and queries were answered by the experts.

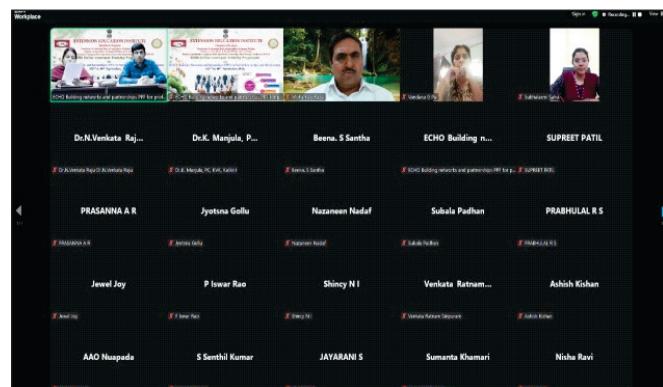
Dr. M. Jagan Mohan Reddy, Director, EEI in this inaugural address mentioned that Public - Private Partnerships (PPPs) in India's agriculture sector can help farmers in many ways, including modernizing agriculture, improving infrastructure, increasing farmer incomes, promoting sustainable practices, Providing information and services, Reaching isolated farmers and Providing local context etc. PPP initiatives will crowd in private capital in agriculture, leverage public investment and align the central and state governments, the private sector, and farmers in a shared vision of dynamic and value-added growth in the sector.

Dr. M. Jagan Mohan Reddy, Director, EEI in his valedictory remarks stated that as per the World Bank, India is one of the leading countries in terms of readiness for PPPs with 2000 PPP projects in various stages of implementation. Networks and partnerships play a vital role in fostering innovation and research in sustainable agriculture. Collaborations between governments, academic institutions, and agribusinesses facilitate the development and adoption of cutting-edge technologies, such as precision agriculture, agroecology, and biotechnology. Therefore all the participant officers must apply the learnt knowledge of the training in their respective states and should show the impact of the programme in the next meeting to be organized after one month.

During feedback, Participants felt that the training was excellent because the presenters used real-life



Dr. M. Jagan Mohan Reddy, Director, EEI and Dr. D. Shireesha, Asst. Professor & Course coordinator addressing the participants during valedictory session



Participants presence online during the training programme



experiences to show how to improve networks and partnerships in Agri and Allied sectors. It strengthened their technical skills and proved to be a great learning experience, especially with the practical insights, case presentations and sharing of experiences. Other than that they also impressed with the sessions on Emerging Needs and Importance of PPP in supply chain management in Agriculture and Allied Sectors, Funding Opportunities for

PPP Projects/ Programmes/ Schemes of Government and Global mechanisms in public private partnerships.

A total of forty five (45) trainees participated from Departments of Agriculture, Forestry, SAMETI and SAUs and KVKS of Andhra Pradesh, Tamil Nadu, Karnataka, Andhra Pradesh, Odisha and Kerala. The program was coordinated by Dr. D. Shireesha, Asst. Professor, EEI, Hyderabad.

Alternative Energy Options for Agri. and Allied Sectors

Decentralized solar-powered productive energy has been a good solution for the problems faced by the last-mile agrarian communities in developing countries. In India, there have been some government schemes providing capital subsidies for decentralized solar-powered irrigation systems. However, high upfront costs have so far limited their adoption among farmers with limited budget, landholding and social capital. Most of these schemes have failed to reach small and marginal landholders and economically backward farmers.

In this connection, the Extension Education Institute EEI, Hyderabad has organized an online training program titled "ECHO - Alternative Energy Options for Agri and allied Sectors from 9th –13th September, 2024 for the officers of Departments of agriculture and allied sectors of southern region.

Contents covered in the programme were –Application of Solar Energy in Agri and Allied Sectors, Use of Solar Technologies in food processing for small scale business, Introduction to alternate energy in Agri and allied Sectors. Importance and benefits of Alternate energy: An over view, Case studies and success cases, challenges and solutions in implementing alternate energy sources in agri and allied sectors, Opportunities and schemes of Govt in promoting renewable energy projects, Small Wind Turbines Fundamentals, Recent Trends and Opportunities,

Application of Hybrid Solar and Wind Energy Models in Agri and Allied sectors, Solar related research and other interventions of CIAE, Role of Solar Energy Technologies in Mitigating in GHG Emission, Extension strategies to promote Alternate energy options, Gender Budgeting, GoI programmes and Schemes in Agri and allied sectors, Sustainable Energy in Agril Sector and Role of renewable energy in reducing greenhouse gas emissions

During inauguration, Dr M. Jagan Mohan Reddy, Director said that, in agricultural systems energy is available from different sources as human, animal, sun, wind, biomass, coal, fertilizers, seed agro-chemicals, petroleum products electricity etc., renewable energy and farming are a winnabit combination.

During valediction, Dr M. Jagan Mohan Reddy, Director, EEI attended the valedictory and urged the participants to bring remarkable changes among farming community by applying the learned knowledge at back home situation.

A total of fifty five (55) participants from Depts. of Agriculture, Horticulture, Engineering, Animal husbandry and Dairy Development of Telangana, Andhra Pradesh, Karnataka, Odisha and Kerala states were attended the programme in online mode. The programme was coordinated by Dr.N.Praveen, Professor, EEI, Hyderabad.



Dr. M. Jagan Mohan Reddy, Director and Dr. N. Praveen, Professor & Course Coordinator addressing the training programme



Participants on board during Validictory session



Agro-Tourism-A Way forward for Profitability

Agrotourism is any activity or business that attracts tourists by using a farmer's land. This specialty tourism, is a developing and expanding industry in many countries across the world. Growing numbers of farmers in India are slowly starting their own businesses and profiting handsomely by offering a healthy, rejuvenating weekend spent lounging on verdant farms, operating tractors, milking cows and picking fresh fruit from the orchard. In this context, Extension Education Institute, Hyderabad had felt to capacitate its clientele group of middle level extension officers on Agrotourism.

In view of the above, the Extension Education Institute (EEI), Hyderabad organized an online on campus training program titled "ECHO - Agro-Tourism-A Way forward for Profitability" from 9th to 13th September, 2024

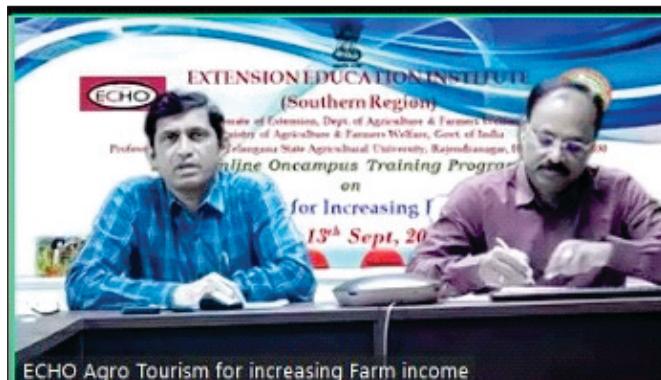
Contents covered in the programme were – Eco-Tourism for sustainable Livelihoods, Agri-Tourism-A game changer for tribal community, Agri-Tourism Concept-Myths and Realities, Importance of Home Stays in promoting Agri-Tourism, Promoting Agro Tourism through Home Stay, Agri-Tourism-A way forward for Biodiversity conservation, Promoting Dairy tourism, Experience sharing on Agro-tourism initiatives via Virtual tour, Strategies for scaling up Agri - Tourism, Gender Budgeting, GoI Schemes& Programmes, Case Presentations on Agri-Tourism, Back home planning & Blog Orientation

During the inaugural programme Dr. M. Jagan Mohan Reddy said that, this is a unique programme and need of the hour for understanding how the concepts of agri-tourism applied. There are good number of evidences that are prevailing in the countries like Netherlands and

European countries where in these concepts are practiced in a big way. People are migrating largely to urban areas from the rural areas, the promotion of agri tourism will have its impact on increasing farmers income, saving environment and maintaining ecological balance. Several resources are being judiciously utilized for beautifying the landscapes. As country's population is burgeoning, the space for tourism spots is shrinking. Urban folks are expecting some leisure and recreation because of breathless, soulless and restless life. Hence the concept of agri-tourism in peri-urban areas is growing. Hence promoting agri-tourism will help in addressing all these challenges.

The feedback reflected on sensitisation of agri-tourism. Participants impressed with the sessions of Sri.PandurangaTawre, Dr. Mallikarjun, PC, KVK, Undi and the activities being promoted by their institutes on Agri-tourism. Participant officers have also expressed their utmost satisfaction about the way the programme has been organized by inviting knowledgeable speakers with practical insights. The case experiences discussed and presented by participant officers from each state gave complete satisfaction. The participant officers felt that, till now they have understood agri-tourism in one direction with only agril component, but after exposure to this programme made them to realize several components for promoting agri-tourism. Promoting marketing of products generated also an interesting component they felt.

During valediction Dr. M. Jagan Mohan Reddy, Director, EEI said that, Agro Tourism is an economic strategy aimed at assisting villagers in establishing alternative sources of income and preserving their



Dr. M. Jagan Mohan Reddy, Director, EEI and Dr. K. Madhu Babu, Professor, Course coordinator addressing the participants during valedictory session



Participants presence online during the training programme



cultures. Agro-Tourism integrates agricultural and tourism activities. He appealed the participated officers to impress up on the farming about the utility and applicability of agri-tourism concept for reaping more net returns from their farms.

Climate Resilient Interventions in Agri and allied sectors

According to the Food and Agriculture Organization (FAO), climate resilient agriculture is defined as “the ability of an agricultural system to anticipate and prepare for, as well as adapt to, absorb and recover from the impacts of changes in climate and extreme weather”.

National Innovations on Climate Resilient Agriculture (NICRA), a network project of the Indian Council of Agricultural Research (ICAR) studied the impact of climate change on agriculture and farmers. Studies indicate that in the absence of adaptation measures, climate change projections are likely to reduce irrigated rice yields by 3%, rainfed rice yields by 7 to 28%, wheat yield by 3.2-5.3%, maize yield by 9-10% and increased the soybean yield by 2.5-5.5% for the period 2020-2039. Extreme events like drought affect food and nutrient consumption, increase incidence of poverty, encourage out migration, increase indebtedness and reduce farmers' capacity to adapt to climate change.

The Government is implementing the National Action Plan on Climate Change (NAPCC) which provides a policy framework for climate action in the country. National Mission for Sustainable Agriculture (NMSA) is one of the Missions within the NAPCC to make Indian agriculture more resilient. NMSA was approved for three major components i.e. Rainfed Area Development (RAD), On Farm Water Management (OFWM) and Soil Health

A total of forty three (43) trainees participated from Departments of Agriculture, Forestry, SAUs and KVKS of Andhra Pradesh, Tamil Nadu, Karnataka, Andhra Pradesh, Odisha and Kerala. The program was coordinated by Dr. K. Madhu Babu, Professor, EEI, Hyderabad.

Management (SHM). Subsequently, four new programmes were introduced namely Soil Health Card (SHC), Param paragat Krishi Vikas Yojana (PKVY), Mission Organic Value Chain Development in North Eastern Region (MOVCDNER) and Per Drop More Crop. In addition, the restructured National Bamboo Mission (NBM) was launched in April 2018. Government has introduced flagship yield based Pradhan Mantri Fasal Bima Yojana (PMFBY) along with Restructured Weather Based Crop Insurance Scheme (RWBCIS) from Kharif 2016 to protect the farmers including small land-owners from climate hazards. The scheme aims at supporting sustainable production in agriculture sector by way of providing financial support to farmers suffering crop loss/damage due to unforeseen natural calamities, adverse weather incidence to stabilize income of farmers. The adverse impact of climate change on developing countries can be mitigated through integrated approaches such as technological advancements, meteorology, and data sciences.

In view of the above, the Extension Education Institute (EEI), Hyderabad organized an online on campus training program titled "ECHO - Climate Resilient Interventions in Agri and allied sectors" from 17th to 21st September, 2024.

Contents covered in the programme were – An overview on climate change and its impact in agri and



Dr. M. Jagan Mohan Reddy, Director, EEI and Dr. D. Shireesha, Asst. Professor, Course coordinator addressing the participants during valedictory session



Participants presence online during the training programme



allied sectors, Climate smart ITKs in agri and allied sectors, Role of Integrated Farming System in building Resilient to Climate Change, Climate Smart Extension – Application of Remote Sensing and GIS in Agriculture, Climate Change Adaptation and Climate Resilient Technologies for fisheries sector, Climate Change Adaptation and Climate Resilient Technologies in Horticulture sector, Use of Plastics in Agriculture and Horticulture – A Climate Smart Initiative, Farm machinery, custom hiring and Agro processing mechanism to combat with climate change impact in agri and allied sectors, Carbon trading-voluntary carbon credit scheme, GOI Schemes, Programs, Initiatives in Agri and Allied Sectors, Gender Budgeting for mainstreaming of gender in Agri and allied sectors, Climate-smart agriculture in livestock sector, Climate resilient interventions- case presentations, Extension Strategies to address Climate Change in Agriculture and Allied sectors.

During hands on training case presentations by the participants were organized based on the real time applications of the climate resilient interventions in their concerned states and departments. And the cases presented were evaluated by the concerned experts and the suggestions offered to the participants.

In his inaugural address Dr. M. Jagan Mohan Reddy, Director, EEI mentioned that Climate Resilient Agriculture (CRA), encompassing adaptation and mitigation strategies and the effective use of biodiversity at all levels - genes, species and ecosystems - is thus an essential pre-requisite for sustainable development in the face of changing climate. Hence this training is the need of the hour for the agri and allied sectors, hence all the participants are requested to focus on all sessions of the training

programmes thoroughly for the enhancement of their knowledge and skills.

During the valediction by Dr.M.Jagan Mohan Reddy, Director, EEI indicated that Climate-smart agriculture practices offer several benefits, including Increased agricultural productivity, Resilience to climate change, Improved food security, Reduced greenhouse gas emissions, Improved soil health, Increased biodiversity, and Increased income and livelihoods, therefore all the participants are urged for the application of the learnt knowledge in their concerned states and departments. And the impact of the training programmes can be documented by the activities done by the officers at their respective places after one month through a online meeting.

During the feedback, the participants expressed that, they were very much impressed and enhanced their knowledge levels on Climate Change Adaptation and Climate Resilient Technologies for fisheries Horticulture sectors, Farm machinery, custom hiring and Agro processing mechanisms to combat the climate change impact in agri and allied sectors, Climate smart ITKs in agri and allied sectors and Carbon trading-voluntary carbon credit scheme. In addition to the above the extension strategies were felt much useful for them in delivering the learnt content to the farmers of their concerned jurisdiction.

A total of forty (40) trainees participated from Departments of Agriculture, Forestry, SAMETI and SAUs and KVKS of Andhra Pradesh, Tamil Nadu, Karnataka, Telangana, Odisha and Kerala. The program was coordinated by Dr. D. Shireesha, Asst. Professor, EEI, Hyderabad.

Time and Stress Management for women Extension Professionals

Time management and stress management are two key components to success in life. Creating a system to identify, evaluate, and eliminate distractors and stressors will lead to a more productive and efficient life. inside and outside of work.

We all live a life full for stressors, without finding the equilibrium to manage our time and stress, which ultimately becomes a recipe for disaster to our emotional and mental well-being. Family responsibilities and work pressure are very demanding and taking control and mental health and their management occupies a pivotal role in our lives.

Time Management is defined as planning, organizing, and dividing our time for specific activities. If we can manage our time properly, it enables to work faster and smarter and lead a stress-free life.

It is important to learn time management techniques so that even when the stress and pressures are too high, one can know how to be healthier, happier, and more productive. The ultimate goal is work-life balance, stress relief under pressure, and overall mental well-being. The connection between time and stress management is learning how to manage our time properly to be more productive to avoid feeling stressed. If we know how to



manage our time correctly, in the long run, tasks seem to be easier and stress-free.

Time and stress management techniques can enhance work efficiency, effectiveness and can establish work life balance of employees. Hence, it was thought worthwhile to enrich the skills of women extension officers of Agri and allied sectors on "Time and Stress Management for Extension Professionals"

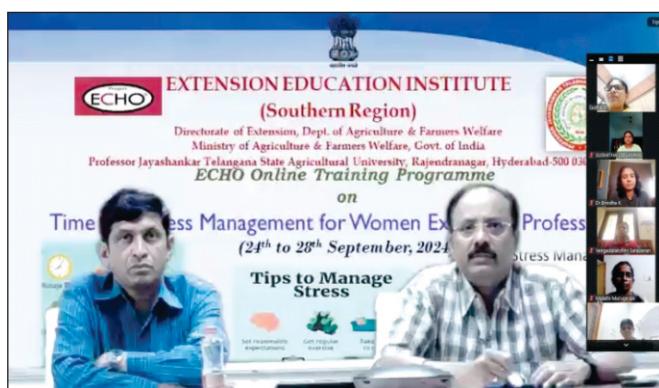
In this connection, the Extension Education Institute EEI, Hyderabad has organized an online training program titled "ECHO - Alternative Energy Options for Agril and allied Sectors From 24th – 28th September, 2024 for the women extension officers of Department of Agriculture and allied Sectors of Southern Region.

Contents covered in the programme were – Overview on Time and Stress Management. Importance of Time Management, Time Management Methods and Techniques, Effective Time Management Strategies for Agricultural Development professionals; Sources of Stress and coping Mechanisms; Goal setting-An effective tool for time management; Mind Management Techniques for Effective Stress Management; Managing stress to create Work Life Balance; Building teams for effective time and stress management; Interpersonal Skills for Stress Free Life; Positive Attitude for Stress Free Living; Effective Negotiation for Time and Stress Management; Case based learnings; Presentations by Individual Participants on Strategies for Effective Time and Stress Management; Gender budgeting; Govt.of India Schemes and Programmes

During inauguration, Dr. M. Jagan Mohan Reddy, Director, EEI , Hyderabad has requested for active participation of officers during the training programme keeping in view importance of the programme. This is the

diversified group which can able to grasp the concepts from experienced speakers who are going to enlighten on behavioral aspects of human beings he added. The contents of the programme will be giving much focus on how to manage time and how the stress busters will make the participants to change their biologies in to healthier ways. When you believe in excellence you will be stressful naturally, however managing stress is very much needed to avoid whole life problems he opined. The quantum of work for each employee is increasing subjected to stress hence it is very much essential to know all these concepts. He has appered all the participating officers to bestow their attention for successful leaning and better application of learned knowledge.

During valediction, Dr. M. Jagan Mohan Reddy, congratulated all the officers for their successful completion of the training programme with their active involment. He has appreciated the efforts made by Dr.K.MadhuBabu, Professor and course coordinator for facilitating meaningful presentations by the participants and fruitful learning. This has been proved by way of case presentations he added. The programme has been designed mainly to suit the requirements of client state officers taking in to account the challenges faced by them. Ultimately it will lead to extend quality services to farmers by the officers, he added. Further Dr.Reddy reiterated that some degree of enlightenment in trouble shooting and management is necessary at each and every level of functioning due to which the officers not only bursting the stress but also understanding management related issues. Further he has requested all the officers to disseminate this knowledge among various groups in the organization and make them aware of these principles. This will be visible when some protest will be observed from clients when an



Dr. M. Jagan Mohan Reddy, Director, EEI along with Dr. K. Madhu Babu, Professor and Course Coordinator addressing participants during inaugural programme



Participants interaction during the programme.



officer has been relieved from the area. Further he has requested all the participants to come prepared for impact assessment session. Later, to assess the translation of the learning's at field level.

During feed back, Dr. Brinda, Dr. Susmitha, Dr. Mounica Reddy and Dr. Malathi the participating officers have expressed their happiness over conducting very useful programme, previous trainings, they have attended could able to cover only theoretical perspective, whereas this training concentrated on practical and real-life examples which facilitated them to have in-depth insights and utility, it has given clear cut picture of how one can

improve themselves for greater outcome in personal and professional life, the training made all of them to learn how to face challenges in life and made them to and learn how to delegate work and know how to minimize stress

A total of thirty five (35) participants from Depts. of Agriculture, Horticulture, Engineering Animal husbandry and Dairy Development of Telangana, Andhra Pradesh, Karnataka, Odisha, Kerala states and Andaman & Nicobar Islands have attended the programme in Online mode. The programme was coordinated by Dr. K. Madhu Babu, Professor, EEI, Hyderabad.

Collaborative EEI and MANAGE Online Training Programmes

Drones in Agriculture

The introduction of drone technology in agriculture has brought about enormous advancements, reworking traditional farming practices and improving precision agriculture. Drones installed with cameras had been initially used for shooting excessive-decision aerial imagery of agricultural fields. The use of drones marked the appearance of precision agriculture. By integrating numerous sensors, which include multispectral and thermal cameras, drones collect facts on soil conditions, moisture stages, and crop health. It allows farmers to apply inputs which include water, fertilizers, and insecticides exactly, optimizing useful resource use. An attempt has been made by Extension Education Institute, Hyderabad to organize a 5 day online training programme to improve the knowledge and skills of the extension functionaries in the area of Drones in Agriculture

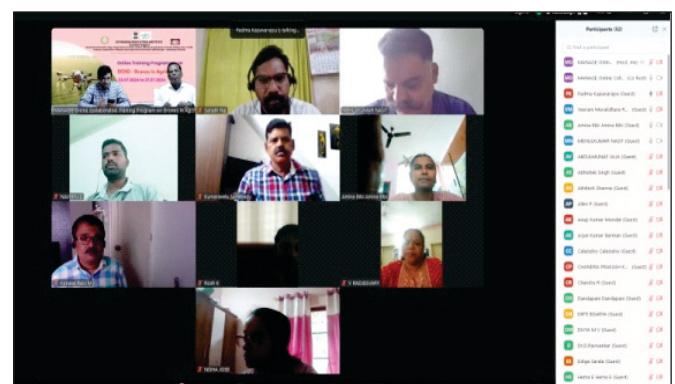
In this connection, an Online Training Programme in collaboration with MANAGE was organized on Drones in Agriculture for the Officers of Department of Agriculture and Allied Sectors from 23rd – 27th July, 2024

Training program was framed with contents on Prominence of drone technology in Indian Agriculture, Problems and prospects of expanding drone use in Agriculture and allied fields – An entrepreneurs experience, Drone the green technology for future agriculture and its applications ,Challenges in drone based applications in Agriculture, Drone rules, regulations and policy implications in India, Drone Based Package of Practices for Wet Direct Seeded Rice - Innovations and Challenges, Standard Operating Procedures and safety

guidelines for Pesticide applications using drones, Type certified Agri-Drones in India - Specifications – Pros & Cons, Drones and AI a new combination for crop and fisheries protection, Rural franchise opportunities for drone based spraying, Opportunities for drone based



Dr. M. Jagan Mohan Reddy, Director, EEI and Dr. N. Praveen, Professor, Course coordinator addressing the participants during inaugural session



Participants presence online during the training programme



entrepreneurship & license requirements through PJTSAU drone academy, Drone applications in animal herd management and health monitoring, Opportunities on skilling in drone for rural youth, Gender Budgeting for mainstreaming of gender in Agri and allied sectors, GOI Schemes, Programs for promotion of drones in Agri and allied sectors and Role of extension professionals in popularizing drone technologies.

During the inaugural event, Dr.M.Jagan Mohan Reddy, Director, EEI mentioned that Drones offer a range of benefits to farmers in the agriculture sector, including increased efficiency, improved yields, and reduced costs. It is important for farmers to understand the potential benefits of drones and receive necessary training and support to use effectively.

The valedictory Programme was organized on 27.07.2024 under the chairmanship of Dr. M. Jagan Mohan Reddy, Director, EEI. The participants in their feedback

mentioned that it is a wonderful opportunity to participate in this online training programme on Drones in Agriculture. Trainees were impressed with the sessions like Sensitization of extension officials on Drone rules, regulations and policy implications in India, Drone Based package of practices for wet direct seeded rice innovations and challenges, Standard Operating Procedures and safety guidelines for Pesticide application using drones, Type certified Agri-Drones in India Specifications Pros& Cons, Drones and AI a new combination for crop and fisheries protection.

Forty five (45) officers and scientists belonging to departments of Agriculture, KVK, Animal husbandry, Sericulture, Horticulture, Fisheries attended the program Andhra Pradesh, Telangana, Kerala, Tamil Nadu, Odisha and the Union Territory of Andaman and Nicobar Islands which was coordinated by Dr.N.Praveen, Professor, EEI, Hyderabad.

Carbon Credits in Food and Agriculture, Carbon Finance, Carbon Farming

The integration of carbon credits, carbon finance, and carbon farming into the food and agriculture sectors is vital for promoting environmental sustainability while also offering economic benefits. By participating in carbon markets and adopting carbon-friendly practices, farmers can play a significant role in reducing global greenhouse gas emissions, ensuring food security, and contributing to a sustainable future. This training program aims to equip participants with the knowledge and skills necessary to navigate and benefit from these emerging opportunities in the agricultural landscape.

In view of the above, the Extension Education Institute (EEI), Hyderabad in collaboration with MANAGE organized an online training program titled "ECHO - Carbon Credits in Food and Agriculture, Carbon Finance, Carbon Farming" from 20th to 24th August, 2024 in ECHO Online Mode.

Contents covered in the programme were - Overview of Carbon Credits and their Importance in Agriculture, Understanding Carbon Finance, Policy and Regulatory Framework, Carbon sequestration techniques in Agriculture, Measuring and Monitoring Carbon sequestration, Case Studies on successful Carbon - Farming Projects, Understanding Carbon Markets, Pricing and

Valuation of Carbon Credits , Financial Instruments for Carbon Farming, Investment Opportunities in Carbon Farming, Innovations and Future Trends in Carbon Farming, Building a Sustainable Carbon Farming Business Model, Carbon footprint assessment in Agriculture, Carbon Farming practices, Agroecology and Carbon sequestration, Livestock management and Methane mitigation, Verification and Validation Processes, Developing Carbon Reduction strategies, Integration and Implementation strategies and action planning and Implementation

During the inaugural programme Dr. M. Jagan Mohan Reddy, Director, EEI emphasized the role of carbon credits in promoting sustainable agriculture practices, highlighted the financial incentives of carbon farming for smallholder farmers, discussed the importance of government support in scaling carbon finance initiatives and underscored the urgency of climate action through carbon farming practices.

Dr. M. Jagan Mohan Reddy, Director, EEI, commended the participants for their active engagement in carbon farming solutions, encouraged participants to apply carbon finance strategies in their local contexts, highlighted the potential of carbon credits to transform



Dr. M. Jagan Mohan Reddy, Director, EEI and Dr. S. Chandra Shekar, Professor & Course coordinator addressing the participants during valedictory session

rural economies and emphasized the long-term benefits of integrating carbon credits into food and agriculture systems.

During feedback, the training content was highly relevant, offering practical insights into carbon credits and their application in agriculture. Participants appreciated the focus on real-world case studies and actionable strategies for implementing carbon finance. The sessions on policy frameworks and market mechanisms were



Participants presence online during the training programme

particularly useful. Overall, the program provided clear pathways for immediate application in their work.

A total of one hundred and thirty five (135) trainees participated from Departments of Agriculture, Horticulture, Dairy Development, Fisheries, Animal Husbandry, SAUs and KVKS of Andhra Pradesh, Tamil Nadu, Karnataka, Andhra Pradesh, Odisha and Kerala. The program was coordinated by Dr. S. Chandra Shekar, Professor, EEI, Hyderabad

Promotion of Farmers Producer Organizations

The FPO movement in India is crucial for promoting collective farming, improving market access, and empowering smallholders in agriculture and allied sectors. With increasing governmental and institutional support, FPOs have become a key driver in transforming the agricultural economy, improving farmer livelihoods, and ensuring sustainable development.

In view of the above, the Extension Education Institute (EEI), Hyderabad in collaboration with MANAGE organized an online training program titled "ECHO - Promotion of Farmers Producer Organizations" from 24th to 28th August, 2024 in ECHO Online Mode.

Contents covered in the programme were – Farmer Producer Organizations for Profitability – An Overview of Policy, Process and guidelines, Formation of FPOs- Strengthening and Management of farmer producer organizations for profitability, Challenges and Strategies for sustainability of FPOs, Digital technologies to FPOs for Effective ToT, Development of business plans for FPOs, Role of Financial Institutions for promotion of FPOs, Micro finance services for FPOs, Market led Extension for FPOs, Supply and Value chain development for FPOs, Entrepreneurial Possibilities for FPOs in Agri and Allied

Sectors, Legal frame works and Statutory of FPOs, Stress Management skills, Gender Budgeting for main streaming of gender in Agri and Allied Sectors and GOI Schemes, Programs, Initiatives

During the inaugural programme, Dr. M. Jagan Mohan Reddy, Director, EEI Hyderabad has emphasized the crucial role of FPOs in enhancing farmer income and sustainability. He has highlighted the need for capacity building to empower FPOs. Dr. M. Jagan Mohan Reddy, Director, EEI Hyderabad, appreciated the initiative for fostering innovation in agricultural marketing. He also underscored the importance of collaboration between FPOs and stakeholders for long-term success.

During the valedictory session Dr. M. Jagan Mohan Reddy, Director, EEI Hyderabad, reiterated that, collection of FPOs has emerged as a potential tool to transform Indian agriculture into a sustainable business by taking advantage of the scale by aggregation of input, demand, produce aggregation and collective marketing and value addition, thus realising optimal returns.

During feedback, Participants found the content of the online training program on Farmer Producer



Organizations (FPOs) highly practical and relevant. They appreciated the detailed sessions on marketing strategies, financial management, and legal frameworks. Many felt the knowledge gained would directly enhance their ability to support FPOs in their regions. The focus on real-world applications was particularly useful for future implementation.

A total of thirty six (36) trainees participated from Departments of Agriculture, Horticulture, Dairy Development, Fisheries, Animal Husbandry, SAUs and KVKS of Andhra Pradesh, Tamil Nadu, Karnataka, Andhra Pradesh, Odisha and Kerala. The program was coordinated by Dr. S. Chandra Shekar, Professor, EEI, Hyderabad.

Webinars

Sustainable Agriculture and One Health: A Collaborative Path Forward

The Extension Education Institute, Hyderabad, successfully conducted an insightful webinar on the theme "One Health for Agri and Allied Sectors," on 18th July, 2024, focusing on the interconnectedness of human, animal, and environmental health in the context of agriculture. The event featured two expert-led sessions, drawing significant participation from scholars, practitioners, and stakeholders in the agriculture and allied sectors.

The first session, titled **"Role of Natural Resource Management for One Health"** was led by Dr. A. Amarendra Reddy, Joint Director, Crop Health Policy Support Research, ICAR- NIBSM, Raipur, India. Dr. Reddy emphasized the critical role that effective management of natural resources plays in achieving sustainable agricultural practices. He highlighted innovative strategies and best practices that can help optimize the use of water, soil, and biodiversity to enhance agricultural productivity while ensuring environmental sustainability.

The second session, **"Integrating Soil Health and One Health for Sustainable Agriculture,"** was presented by Dr. S. Triveni, Professor and University Head, Department of Agril. Microbiology, College of Agriculture,

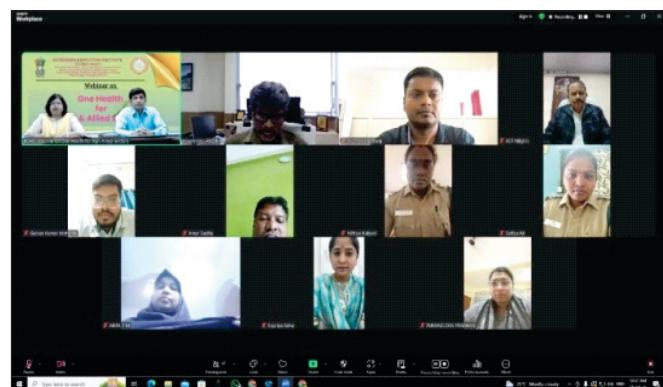
Rajendranagar, PJTSAU. Dr. Triveni elaborated on the concept of One Health and its relevance to soil health, demonstrating how the health of soil, plants, animals, and humans are intricately linked. The session provided comprehensive insights into sustainable soil management techniques and their impact on overall agricultural health and productivity.

Both sessions underscored the importance of interdisciplinary collaboration and a holistic approach to agricultural development. The discussions reinforced the need for integrating environmental conservation with agricultural practices to promote the well-being of ecosystems, animals, and humans alike.

Earlier, during the inaugural session, Dr. M. Jagan Mohan Reddy, Director of the Extension Education Institute, Hyderabad, emphasized the need for awareness on health importance following the COVID-19 pandemic. He highlighted the alarming depletion of natural resources, noting that the health of one organism is intricately dependent on the fitness of others. Dr. Reddy pointed out that much of this ecological damage stems from unscientific and unsustainable practices.



Dr. M. Janga Mohan Reddy, Director, EEI addressing the participants along with Dr. M. Preethi, Professor and Course coordinator during inaugural session



Participants on board during training programme



"We have already inflicted irreparable harm on our ecosystems. It is imperative that we work towards restoring the past glory of our natural resources," he stated. Dr. Reddy expressed hope that the webinar would serve as a crucial step in connecting the dots, fostering a collaborative effort to rehabilitate and preserve our environment for future generations.

An enthusiastic participant suggested that the farming community should have better access to decentralized bio-fertilizer units. This would empower

farmers with sustainable agricultural practices and enhance soil health.

The webinar was well-received, with active participation and engagement from over 55 attendees, who appreciated the relevance, timeliness, and comprehensiveness of the topics covered. The webinar, moderated by Dr. M. Preethi, Professor at the Extension Education Institute, Hyderabad, facilitated a robust exchange of ideas and solutions.

Combating Anti-Microbial Resistance in Agri and Allied Sectors

The Extension Education Institute (EEI), Hyderabad, successfully organized a webinar on ECHO - Anti Microbial Resistance (AMR) in Agri and Allied Sectors on July 31, 2024. The event was conducted in a panel discussion and case presentation format, featuring distinguished experts from various fields.

The esteemed panel included Dr. B. Ramakrishnan, Principal scientist, Dept. of Microbiology, IARI, New Delhi, representing the agriculture sector; Dr. Premanshu Dandapat, Head, Division of Microbiology and Mycology, IVRI, Bareli; and Dr. V. Deepali Vagdalkar, Professor, Malla Reddy Medical College, Hyderabad. The webinar was skillfully moderated by Dr. M. Preethi, Professor, EEI, and chaired by Dr. M. Jagan Mohan Reddy, Director, EEI, Hyderabad.

Dr. M. Preethi initiated the webinar by welcoming the expert panel and participants on the Echo webinar platform. She outlined the flow of the event and provided a formal introduction of the panelists. Dr. M. Jagan Mohan Reddy emphasized the importance of the webinar in his opening remarks.



Dr. M. Jagan Mohan Reddy, Director, EEI addressing the Participants during Inaugural session along with Dr. M. Preethi, Professor, EEI

The session featured twelve case presentations, with three cases each from the agriculture, animal husbandry, and medical sectors, along with three additional cases from the audience. These cases were discussed in depth by the panel experts, who provided insights and potential solutions.

Dr. Premanshu Dandapat highlighted the public health threat from zoonotic diseases, the National Action Plan on AMR, the Indian Government's initiatives to combat AMR, and the need to strengthen animal health monitoring systems. Dr. B. Ramakrishnan discussed the chemistry of life, the role of DNA, the connection between healthy soils, healthy foods, and healthy humans, and the nine planetary boundaries. Dr. V. Deepali presented on the differences between AMR and antibiotic resistance, the mechanisms of drug resistance, and the causes of AMR in the medical sector. She concluded her presentation with a thought-provoking video on how to slow down AMR and promote healthy habits.

In his summary, Dr. M. Jagan Mohan Reddy reiterated the key takeaways from the expert



Participants during training programme



deliberations. He emphasized that the One Health concept is crucial for addressing AMR, and highlighted urbanization and poor sewage systems as major contributors to AMR in humans. He advocated for the inclusion of key points from the discussions into the National Action Plan and stressed the importance of natural farming and hygienic practices in combating AMR.

Human Wild life conflict

Human - Wild life conflict struggles that arise when wild life poses actual or perceived direct, recurring threats to human interests or needs, often leading to disagreements between groups of people and negative impacts on people and wild life. It includes consumption of crops by wild herbivores, killing of livestock by wild predators, damage to infrastructure and equipment and can involve human injury and death. Wild life is often killed in retaliation, in defense or to prevent future losses, with body parts often entering illegal wild life trade chains. It is a global issue of concern , but people in some parts of the world are more significantly affected than others, with some experiencing negative impacts on production and livelihoods. As wild life habitats are increasingly converted to human uses and wild life movement corridors narrowed by infrastructure and other developments , wild life are forced to retreat into shrinking and fragmented habitats, it is increasingly imperative to employ holistic and integrated approaches to effectively manage the human wild life interface. Without such solutions the expected trajectory most often seen is for wild life conflict to increase to peak then, plummet to zero as the wild life are removed. The webinar aims to bring together experts and participants from southern region of India, to discuss the challenges and share case studies related to human - wildlife conflict. This interactive session foster a comprehensive understanding of the current situation and encouraged to develop an effective strategy to combat wildlife conflict.

In this connection, the Extension Education Institute (EEI), Hyderabad, successfully organized a webinar on ECHO - Human Wild life conflict on 13.08.2024. The event was conducted in a panel discussion and case presentation format, featuring distinguished experts from various fields.

The esteemed panel included Dr. V. Vasudev Rao, Retd. Principal Scientist & Head, PJTSAU, Hyderabad; Dr. V. Ravinder Reddy, Principal Scientist & Head, AINP on VPM, PJTSAU, Rajendranagar, Hyderabad. The webinar was

The webinar concluded with Dr. M. Preethi, Professor, EEI proposing a vote of thanks and urging participants to submit their feedback via the form uploaded on the Echo Platform. The webinar was attended by 78 participants from various sectors across India.

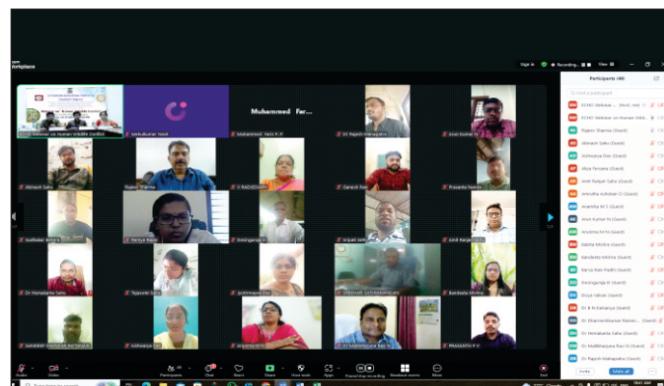
skillfully moderated by Dr. P. Vijaya Lakshmi, Professor, EEI, and chaired by Dr. M. Jagan Mohan Reddy, Director, EEI, Hyderabad.

Dr. P. Vijaya Lakshmi, Professor, EEI initiated the webinar by welcoming the expert panel and participants on the Echo webinar platform. She outlined the flow of the event and provided a formal introduction of the panelists. Dr. M. Jagan Mohan Reddy emphasized the importance of the webinar in his opening remarks.

During interactive session participants felt that this is very good topic and need of the hour and said that they



Dr. M. Jagan Mohan Reddy, Director, EEI addressing the participants during inaugural session along with Dr. P. Vijaya Lakshmi, Professor, EEI and Dr. V. Ravinder Reddy, Principal Scientist & Head, AINP on VPM, PJTSAU



Participants on board during the webinar



learned many things. Especially, damage caused by different animals and birds, patterns of damage, how to protect the crop from pests, through traditional methods, erecting ribbons around crop, wrapping of maize cobs during milky stage with leaves, growing trap crops, growing crops in blocks, integrated bird pest management, use of artificial human sound, growing non preferred crops like castor, curry leaves, karanda use of bio acoustics, web applications, use of solar fences.

In his summary, Dr. M. Jagan Mohan Reddy reiterated the key takeaways from the expert deliberations and emphasized the importance of human-wildlife conflict and strategies to overcome it.

The webinar concluded with Dr. P. Vijaya Lakshmi, Professor, EEI proposing a vote of thanks and urging participants to submit their feedback via the form uploaded on the Echo Platform. The webinar was attended by 85 participants from various sectors across India.

Green Energy in Farming

The webinar on 'Green Energy in Farming' is conducted by Extension Education Institute, Rajendranagar, Hyderabad on 23rd September, 2024 for the Middle Level Extension Officials of Southern states and Union Territories.

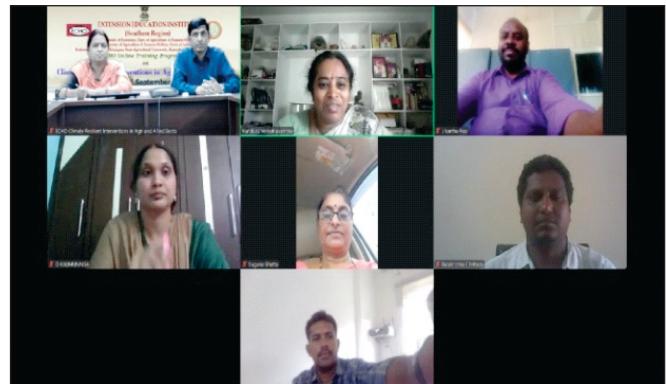
The resource persons and the topics delivered by them are- Dr. P. Subramanian, Professor, Department of Renewable Energy Engineering, TNAU, Coimbatore and the topic delivered was 'Green Energy Generation from Farm Resources'. Dr. Vijayakumar Palled, Professor (FMPE) & PI, ICAR-AICRP ON EAAI, Department of Renewable Energy Engineering, College of Agricultural Engineering, UAS, Raichur, Karnataka and the topic delivered was 'Applications of Solar Energy in Agriculture and Allied Sectors' and Dr. R. Swamy, Associate Professor & Univ. Head (RNEE), College of Agriculture, Department of Agricultural Engineering, Rajendranagar, Hyderabad and the topic delivered was 'Green Energy through Biomass and Biogas'.

The webinar highlighted that, Green energy often comes from renewable energy sources although there are some differences between renewable and green energy. The green energy often comes from renewable energy technologies such as [solar energy](#), wind power, geothermal energy, biomass and hydroelectric power. Each of these technologies works in different ways, whether that is by taking power from the sun, as with solar panels, or using wind turbines or the flow of water to generate energy. The experts opined that, the common type of renewable energy is usually produced using photovoltaic cells that capture sunlight and turn it into electricity. Particularly suited to offshore and higher altitude sites, wind energy uses the power of the flow of air around the world to push turbines that then generate electricity. Hydropower is a type of green energy that uses the flow of water in rivers, streams, dams

or elsewhere to produce electricity. Geothermal energy is a type of green power that uses thermal energy that has been stored just under the earth's crust. The webinar illustrated on usage of Biofuel and Biomass as Green Energy options because they can be used as alternatives to fossil fuels and have several environmental benefits like Carbon neutrality, Renewable energy, Versatile and Large source of renewable energy. However, biofuels and biomass do have some potential drawbacks, including Land use, Greenhouse gas emissions and Energy density.



Dr. M. Jagan Mohan Reddy, Director, EEI along with Dr. D. Shreesha, Asst. Professor addressing participants during inaugural programme of Webinar in online



Participants seen in the webinar



Earlier Dr. M. Jagan Mohan Reddy, Director, Extension Education Institute (EEI), Rajendranagar, Hyderabad said that Green energy is important for the environment as it replaces the negative effects of fossil fuels with more environmentally-friendly alternatives. Derived from natural resources, green energy is also often renewable and clean, meaning that they emit no or few greenhouse gases and are often readily available.

Few participated officers were cleared their doubts from the resource persons on the aspects like harnessing solar energy at house hold level, application of solar energy in dairy industry, schemes operated by the GoI, detailed

explanation on other areas of green energy other than solar energy, more particulars about solar energy pumps in Agriculture, how to harness ground water through solar energy for the benfit of farmers and Agri volatile systems in pros and cons in Agril. Etc.

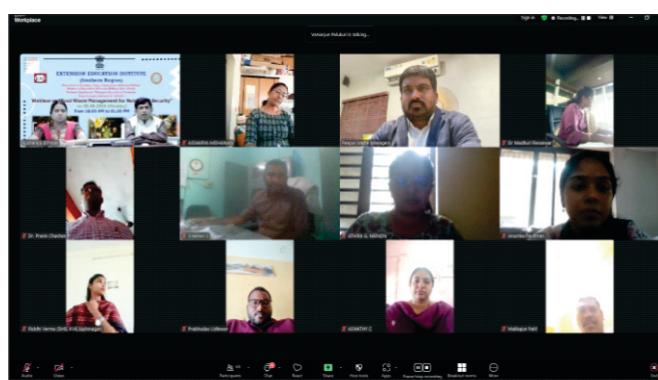
Fifty five Middle Level Extension Officials from the client departments of Agriculture, Horticulture, Dairy, Forest, SAUs and Animal Husbandry representing client states of AP, Telangana, Kerala, Karnataka, Odisha and Pudicherry. The webinar was moderated by Dr. D. Shireesha, Assistant Professor, EEI, Hyderabad.

Food Waste Management for Nutritional Security

Extension Education Institute, Rajendranagar, Hyderabad has organized a Webinar on Food Waste Management for Nutritional Security on 30th September, 2024 (Monday) for the benefit of the Middle level Extension Officials of the South Indian sates and Union Territories like Andaman and Nicobar Islands, Lakshadweep and Puducherry.



Dr. M. Jagan Mohan Reddy, Director, EEI along with Dr. D. Shireesha, Asst. Professor & Course Coordinator addressing participants during Inaugural Programme



Participants during Inauguration

The context for organizing the webinar was Globally, food waste has become an increasingly recognised environmental issue over the last decade. Not only has the issue of wasted food become an ethical one in a world where approximately 800 million people suffer from hunger, but the environmental impacts of producing food that is then discarded can no longer be overlooked. As population and urbanisation grows, more food is being produced and more food is being wasted. Moreover, food wasted in an urban context creates severe environmental and public health consequences that have a negative impact upon human well-being and the environment. Food management is also a major source of greenhouse gas emissions and cities are key actors in the global mission to reduce the impact of climate change. The Paris Agreement commits signatories to "holding the increase in the global average temperature to well below 2 degrees above pre-industrial levels, and to pursue efforts to limit the temperature increase to 1.5 degrees above pre industrial levels." Without the involvement of cities in this process, the goals become impossible to achieve.

The topics delivered by the three speakers of the webinar are - Shri Harshavardhan Era, CEO & Co - Founder, Peepal Waste Managers, Hyderabad, has delivered the topic on 'Wealth from Waste: Efficient Organic Waste Management Techniques', Dr. Dinish Kumar, Head, Food Science & Post Harvest Technology, Indian Agricultural Research Institute (IARI), New Delhi has delivered the topic on 'Valorisation of Agro - industrial By - products' and Dr. M. Jagan Mohan Reddy, Director & University Head (Agril. Extension) has delivered the topic on 'Extension Strategies to Promote Food Waste Management for Nutritional Security'.



Sri Harshavardhan has illustrated about the bio digesters, mainly highlighting biogas technology, vermin composting and make soil, Dr. Dinish Kumar showcased the conversion of waste in to wealth in the form of generating more by products from food waste. Dr. Reddy has narrated the role of middle level extension agricultural officials in enlightening and empowering the consumers, house holders, communities and policy makers on food waste management. He also advised to organize campaigns, training programmes, information materials (brochures, leaflets etc..), generate the data on quantum of food waste

being generated at various places, methods of tracking and offering suitable advisories for effective food waste management.

Dr. D. Shireesha, Assistant Professor, EEI, Hyderabad coordinated and moderated the webinar. 65 no of middle level extension officials of Agriculture, Horticulture, Engineering Animal husbandry and Dairy Development of Telangana, Andhra Pradesh, Karnataka, Odisha, Kerala and Andaman & Nicobar states participated in the webinar. The trainees also submitted the feedback in the circulated Google form to assess the effectiveness of the webinar.

Visitors

- 11th July 2024.. Dr. Sanjay Kumar, Additional Commissioner (Extension), Dept. of Agriculture & Farmers Welfare, Ministry of Agriculture & Farmers Welfare, GoI visited EEI, Rajendranagar, Hyderabad on 11th June, 2024 and reviewed ECHO online training programs being conducted by EEI, Hyderabad. He has also interacted with the participants of the training program on Nutrition

Management in Livestock for Improving the Productivity.

- Visited farmer trainees of CRIDA, Santhoshnagar on 03.08.2024
- Visited farmer trainees of CRIDA, Santhoshnagar on 27.08.2024



Dr. Sanjay Kumar, Additional Commissioner (Extension), Dept. of Agriculture & Farmers Welfare, GoI addressing the participants along with Dr. M. Janga Mohan Reddy, Director, EEI and faculty of EEI during the ECHO online training programme on Nutrition management for enhancing livestock productivity

Director

Extension Education Institute (Southern Region)

Directorate of Extension, Department of Agriculture & Farmers Welfare
Ministry of Agriculture & Farmers Welfare, Govt. of India
PJT Agricultural University, Rajendranagar, Hyderabad - 500 030
Phone : 040-24015368
Email: eehyd1962@gmail.com

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Edited by: **Dr. D. Shireesha, Assistant Professor, EEI, Hyderabad**

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