SUSTAINABLE AGRICULTURE AND CLIMATE RESILIENCE
— A MANAGEMENT PERSPECTIVE —

INTERCONTINENTAL CONFERENCE ON SUSTAINABLE AGRICULTURE AND CLIMATE RESILIENCE: A MANAGEMENT PERSPECTIVE

17th & 18th November, 2024

Istanbul, Turkey

IFERP® Academy
Explore Your Research Journey...

Organized By:

IFERP Academy - Turkey society

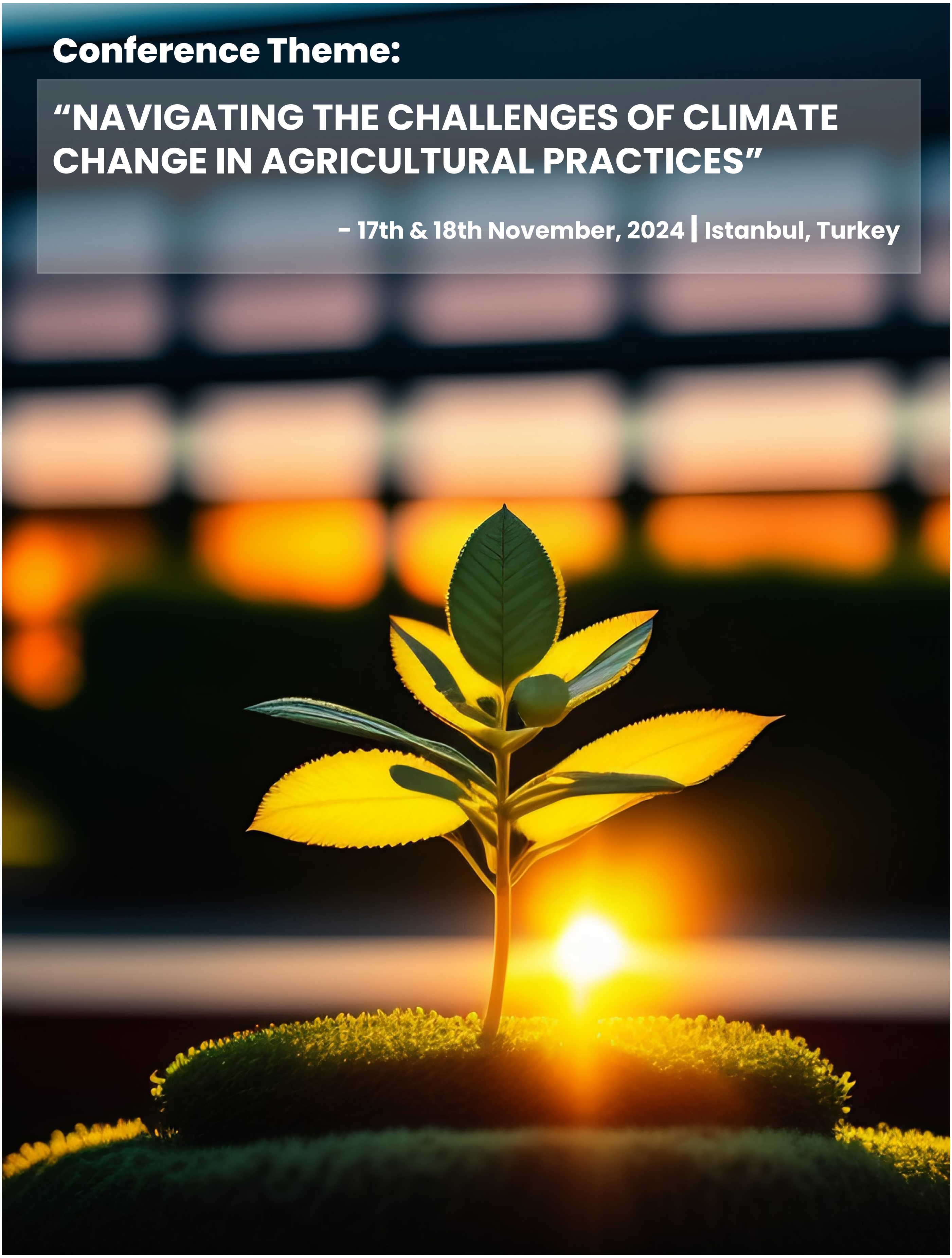
Theme : "Navigating the Challenges of Climate Change in Agricultural Practices"

International Conference on Sustainable Agriculture and Climate Resilience:
A Management Perspective, Istanbul, Turkey

ISBN 978-81-976209-8-0

9 788197 620980

TABLE OF CONTENTS


Conference Theme:
"NAVIGATING THE CHALLENGES OF CLIMATE CHANGE IN AGRICULTURAL PRACTICES"
- 17th & 18th November, 2024 | Istanbul, Turkey

PREFACE

We are delighted to extend a warm welcome to all participants attending International Conference on Sustainable Agriculture and Climate Resilience: A Management Perspective 2024, taking place in Istanbul, Turkey on November 17th - 18th, 2024. This conference provides a vital platform for researchers, students, academicians, and industry professionals from all over the world to share their latest research results and development activities in the field of Sustainable Agriculture and Climate Resilience. It offers delegates an opportunity to exchange new ideas and experiences, establish business or research relationships, and explore global collaborations.

The proceedings for International Conference on Sustainable Agriculture and Climate Resilience: A Management Perspective - 2024 contain the most up-to-date, comprehensive, and globally relevant knowledge in the field of Engineering, Technology and Management. All submitted papers were subject to rigorous peer-reviewing by 2-4 expert referees, and the papers included in these proceedings have been selected for their quality and relevance to the conference. We are confident that these proceedings will not only provide readers with a broad overview of the latest research results in Engineering, Technology and Management but also serve as a valuable summary and reference for further research in this field.

We are grateful for the support of many universities and research institutes, whose contributions were vital to the success of this conference. We extend our sincerest gratitude and highest respect to the many professors who played an important role in the review process, providing valuable feedback and suggestions to authors to improve their work. We also extend our appreciation to the external reviewers for providing additional support in the review process and to the authors for contributing their research results to the International Conference on Sustainable Agriculture and Climate Resilience: A Management Perspective - 2024.

Since September 2024, the Organizing Committees have received more than 60+ manuscript papers, covering all aspects of International Conference on Sustainable Agriculture and Climate Resilience: A Management Perspective - 2024. After review, approximately 30+ papers were selected for inclusion in the proceedings of International Conference on Sustainable Agriculture and Climate Resilience: A Management Perspective - 2024. We would like to thank all participants at the conference for their significant contribution to its success. We express our gratitude to the keynote and individual speakers and all participating authors for their dedication and hard work. We also sincerely appreciate the efforts of the technical program committee and all reviewers, whose contributions made this conference possible. Finally, we extend our thanks to all the referees for their constructive comments on all papers, and we express our deepest gratitude to the organizing committee for their tireless work in making this conference a reality.

ABOUT INTERNATIONAL CONFERENCE ON SUSTAINABLE AGRICULTURE AND CLIMATE RESILIENCE: A MANAGEMENT PERSPECTIVE - 2024

Sustainable Agriculture and Climate Resilience: A Management Perspective brings together researchers, academics, professionals, and students to discuss and share advancements, research findings, and best practices in the field. Topics commonly covered include sustainable technologies, environmental impact assessments, renewable energy, green building design, eco-friendly materials, and innovative teaching methods, and more.

Purpose of the Conference:

The primary purpose of this conference is to provide a dynamic platform for experts, scholars, and industry leaders to deliberate on the profound implications of climate change on agriculture. We aim to foster discussions that go beyond identifying challenges and focus on actionable strategies for building climate-resilient agricultural systems. By bringing together a diverse array of perspectives, we aspire to generate innovative solutions and contribute to the global dialogue on sustainable agricultural practices in the face of a changing climate.

Objective of the Conference:

The overarching objective of this conference is to facilitate knowledge exchange and collaboration among researchers, policymakers, and practitioners in the realm of sustainable agriculture and climate resilience. We seek to explore the latest research findings, share best practices, and identify practical approaches to mitigate the impact of climate change on agricultural productivity. Through interactive sessions, engaging discussions, and networking opportunities, we aim to build a community committed to advancing sustainable and climate-resilient agricultural management practices.

ABOUT IFERP

The Institute For Educational Research and Publication (IFERP) spearheads the organization of the International Conference on Sustainable Agriculture and Climate Resilience: A Management Perspective in 2024. IFERP stands as a distinguished professional association committed to advancing knowledge and fostering innovation in sustainable agriculture, climate resilience, and related management perspectives. With a rich history of orchestrating successful conferences, IFERP plays a pivotal role in creating platforms for intellectual exchange and progress.

Our Vision

"A Digitally equipped robust, dynamic & swift professional community integrating academics & industry for upgraded technical knowledge implementation."

Our Value

IFERP values the restoration of high- level technological research, learning, collaboration, resource sharing & community-building traditions

Our Goal

To serve as the foundation for all technological progress and advancement activities around the world

Our Mission

"Upskilling the knowledge hub through technological innovation and excellence for the benefit of humanity"

MESSAGE FROM
MANAGING DIRECTOR, IFERP

Mr. A. SIDDTH KUMAR CHHAJER

MD & Founder,
IFERP, Technoarete Groups

On behalf of Institute For Educational Research and Publications (IFERP) & the organizing Committee, I express my hearty gratitude to the Participants, Keynote Speakers, Delegates, Reviewers and Researchers.

The goal of the International Conference on Sustainable Agriculture and Climate Resilience: A Management Perspective 2024 is to provide knowledge enrichment and innovative technical exchange between international researchers or scholars and practitioners from the academia and industries in the field of Sustainable Agriculture and Climate Resilience.

This conference creates solutions in different ways and to share innovative ideas in the field of Sustainable Agriculture and Climate Resilience provides a world class stage to the Researchers, Professionals, Scientists, Academicians and Students to engage in very challenging conversations, assess the current body of research and determine knowledge and capability gaps.

International Conference on Sustainable Agriculture and Climate Resilience: A Management Perspective in 2024 will explore the new horizons of innovations from distinguished Researchers, Scientists and Eminent Authors in academia and industry working for the advancements in Science and Engineering from all over the world. International Conference on Sustainable Agriculture and Climate Resilience: A Management Perspective in 2024 hopes to set the perfect platform for participants to establish careers as successful and globally renowned specialists in the field of Science and Engineering.

MESSAGE FROM
CHIEF EXECUTIVE, IFERP

MR. RUDRA BHANU SATPATHY

CEO & Founder,
IFERP, Technoarete Groups

IFERP is hosting the International Conference on Sustainable Agriculture and Climate Resilience: A Management Perspective in 2024 this year in month of 17th & 18th November, 2024, Istanbul, Turkey. The main objective of ICCETM-2023 is to grant the amazing opportunity to learn about groundbreaking developments in modern industry, talk through difficult workplace scenarios with peers who experience the same pain points and experience enormous growth and development as a professional. There will be no shortage of continuous networking opportunities and informational sessions. The sessions serve as an excellent opportunity to soak up information from widely respected experts.

Connecting with fellow professionals and sharing the success stories of your firm is an excellent way to build relations and become known as a thought leader. I express my hearty gratitude to all my Colleagues, Staffs, Professors, Reviewers and Members of Organizing Committee for their hearty and dedicated support to make this conference successful. I am also thankful to all our delegates for their pain staking effort to make this conference successful.

BIOGRAPHY OF KEYNOTE SPEAKER

Dr. Arzu Baloglu

Assoc. Prof., Technical University of İstanbul Türkiye.

Arzu Baloglu was a travel writer, a professor, and an independent expert with more than 20 years of experience in information technology, production management, and SAP/ERP implementation. I write for Hürriyet, one of the leading newspapers in Turkey, and share my insights and stories on various destinations and cultures. I also teach business administration and technology management courses at Marmara University and Yeditepe University, and contribute to the academic and professional development of my students and colleagues.

As an independent expert, I provide consultancy and evaluation services to the European Commission on various projects related to ERP, CRM, and e-business. I have successfully managed and delivered multiple SAP/ERP projects in Turkey and abroad, working with diverse clients and partners from different sectors and industries. I have also published several papers and books on technology, internet, and marketing, and given conference seminars and company trainings in my areas of expertise. I am passionate about learning, exploring, and sharing my knowledge and experience with others.

BIOGRAPHY OF KEYNOTE SPEAKER

Dr. Shahrul Nadzir

Founder
DeRIALAH Sdn Bhd Malaysia.

Dr. Shahrul Nadzir was graduated from National University of Malaysia with a Bsc in Environmental Chemistry and continued my Msc at Brandenburg Technical University of Cottbus, Germany for Process Engineering & Plant Design. Afterward, I did my PhD in Atmospheric Science at The University Malaya, Malaysia. While in my PhD period, I distinguished myself as an atmospheric scientist due to my achievement in scientific research activities involving University of Cambridge (UK), University of East Anglia (UK), University of York (UK), and University of Heildelberg (Germany) . I was also awarded a PhD with distinction from UM at the age of 28 in 2012. After finished my PhD, I joined The National University of Malaysia (UKM) as senior lecturer at School of Environmental Science & Natural Resources and appointed as the Head of Centre for Tropical System & Climate Change (IKLIM) at The Institute of Climate Change UKM. I have garnered many research grant including Antarctic Research Grant for Climate Change studies. I have published more than 33 publications including refereed journals, chapter in book and proceedings.

BIOGRAPHY OF KEYNOTE SPEAKER

Dr. Ayse Gul Tanik

Department of Environmental
Engineering Faculty of Civil Engineering
Istanbul Technical UniversityTürkiye

She obtained her B.Sc. degree in Chemical Engineering (1981) and M.Sc. Degree (1984) in Environmental Engineering from Boğaziçi University, İstanbul. Her Ph.D. is in Environmental Engineering (1991) and she got her degree from İTÜ, Faculty of Civil Engineering, Department of Environmental Engineering where she has been a member of teaching staff since 1992. She has become Associate Professor in 1996 and Full Professor in 2002. Her field of interest is integrated watershed management including sustainable agriculture,

BIOGRAPHY OF KEYNOTE SPEAKER

Dr. Mohd Rosdzimin Bin Abdul Rahman

Assoc Prof., Department of Mechanical Engineering Faculty of Engineering Universiti Pertahanan Nasional Malaysia

Dr. Mohd Rosdzimin Abdul Rahman is an Associate Professor in the Department of Mechanical Engineering at Universiti Pertahanan Nasional Malaysia. He holds a PhD in Engineering from Keio University, Japan, a Master of Engineering in Mechanical Engineering, and a Bachelor of Engineering (Hons) in Mechanical Engineering, both from Universiti Teknologi Malaysia. Dr. Rosdzimin has extensive experience in academia and industry. He began his career as a Project Engineer at Solar Alert Sdn Bhd, followed by roles as a Research Officer at Malaysian Agricultural Research and Development Institute and a Product Engineer at Pan Sarawak Sdn Bhd. He joined academia in 2007 and has been teaching and conducting research in Renewable Energy, Computational Fluid Dynamics, and Thermal Sciences since then. He is a Professional Engineer registered with the Board of Engineers Malaysia. Dr. Rosdzimin has been involved in 32 research projects funded by international and national agencies, amounting to RM 1 million, and has published 60 high-indexed journal papers in international journals.

BIOGRAPHY OF KEYNOTE SPEAKER

Dr. Umair Riaz

Asst Prof., Department of Soil & Environmental Sciences MNS-University of Agriculture Multan, Pakistan.

Umair Riaz, PhD, is working as an Assistant Professor (BS-19) in the Department of Soil & Environmental Sciences at MNS University of Agriculture Multan, Pakistan. Dr. Riaz also served as a Scientific Officer (Lab)/BS-17 for six years in the Soil and Water Testing Laboratory for Research, Bahawalpur, under Punjab Government, specializing in waste management, potentially toxic elements determination in sewage sludge and waste, phytochemistry, and phytoremediation. Dr. Riaz's research interests are related to the development of new fertilizer technology based on Nanochemistry with an emphasis on plant nutrition and management of sewage sludge & solid waste management in peri- urban areas. He has supervised graduate & postgraduate students of environmental sciences for the past several years. He is the author of more than 40 research papers and book chapters, and he has presented and participated in numerous state, national, and international conferences, seminars, workshops, and symposia. Dr. Riaz has worked as a Research Associate in Higher Education Commission (HEC) funded projects regarding field studies. Dr. Riaz also serves as a Technical Assessor for ISO 17025 Laboratory accreditation standard with the Pakistan National Accreditation Council (PNAC), Islamabad. Dr. Riaz is also a certified trainer for ISO 9001, ISO 17025, and 14001. He has received many awards, appreciation, and recognition for his services to the science of soil, water, pesticide, and fertilizer testing analysis. He has also served as an editorial board member and reviewer of international journals.

BIOGRAPHY OF SESSION SPEAKER

Dr. Eduardo Garay

Co-Founder & Head of Strategic Alliances
Atta Impact Capital United States

Eduardo has an extensive background in the agri-food sector, experience leading impact projects with small/medium-holder farmers, and rural community development. He ran operations in the Australian beef industry and worked as an agricultural consultant for Zamorano University, his Alma Mater. He has a master's degree in Agriculture from Mississippi State University and is currently pursuing a PhD degree at the University of Minnesota where he is assessing sustainable management practices that maximize agricultural yields and profits while minimizing the environmental impact.

Eduardo deeply enjoys service that implies a greater good, reason why at a very young age he served his country as a volunteer firefighter doing various disaster relief and community impactful projects. He is a global Peace Ambassador for Honduras and was recently awarded the MnDrive Fellowship for food security. He also has served the US National Science Foundation (NSF) as a researcher where he led a multi-state project within the scope of Food, Energy, and Water Nexus Security. Eduardo is a Kirchner Fellowship alumnus and after finishing his tenure, he joined the Kirchner Impact Foundation as a director for the Central American program. As a Honduran native, Eduardo is very passionate and motivated about finding solutions that economically empower underserved regions which urgently demand a step-forward towards food security.

BIOGRAPHY OF SESSION SPEAKER

Dr. Nayab Raza
CEO and Founder

ALGAVERSE, BHAAN: A SUSTAINABLE FOOD FOR SOIL United Kingdom

Nayab Raza, a PhD Scholar at the University of Manchester, UK, is a distinguished academic and entrepreneur with a passion for sustainable agriculture and water management. As the Founder and CEO of ALGAVERSE, she has spearheaded the development of innovative products such as BHAAN, a native freshwater microalgae-based biofertilizer.

Nayab Raza's achievements extend beyond academia. 'Her dream is to build a plant in United Kingdom to make climate resilience and address the agricultural issue with sustainable production'. Her accolades include winning the venture further award 2024, Hackathon 3.0 by The Asia Foundation, the Experimental Innovation Challenge by Women in Energy, and the Green Innovators Program by UNDP, among others.Additionally, she was honored to contribute a chapter on "CLIMATE-FRIENDLY AGRICULTURE AND LAND USE PRACTICES" to the Global Good Governance report 2023 by Cambridge IFA, UK. Furthermore, Nayab Raza is dedicated to promoting gender inclusion and climate-smart agriculture. She has trained over 500-600 farmers in Sindh, emphasizing the importance of sustainable farming practices and empowering women in agriculture. Her efforts serve as an inspiration for women in Pakistan and beyond, encouraging them to actively engage in environmentally conscious agriculture.

In summary, Nayab Raza's contributions to sustainable agriculture, carbon capture, and gender inclusion are remarkable. Through her pioneering research and entrepreneurial endeavors, she is making significant strides in addressing environmental challenges and fostering sustainable development globally.

BIOGRAPHY OF SESSION SPEAKER

Dr. Anuradha

Institute of Environmental Studies (IES)
Kurukshetra University India

Dr. Anuradha is a renowned environmental researcher (scientist) with over 10 years of research experience in forest management, forest mapping, land use land cover, multi-criteria decision making (MCDM), groundwater assessment and management, and fluoride removal. She completed her Ph.D. from Kurukshetra University, Kurukshetra. Dr. Anuradha has an impressive publication record, with eight international publications and four book chapters to her credit. She has also presented ten oral papers at international conferences and attended over 20 international and national conferences.

Currently, Dr. Anuradha serves as a Biology Faculty at Vibrant Kota Coaching Institute, where she shares her expertise with students and inspires the next generation of environmental scientists and biologists. Previously, she worked as an Education Officer at the Haryana State Biodiversity Board in Panchkula, Haryana, promoting biodiversity conservation and education.
Her research expertise includes:

Forest management and mapping
Land use land cover analysis
Multi-criteria decision making (MCDM)
Groundwater assessment and management
Fluoride removal and its impact on human health

Dr. Anuradha's work has significantly contributed to the field of environmental science, and her dedication to biodiversity conservation and education continues to inspire future generations of researchers and practitioners.

SUSTAINABLE AGRICULTURE AND CLIMATE RESILIENCE
A MANAGEMENT PERSPECTIVE

BIOGRAPHY OF SESSION SPEAKER

Dr. Adel Sepehr
Industry Fellow Memeber Australian Rivers institute Griffith University, QLD, 4111 Australia

Adel is known as an Associate Professor in Geoscience, an award-winning scientist in environmental science, an executive member of the International Association of Geomorphology, and a reviewer for several scientific journals. During his tenure, he authored and co-authored numerous publications in high-quality journals. Currently, he is a Natural Resources Management Specialist at the Department of Resources, Queensland Government. Adel specializes in soil geomorphology, soil erosion control, and soil biology, particularly in relation to ecosystem management, climate change, and sustainability issues. His research employs biogeoscience methods, including biocrusts and microbial communities, to restore degraded lands and promote ecological restoration. His research interests encompass remote sensing, soil science, ecogeomorphology, sustainability, and ecological management. Beyond his technical expertise, Adel is also passionate about literature, epistemology, calligraphy, and writing short stories inspired by nature.

BIOGRAPHY OF SESSION SPEAKER

Dr. Hamid Behnegar
CEO
Parto TapRayan Iran

Managing Director of Parto Top Rayan Company(PTR) in the field of smart agriculture & Smart livestock solutions. PhD in artificial intelligence and robotics. Head of Information and Communication Technology Association of Tehran Chamber of Commerce. The head of the "digital transformation of agriculture Commission ", IRAN Computer Union Organization Member of the Board of Directors of Iran-UAE Chamber of Commerce Member of the UN Climate Technologies CNCT. The author of the book Agriculture Generation based on emerging technologies Representative of Iran in ISO-Smart Farming International Standards Organization

BIOGRAPHY OF SESSION SPEAKER

Mr. Mohd Afzanizam Muda

Industry Risk Analyst Group Climate Risk Management & Research (CRMR) GCRO Office Maybank Group,Universiti Malaya, Malaysia

Mr. Mohd Afzanizam Muda is an analyst at Maybank Berhad (MBB) Malaysia under Climate Risk Management and Research (CRMR) since June 2023. He is previously affiliated with Forest Research Institute Malaysia (FRIM) under Climate Change and Forestry Unit from 2016-2022. Among research project undertook on carbon stock assessment in peat swamp forest in Pekan Pahang and net ecosystem production (NEP) of tropical lowland forest in Malaysia. This mitigation project including study on greenhouse gas emission from peat swamp forest. His also has interest and work experience on national greenhouse gas inventories. The job scope is a combination of fieldwork and desktop job. Fieldwork comprises of sampling and monitoring activity as well as documentation for example preparations of research proposal for research funding purpose, requirement for workshop or training program attendance and also technical publication. Some active professional membership including: Malaysian Society of Plant Physiology (MSPP), Malaysian Nature Society (MNS), SINO ASEAN Network for Forest Research Institute (SANFRI) Young Scholar China, Alumni for International Foundation for Science (IFS), Sweden for Collaborative Research Grant recipient (Team member Malaysia, Thailand and Vietnam), International Society of Tropical Foresters (ISTF) (Asian Chapter) and National STEM (Science, Technology, Engineering & Mathematic) Association.

BIOGRAPHY OF SESSION SPEAKER

Dr. Saleh Shadman

Co-Founder
Eco Thinkers Malaysia

PhD from University of Nottingham in developing an energy security index and model to assess Malaysia's energy policies and their viability in improving sustainability. Have published over 12 journal articles in high impact journals related to energy and sustainability. Have worked as a project lead and project manager for 16 different sustainability projects in Malaysia, India and Bangladesh in a wide array of industries.Public and in-house sessions with conglomerates, and SME's in Malaysia having trained and upskilled them with fundamentals of sustainability and ESG and moving to the depth of crucial material topics like carbon footprint assessment and waste management. Completed over 500 hours of training sessions over the course of time. Dr. Saleh Shadman is a seasoned expert in materiality assessment, ESG reporting, and carbon management, with over six years of experience. With a PhD in Mechanical Engineering, he has successfully led numerous sustainability initiatives across different sectors. His expertise extends to overseeing sustainability reporting for public-listed companies in Malaysia, ensuring compliance with GRI, TCFD, and Bursa Malaysia standards.

BIOGRAPHY OF SESSION SPEAKER

Ms. Marcela Flores
CEO

Tierra-Foods United Kingdom

Marcela Flores (CEO and co-founder) is a food entrepreneur from Mexico. Prior to Tierra Foods, she founded a multi-award winning food brand and has experience across Unilever, Quorn and Divine Chocolate. Through deep involvement in food supply chains, Marcela realised our food systems' impact, and became determined to research and implement science-based and nature-based solutions to balance productive food systems with planetary health, human health, social & economic well-being. Marcela holds a Master's in Sustainability Leadership from Cambridge University and focused her thesis on the barriers and enablers for indigenous people to conserve and restore the Maya rainforest, which is threatened yet holds significant climate and biodiversity value. Marcela's entrepreneurial experience, deep understanding of local indigenous communities and strong credibility with CPG companies provides excellent grounding to build a harmonious solution that creates wins for all.

Marcela Flores (CEO y cofundadora) es una emprendedora de alimentos de México. Antes de Tierra Foods, fundó una marca de alimentos ganadora de múltiples premios y tiene experiencia en Unilever, Quorn y Divine Chocolate. A través de una profunda participación en las cadenas de suministro de alimentos, Marcela se dio cuenta del impacto de nuestros sistemas alimentarios y se decidió a investigar e implementar soluciones basadas en la ciencia y la naturaleza para equilibrar los sistemas alimentarios productivos con la salud planetaria, la salud humana y el bienestar social y económico. Marcela tiene una maestría en Liderazgo en Sostenibilidad de la Universidad de Cambridge y centró su tesis en las barreras y facilitadores para que los pueblos indígenas conserven y restauren la Selva Maya, que está amenazada pero tiene un valor climático y de biodiversidad significativo. La experiencia empresarial de Marcela, su profundo conocimiento de las comunidades indígenas locales y su sólida credibilidad con las empresas de alimentos proporcionan una excelente base para construir una solución armoniosa que genere beneficios para el bien común.

COMMITTEE MEMBERS

Scientific Committee

Dr.El Sayed El Habbasha

Associate Professor, Dept: Field Crops Research National Research Center undefined, Egypt

Dr.Ahmed Harb Rabia

Research Assistant Professor, Department of Agricultural and Biosystems Engineering North Dakota State University North Dakota, USA

Dr.ROSSANA MARIE C. AMONGO

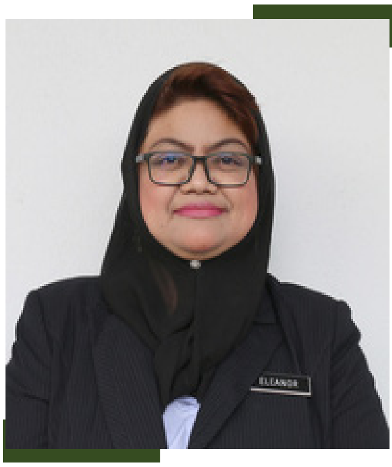
Professor 6 and Vice Chancellor for Planning and Development, Institute of Agricultural and Biosystems Engineering Univeristy of the Philippines Los Banos Los Baños, Philippines

Dr.Tuna BATUHAN

Associate Professor, Faculty of Economics and Administrative Sciences Ataturk University Atatu, Erzurum,

COMMITTEE MEMBERS

International Advisory Committee



Dr.ELEANOR DANIELLA BT LOKMAN

Others, Department of Fisheries Malaysia, Ministry of Agriculture and Food Industry Universiti putra malaysia Seri Kembangan, Malaysia

Ms.Rosalinda L. Abad

Others, Institute of Agricultural and Biosystems Engineering Don Mariano Marcos Memorial State University City of San Fernando, Philippines

Dr.Bhaskara Anggarda Gathot Subrata

Lecturer, Faculty of Agriculture Universitas Gadjah Mada Yogyakarta, Indonesia

COMMITTEE MEMBERS

National Advisory Committee

Dr.Fatih Eren

Associate Professor, Department of Urban and Regional Planning Istanbul Technical University Istanbul, Turkey

Review Committee

Dr.Fatih Eren

Associate Professor, Department of Urban and Regional Planning Istanbul Technical University Istanbul, Turkey

Dr. Masoud Torabi

Assistant Professor, Department of Forage Crops Applied science university of Isfahan Isfahan, Iran

Abstract's INDEX


Istanbul, Turkey
Intercontinental Conference on
Sustainable Agriculture and Climate Resilience:
A Management Perspective
ABSTRACT'S

A Comparative Study On Methodologies For Greenhouse Gas Estimation For Agriculture In Tajikistan

Gideon Balasingam
Fairtrade NAPP

Rebecca Anns
Fairtrade NAPP

Shobana S
Fairtrade NAPP

Deepthi Krishnan
Fairtrade NAPP

Abstract:

Global climate change poses a significant threat to sustainable development. This is evident through rising temperatures and resulting phenomena such as glacier melting, extreme weather events, and agriculture challenges. This impact extends across ecological, social, and economic systems worldwide. Agriculture, in particular, faces significant risks, with traditional crop production becoming increasingly untenable. This study, based on fieldwork in Tajikistan, conducted by Fairtrade NAPP, on one hand traces the current agriculture practices in Tajikistan that contributes to the greenhouse gas emission. On the other, it attempts to estimate GHG emission through these agricultural practices and explores different methodology appropriate for different crops based on feasibility of methodology and availability of data. It relies on an online tool, Cool Farm Tool and quantitative formula based on earlier research to estimate the emissions of Green House Gas in agriculture practices of crops like cotton, apricots and vegetables. In connection to this, the study identifies the causes of greenhouse gas emissions and the carbon sinks, and thereby draws attention to the sustainable agricultural practices.

Keywords:

Agriculture, Carbon Credits, Carbon Sequestration, Cotton, Cool Farm Tool, Ecomatcher, Fairtrade, Green House Gas Emissions, Tajikistan

9 788197 620980

Effects of Gamma Radiation on Germination and Early Growth of Two Provenances of Pterocarpus Indicus Wild

Angelito h. Bisquera, jr
Bachelor of Science, University of the Philippines Los Baños

Lerma sj. Maldia
University of the Philippines Los Baños

Abstract:

Gamma radiation has been applied in the improvement of plant species. It has been widely applied in improving the germination and growth characteristics of agricultural crops but very limited in forest trees. In this study the Pterocarpus indicus was used to test the effects of gamma radiation on the germination and early growth characteristics of the seedlings of the species. Seeds from two provenances were exposed to three doses of gamma radiation; 5Gy, 25Gy, and 75Gy. The germination rate and growth of seedling generally had significant increased when exposed to up to 25Gy but decreased significantly at 75Gy. This result suggests the potential positive effects of gamma radiation in enhancing the germination and early growth characteristics of P. indicus and may be of help to other tree species, especially those with inherent low capacity to germinate.

9 788197 620980

Dijital Agriculture and Sustainability Practices in Rural Turkey: A Review on the Villages of Tomorrow Project

Merve Ozdemir
Field Facilitator at United Nations Development Programme (UNDP) and Trendyol

Irem Poyraz
United Nations Development Programme (UNDP) and Trendyol

Abstract:

Digital agriculture technologies offer significant opportunities to increase agricultural productivity, utilize water and soil resources efficiently, and improve farmers' incomes. This article examines the impact of these technologies on sustainability in Türkiye's rural areas and the role of the "Villages of Tomorrow" project. In partnership with the United Nations Development Programme (UNDP) and Trendyol, the project aims to promote the adoption of digital agriculture technologies in rural areas and foster sustainable development. The project focuses on disadvantaged groups and promotes gender equality. Climate stations, soil moisture monitoring devices, automatic irrigation systems, pest tracking cameras, crop observation cameras and consultancy services are provided to farmers to ensure the efficiency of these technologies. By 2028, the project aims to establish ten "villages of tomorrow" across various regions of Türkiye, equipping them with digital agriculture equipment. Prioritizing low-carbon solutions and aiming for carbon neutrality, the project adopts circular economy models in the agricultural industry and integrates technologies such as machine learning and AI. According to the project's 6-month data, 20% savings in labor, 15% in fertilizer, 25% in pesticides were achieved with the agricultural climate station. Additionally, 25% savings in pesticides were achieved with the digital pest trap, 15% in electricity with the soil moisture station and irrigation automation, and 20% in fuel with the tractor tracking device. During the same period, 881 people attended trainings, majority being women and students. In conclusion, the project offers a model for the adoption of digital agriculture and achieving sustainability goals in Türkiye's rural areas.

9 788197 620980

Economic Valuation of Natural Resources and Environmental Services in Coastal and Marine Areas in Kebumen District, Indonesia

Fitria Purnamasari
Passionate M.Sc. Graduate of Gadjah Mada University, Indonesia

Annisatun Nadzafah
Graduate of Gadjah Mada University, Indonesia

Abstract:

The importance of economic valuation is as a tool to be able to take advantage of goods and services, natural resources, and the environment wisely and proportionally. The ability of natural resources and the coastal environment to provide services and contribute to the real global climate greatly contributes to the economy. Kebumen Regency is located in Central Java Province, on the southern coast of Java Island, Indonesia. The main objective of the economic valuation of natural resources and environmental services in the coastal and marine areas of Kebumen Regency is to identify existing resources in Kebumen Regency. The data analysis used in the research is a quantitative descriptive analysis. Kebumen Regency is one of the districts supporting staple foods, especially rice, in Central Java. The total value of direct benefits for Kebumen Regency is IDR. 43.944.007.854.232,70, which includes the fisheries sector, plantations, agriculture, livestock, tourism, and settlements. The total value of indirect benefits obtained from the tourism sector amounts to IDR. 938,160,000. From the data analysis, it can be seen that there are still aspects that are not managed properly and need contributions and cooperation between the community and regional governments in managing or utilizing natural resources.

9 788197 620980

MangoTayo!: A Sustainable Smart Agriculture Model for Mango Industry Upliftment in Davao del Sur, Philippines

Rhea Mae L. Perito
Institute of Computing, Engineering, and Technology Davao del Sur State College, Philippines

Karl Vincent A. Surdella
Institute of Computing, Engineering, and Technology Davao del Sur State College, Philippines

Richie Boy D. Restauro
Institute of Computing, Engineering, and Technology Davao del Sur State College, Philippines

Nel R. Panaligan
Institute of Computing, Engineering, and Technology Davao del Sur State College, Philippines

Domingo V. Origines, Jr.
Institute of Computing, Engineering, and Technology Davao del Sur State College, Philippines

Eduardo F. Aquino
Institute of Computing, Engineering, and Technology Davao del Sur State College, Philippines

Razel Ann G. Aguilar
Institute of Computing, Engineering, and Technology Davao del Sur State College, Philippines

Mark Julius B. Noval
Institute of Computing, Engineering, and Technology Davao del Sur State College, Philippines

Jeah A. Bejarasco
Institute of Computing, Engineering, and Technology Davao del Sur State College, Philippines

Abstract:

Mango production in the Philippines ranked seventh in the world as it produces high-quality mangoes and supplies different countries. However, as stated by the Philippine National Statistics, there was a decline in yield; a difference of 5.8 percent from 27.0 thousand metric tons produced in 2021 down to 25.47 thousand metric tons in 2022. Other problems encountered by many farmers specifically small-scale farmers are lack of pest control and nutrient management, poor induction and flowering intensity, the lack of farm-to-market roads, and low farm-gate prices. One of the Agenda of United Nation's Sustainable Development Goals aims to address SDG 2: Zero-hunger which aims to support sustainable agriculture and empower small-scale farmers, increase agricultural production, improve the global supply chain, reduce food losses and waste, and ensure that all people who are hungry or malnourished have access to nutritious food. Responding to these issues, the Mango Tayo! Program developed an AI-based Smart application for mango production management, utilizing cutting-edge technologies in smart agriculture. Thus, conducted community engagement and activities to capacitate the women and men mango growers and contractors with the use of the developed technology. The program was found to be successful in achieving its objectives—bringing impact to the lives of its community partners.

Keywords:

mango, artificial intelligence, iot, smart agriculture, community extension.

9 788197 620980

Agroecological Approaches for Climate Resilience in Arid and Semi-arid Regions

Sara Safikhan
Kimiya Khak Falate Sabz, Tehran-Iran

Babak Salimzadeh Vaighan
Kimiya Khak Falate Sabz, Tehran-Iran

Abstract:

Climate change poses a significant threat to agricultural production, particularly in arid and semi-arid regions, where dryland agriculture is vulnerable to drought and other climate-related risks. These challenges impede progress towards key Sustainable Development Goals (SDGs), including poverty alleviation, food security, nutrition improvement, and sustainable agriculture. Due to its inherent risks and limited resource base, dryland farming faces heightened production uncertainty. Agroecology, although not originally designed to address climate change, offers a viable solution by mimicking natural ecosystems and applying ecological principles that enhance resilience to climate stresses. Agroecological practices such as crop diversification, agroforestry, soil conservation, and water-efficient farming have shown promise in improving soil fertility, diversifying food sources, and reducing vulnerability to drought. However, the sustainability of these practices amidst growing climate crises remains a challenge.

This paper explores the current environmental challenges in dryland farming, assesses existing coping and adaptation strategies, and evaluates their effectiveness. It also examines the potential of agroecology to foster climate change adaptation, mitigation, and resilience through two main approaches: (1) a policy analysis within the framework of the United Nations Framework Convention on Climate Change (UNFCCC), highlighting the role of agroecology in global climate adaptation strategies, and (2) a meta-analysis of scientific research assessing the impact of agroecological practices on climate resilience.

Key Findings: The meta-analysis reveals that agroecological practices significantly improve resilience by promoting biodiversity, soil health, and ecosystem services. These ecological principles are foundational for a proposed roadmap to enhance sustainable crop production, emphasizing the transfer of knowledge into plant breeding and crop management strategies tailored to dryland environments.

Challenges and Barriers: Despite the scientific evidence supporting agroecology, its adoption is hindered by policy frameworks that prioritize short-term productivity and sector-specific approaches. This gap underscores the need for more integrated, systemic policies that support long-term sustainability and resilience.

Recommendations: To fully harness the potential of agroecology as a climate adaptation strategy, it is crucial to promote cross-sectoral collaboration, improve access to agroecological knowledge, and encourage policies that prioritize biodiversity and ecological health. Further research is needed to explore the multidimensional benefits of agroecology, both as a scientific paradigm and as a movement that empowers local communities and farmers.

Keywords:

Agroecology, sustainability, environmental stress, food security, crop physiology.

9 788197 620980

The Effect of Electro Magnetic Fields (EMFs) on Seed Germination and Seedlings Physiological Changes of Coriandrum Sativum L. to Achieve the Optimum Frequency of Electro Magnetic Field

Zahra Atghia
No: 15, Spradon Quartz Complex, Bahcesehir Part 2, Basaksehir, Istnabul, Turkey

Ahmad Majd
Department of Biology, Faculty of Biological Sciences, Islamic Azad University, Tehran, Iran.

Abstract:

Recently, most scientists and researchers have been focused on Pharmacological and Medicinal Plants to consider Antioxidant components and Secondary Metabolites. Coriandrum sativum, known as the Coriander, is one of the most important Medicinal plants from Apiaceae family. One of the methods for increasing the amount of Secondary Metabolites such as Anti-Cancer/Tumor Metabolites, is to utilize Electro Magnetic Fields (EMF) as the Stress which influences on seed germination and seedlings Physiological changes by changing intensities and times of effects. The Positive and Negative effects are influenced the features such as rate of seeds and seedlings growth as well as the Biomass. The Process is taken by changing in potential electricity of cells membrane and physiological processes while there is no engineer manipulated in cells; Valsivoski, 2003. So, this physiological method has been the most functional optimum that causes the next generous will appear without any engineered manipulation. It is considered 3 frequencies of EMF such as 3, 5, 7 Mili Tesla as the treatments in 3 different times 5 min, 10 min, 15min, for each of the treatments in 2 repeats. Based on numerical analyzer, the result shows the most functional optimum in 7 Mili Telsa under the seeds germination and growth than the normal seedlings, therefor this test is done again in 3 new different EMFs including, 6.5, 7.5, 8.5 Mili Tesla in 2 repeats.

The new numerical analyzer data displays that the time is another important factor for the EMF effects, so that the time as 10 minutes in both 7.5 Mili Tesla and 8.5 Mili Tesla treatments implies the high rate of seeds germination and growth in normal for seedlings up to upper leaves than first step as 2 leaves seedlings, meanwhile in other treatments are going to be abnormal leaves in shapes and sizes, consequently they are going to necrosis and apoptosis. As result, the observations make the time and the frequencies as the main factors by together to get the maximum anti-cancer metabolites in defined time for the future pharmacological processes of industry.

Keywords:

Electromagnetic field, EMF, Coriandrum sativum, Secondary Metabolite, Anti-cancer/tumour metabolite, Anti-cancer/tumour herbal drug, Coriander.

9 788197 620980

Performance of Selected Traditional Upland Rice Varieties (Oryza Sativa Linn.) In Southern Oriental Mindoro Under Organic Fertigation

Carmomir V Gadon
College of Business and Management, Mindoro State University, Philippines

Abstract:

This study examined the response of three traditional upland rice varieties (TURVs) to organic liquid fertilizer mixtures applied via fertigation across the southernmost municipalities of Oriental Mindoro province from January to August 2023. Employing a 3 x 3 factorial design within a Randomized Complete Block Design with sub-sampling, the TURVs (Kabuno, Kamuros, and Makaawa) were designated as Factor A, while the organic liquid fertilizer mixtures (Fermented Plant Juice + Fish Amino Acid, Seaweed Extract + Vermicompost Tea, and pure water as control) were Factor B. The study covered a total area of 450m², with each municipality serving as a block.

The effects of fertigation using organic liquid mixtures on growth, yield responses, and agronomic parameters of the TURVs were carefully observed and recorded. Plant height, tiller number, heading date, biomass yield, panicle length, grain fill, thousand-seed weight, yield, plot yield, yield per hectare, harvest index, and maturity were analyzed using Tukey's Test in SAS software.

Results indicate that Makaawa emerged superior among TURVs, displaying significant differences in most parameters except for filled grains and thousand-seed weight (TGW). Furthermore, the Fermented Plant Juice + Fish Amino Acid (FPJ + FAA) mixture outperformed Seaweed Extract + Vermicompost Tea (SE + VCT) and control in various parameters.

The study concludes that Makaawa holds promise for sustainable rice production, while FPJ + FAA enhances growth and yield performance. Recommendations include further research on alternative application methods, exploration of additional TURVs, and economic analysis of these interventions in upland rice production.

Keywords:

Traditional Upland Rice Varieties, organic liquid fertilizer, fertigation, upland farming.

9 788197 620980

Improved Corn Fertilization Using Organic-mineral Fertilizers to Reduce Material Amounts and Emissions

berlan rodriguez
PhD, Departamento Académico de Ciencias de la Gestión, PUCP, Peru

Tomas Samaniego
PhD, Departamento Académico de Ciencias de la Gestión, PUCP, Peru

Abstract:

Mineral fertilizer (MF) production and application are among the largest sources of greenhouse gas emissions in agriculture. Although organo-mineral fertilizers (OMF) produced with locally available organic matter are compatible with the current tailwinds on circular economy, little information is available on the scale of emissions reduction that could be achieved with these products. We performed a cradle-to-gate life cycle analysis on seven OMF produced in Peru, considering a 50 kg bag presentation as functional unit. Life cycle inventories were conducted covering material inputs, energy consumption and logistics. The ReCiPe Midpoint method was used to model the production footprint in impact categories including resource usage and emissions to the environment, the emission profiles were compared to the impact categories associated to MF reported on the EcoInvent v. 3.0 database. The carbon footprint of OMF was as small as 33% of MF depending on the categories compared. The largest difference was observed in nitrogen products, where up to 80 kg CO2 eq could be reduced per bag of product, followed by mixed nitrogen-phosphorous, and the smallest difference of less than 10 kg CO2 eq found for potassium products. A similar pattern was observed when comparing mixed NPK OMF and MF products. The scale of the emissions reduction depends on the NPK contents of the organic matter used for manufacture, MF sources and other factors. These results represent a particularly valuable baseline for strategic planning for the decarbonization efforts in agriculture worldwide when addressing circular economy approaches and solid waste valorization.

9 788197 620980

Empowering Youth in Agriculture for Climate Change Adaptation and Resilience: A Bibliometric Analysis

Madende Primrose
University of the Free State, South Africa

Nyaki SA
University of the Free State, South Africa

Jordaan H
University of the Free State, South Africa

Henning JIF
University of the Free State, South Africa

Abstract:

Youth participation in agriculture has become an evident policy focus in sub-Saharan Africa given the youthful population and prevalent youth unemployment. Similarly, climate change impact has become apparent in agriculture necessitating adoption of climate smart approaches and building resilience among farmers and agriculture value chain actors. The integration of youth into agricultural practices and climate change adaptation strategies is crucial for the long-term sustainability and resilience of food systems. Yet, research that accommodates the role of youth in enforcing climate change adaptation and resilience specifically in agriculture has been narrow, which affects the expected impact of policies in climate change. This study employed a bibliometric analysis to map the research trends on this topic from 2013 to 2023. A total of 440 articles were retrieved from the Scopus and Web of Science (WoS) databases to characterize the field and identify research patterns. Evidence has been established from the reviewed literature that climate change and adaptation has been a significant but building resilience to cope with associated changes and impacts of climate to be lacking. Furthermore, youth specific studies are limited. Given empowering youth in agriculture, climate change adaptation, and resilience building is a strategic investment in the long-term food security, environmental sustainability, and socioeconomic development of communities, this article illustrates literature insufficiently address educating and engaging youth in climate change issues. Trending topics in building climate resilience in agriculture practice and policy covered in this review provides insights into practical actions and policy options to account for youth participation in building climate resilience in agriculture sector that is currently insufficiently addressed.

Keywords:

Youth in agriculture, climate change, climate adaptation, climate resilience, climate change policy.

9 788197 620980

Effect of Panicum Maximum Fortification with Fungi (Sacchromyces Cerevisea) on Physicochemical Composition and Feeding Behavior of Goat

A. Suleiman
Department of Animal Science, Faculty of Agriculture, Federal University, Dutsin-Ma, Katsina State, Nigeria

A. I Maryam
Department of Fisheries and Aquaculture, Faculty of Renewable Natural Resources, Federal University, Dutsin-Ma, Katsina State, Nigeria

M. N. Sabo
Department of Animal Science, Faculty of Agriculture, Federal University, Dutsin-Ma, Katsina State, Nigeria

Abstract:

The experiment was carried out at Livestock Teaching and Research Farm, Federal University Dutsin-Ma to determine the effect of Panicum maximum Fortification with Saccharomyces cerevisiea on Physicochemical Composition and Feeding Behavior of Goat. A total of 12 empty sample bottles was randomly allotted into four (4) Treatments containing 50g of Panicum maximum each and replicated three (3) in a Completely Randomized Design (CRD). T1 composed of 0g Saccharomyces cerevisiea and molasses 20ml. While 2.5g, 5g, and 7.5g Saccharomyces cerevisiea and molasses 20ml each for T2, T3, and T4 respectively. The result showed that there was variation in physical appearance of Panicum maximum Fortified with Saccharomyces cerevisiea in terms of color in which T1 has light brown color, T2 and T3 have brown color and T4 was found to have dark brown color respectively. The fortification of Panicum maximum with Saccharomyces cerevisiea affects the chemical composition of the diet. The result indicated that there was no significant difference across all the 3 treatments (T2, T3 and T4) except for the control (T1) which has the highest eating behavior = (++) while no sniffing, snorting, vocalization, trampling and urination were recorded in T1.

Keywords:

Panicum Maximum, Sacchromyces cerevisea, physicochemical, fortification.

9 788197 620980

Unraveling the Fungicide Resistance in Alternaria alternata through Integrated Enzymatic, Phenotypic, and Colony Growth Analysis

Mansoor Hayat
student, Northeast forestry university Harbin China

Zhanbin Wang
student, Northeast forestry university Harbin China

Abstract:

Alternaria alternata is causing black spots in a variety of fruits and vegetables. There are major post-harvest losses due to a hidden fungus that develops when fruits are kept in the cold and comes up during the fruit marketing season. To control Alternaria alternata diseases, the fungicide resistance mechanisms of Alternaria alternate have been investigated. The findings demonstrate the effects of different growth media on Alternaria alternata growth rates, exposing notable variations in radial growth among the evaluated media. Compared to the control media, the resistance strain in the EC100 medium grows at a slower rate. Conversely, the resistant strain wild media (RS-WM) exhibited higher growth, whereas the wild strain resistance media (WS-RM) showed very little growth. the results further show that the resistance strain had less mycelial development, but the wild strain proliferated. Biochemical tests revealed notable distinctions between the wild and resistant strains, The linear connection (R2) between the protein concentrations and absorbance variance accounts for 99.38% of the variance. The resistant strains and the wild strains' respective control protein ratios (CPr) are 0.187 and 0.192. when comparing the enzyme activities of the resistant strain to those of the wild strain, the mean values of MDA, CAT, and SOD are much higher: 360.89 mgprot/mL, 35.54 mgprot/mL, and 179.60 mgprot/mL, respectively. The mean values of MDA, CAT, and SOD are higher in the wild strain, with 179.19 mgprot/mL, 11.91 mgprot/mL, and 161.36 mgprot/mL recorded, respectively. Furthermore, the resistance strain shows less variability with bigger standard deviations (MDA: 61.82, CAT: 1.12, SOD: 9.31), and tighter clustering around its means (MDA: 14.13, CAT: 0.95, SOD: 5.47). These differences demonstrate the enzymatic reaction of the resistant strain. The obtained results demand more investigation into the molecular mechanisms behind these responses and the significance of customized strategies for crop protection and disease prevention. The result will help in the creation of accurate interventions, which could promote sustainable farming practices and improve food security among fungal infections and evolving environmental circumstances.

9 788197 620980

Growth, Yield and Quality of Onion (Allium-Cepl.) as Influenced by Intra-Row Spacing and Nitrogen Fertilizer Levels in Gashua Sahel Savanna Region of Nigeria

Mu'azu A
Department of Agronomy Federal University Gashua,YobeState

Abstract:

Haphazard and inappropriate plant spacing and poor soilfertility management practice are among the major factorsconstraining onion production in Gashua, Bade Locale Government Yobe State.Field experiments were conducted in 2023 dry season ar Federal University, Gashua university farm assess the influence of intra-row spacing (2.5, 5, 7.5, 10 and 12.5 cm) and nitrogen fertilizerrate (0, 41, 82 and 123kg Nha-1) growth, bulb yield and quality of onion. The experiment was laid out in a randomized complete block design (RCBD) with three replications. The main effects of nitrogen rate and intra-row spacing influenced only the plant height stand count significantly obtained from 7.5cm and 82kg Nha-1 intra-row spacing and nitrogen fertilizer respectively. The highest yield was obtained from the application of 82kg Nha-1 and plant spacing of 5.0cm and 7.5cm respectively.

Keywords:

Onion, Intra-Row Spacing, Nitrogen fertilizer and Yield.

9 788197 620980

Multimodal Modelling: Inter Islands Rice Commodity Transportation Due to Climate Change Disruption in Indonesia

Muhammad Suryo Panotogomo Abi Suroso, S.T., B. Eng., M. Log
Assistant Professor, Sumatera Institute of Technology (ITERA), Indonesia

Dian Fajarika, S.T.P., M.T
Assistant Professor, Sumatera Institute of Technology (ITERA), Indonesia

Abstract:

Climate change poses serious challenges to the rice supply chain in Indonesia, where disruptions such as rough sea conditions and flooding frequently delay multimodal transportation. These delays lead to uncertainty in rice distribution, providing opportunities for middlemen to manipulate logistics costs without benefiting farmers. This research addresses these issues by developing an optimized model for rice transportation, improving both distribution efficiency and resilience in the face of climate-induced disruptions.

The study employs a combination of Soft Systems Methodology (SSM) and Operations Research (OR) techniques. SSM is used to understand the complex interactions between stakeholders and systemic inefficiencies, while OR methods optimize transportation routes and logistics operations. By focusing on the Indonesian rice distribution system, this research not only seeks to reduce delays but also to enhance overall food security and climate resilience.

The findings are expected to offer practical solutions for policymakers and supply chain managers, contributing to the stability of Indonesia's rice distribution system and ensuring more secure access to food in a changing climate.

Keywords:

Multimodal Model, Rice Transportation, SSM, OR, and SC Optimization.

9 788197 620980

The Nexus of Climate Change Education at Turkish Universities

Fatma Senem Gungor
Communication Faculty, Baskent University, Türkiye

Ceyda Kuloglu
Communication Faculty, Baskent University, Türkiye

Abstract:

The Nexus of Climate Change Education at Turkish Universities

Universities worldwide are progressively acknowledging their duty to equip students and society for active participation in climate change management and adaptation. Higher education institutions are specifically tasked with cultivating future leaders and decision-makers who can comprehend and address complicated global challenges. Educational programs emphasizing multidisciplinary thinking are essential for training future leaders to address unforeseen challenges. This position involves universities implementing and encouraging carbon neutrality objectives and practices.

This study examines the core curriculum of the 19 Turkish universities in the capital city, Ankara, to evaluate the percentage of core courses that emphasize climate change or climate science. This search process omitted other possible sources of information regarding effective climate change teaching strategies. It was exclusively pursued resources published in English and found in the peer-reviewed literature indexed in EBSCOhost. Furthermore, this study enhances the existing literature on sustainability in higher education by integrating it with research on the university's core curriculum and concentrating on the specific topic of climate change education.

Consequently, higher education providers are essential in instructing future environmental auditors, community organizers, corporate managers, engineers, practitioners, technical professionals, policymakers, and, importantly, the community regarding actions to mitigate and adapt to climate change while simultaneously promoting social and governance initiatives. Over time, the cumulative rise in societal awareness increasingly affects the practices of the corporate sector, community stakeholders, and local and national governments concerning the management of climate change mitigation and adaptation within their respective domains, including support, daily actions, and professional careers.

9 788197 620980

Assessing Climate Change and Sustainable Agriculture Policies as Opportunities for Cooperation and Solidarity in Turkey-EU Relations

Kıvılcım Romya Bilgin
Assistant Professor, Baskent University, Türkiye

S. Sezgin Mercan
Assistant Professor, Baskent University, Türkiye

Abstract:

The relationship between Turkey and the European Union (EU) is being reshaped by global challenges such as climate change and sustainable agriculture. Within the framework of the European Green Deal and the Common Agricultural Policy (CAP), Turkey's alignment with EU agricultural and environmental policies serves as a significant test of long-term political resilience between the two sides. This paper aims to explore how cooperation in the areas of climate change mitigation and sustainable agriculture can evolve beyond crises into a more sustainable and enduring partnership in Turkey-EU relations.

Global issues like climate change have the potential to redefine political fault lines, and Turkey's efforts to harmonize its policies with the EU may open new avenues for strategic and long-term solidarity. In this context, the functionality of existing governance structures takes on greater importance, as they offer the potential to foster stronger cooperation and political resilience through climate change and sustainable agriculture policies.

Moreover, the role of policymakers in Turkey and the EU in shaping relations through climate change and sustainable agriculture policies will be analyzed. This research seeks to address the question of whether climate change and sustainable agriculture policies can become opportunities for cooperation and solidarity between Turkey and the EU, and how these policies might transform the strategic relations between the two sides while expanding the scope for addressing climate change and promoting sustainable agricultural development.

9 788197 620980

Farmers’ Perceptions on the Capacity of Extension Practitioners on Climate Change in the Eastern Cape Province of South Africa

Anathi Makamane
Lecturer, University of the Free State, South Africa

Jan Swanepoel
Lecturer, University of the Free State, South Africa

Olwethu Loki
Lecturer, University of the Free State, South Africa

Abstract:

Background: Farmers generally expect extension practitioners to understand agricultural information and its impact on their production. Over the years, climate change and its effects on agricultural production have been central to many discussions, focusing on best practices for adaptation and combating climate change effects. Agricultural extension services have been crucial in these initiatives, acting as conduits for climate change-related information. However, observable changes in farmer practices and outputs are still lacking as farmers struggle to adapt to climate change.

Results: A cross-sectional survey using interviews and structured questionnaires was conducted with 175 randomly selected farmers. Content analysis evaluated farmers’ perceptions of practitioners’ competencies, while a binomial logistic model assessed factors influencing these views. The results showed that most farmers had access to extension services and relied on them for climate adaptation information. About 72.6% of respondents found practitioners knowledgeable about climate change, and the information provided improved their adaptation efforts. The logistic model revealed that gender significantly influenced perceptions, with male and female farmers having different views on extensionist’s competency. More experienced farmers tended to see extension officers as less competent in climate change matters. Membership in an organization led to more positive views of extension competency, while limited access to extension services correlated with less favourable perceptions, indicating that access barriers affect farmers’ opinions. Farmers value technical climate knowledge and stress the need for continuous training in climate change for practitioners.

Conclusion: The study recommends regular engagement with practitioners, ongoing technical training, and a renewed focus on managing and educating indigenous knowledge.

Keywords:

Climate Change, Extension Practitioners, Capacity Needs, Perception, Farmers, Eastern Cape.

9 788197 620980