



**UNIVERSITY OF NAIROBI
FACULTY OF AGRICULTURE**

AGRO 2023-BIENNIAL CONFERENCE AND EXHIBITION (HYBRID CONFERENCE)

25th - 26th October, 2023

**Hosted at 844 Building, Department of Agricultural Economics,
Faculty of Agriculture, Upper Kabete Campus, UoN.**

PROGRAMME

THEME: 'Harnessing Research in Agriculture and Environment for Resilient
and Sustainable Food Systems and Livelihoods'

Agro Conference Conveners

Prof. Moses Nyangito, Dean Faculty of Agriculture - Convener, Agro-conference 2023,
Faculty of Agriculture

Prof. Catherine Nkirote Kunyanga, Associate Dean, Faculty of Agriculture - Convener,
Agro-conference 2023, Faculty of Agriculture

Organizing Committee Members

Dr. Oscar Koech - Chairman, Organizing Committee Agro- Conference 2023

Dr. Sophie Ngala - Co-Chairman, Organizing Committee, Agro-Conference, 2023

Prof. Douglas Watuku Miano - Organizing Committee Member, Agro-Conference, 2023.

Prof. Maina Muiro - Organizing Committee Member, Agro-Conference, 2023

Prof. Oliver Wasonga - Organizing Committee Member, Agro-Conference, 2023

Prof. David Jakinda - Organizing Committee Member, Agro-Conference, 2023

Prof. Jane Ambuko - Organizing Committee Member, Agro-Conference, 2023

Dr. Lucy Njue Kingori - Organizing Committee Member, Agro-Conference, 2023

Dr. Judith Mbau - Organizing Committee Member, Agro-Conference, 2023

Dr Juliana Jepkemboi Cheboi - Organizing Committee Member, Agro-Conference, 2023

Dr. Benson O Inyangala - Organizing Committee Member, Agro-Conference, 2023

Dr. Bett Rawlynce - Organizing Committee Member, Agro-Conference, 2023

Dr. Cecilia Nyawira Ritho - Organizing Committee Member, Agro-Conference, 2023

Hada Achieng' Oketch - ICT Committee Member, Agro-Conference, 2023

AGRO 2023 CONFERENCE PROGRAM

DAY ONE (25TH OCTOBER 2023)

8.00 – 9.00 AM	REGISTRATION	<ul style="list-style-type: none"> - Faculty of Agriculture Postgraduates and University of Nairobi Student Association (NUASA), Lead Member, Grace Werikhe and Emmanuel Amwoka, Postgraduate students, FAG and Eric Junior, Chairman, NUASA
9.00– 10.00 AM	<p style="text-align: center;">OFFICIAL OPENING</p> <p>Master of Ceremony Assistant Registrar, Martin Mativo</p>	<ul style="list-style-type: none"> - Welcome Remarks from the Host – Dean Faculty of Agriculture, Prof. Moses Nyangito - Remarks from the Chair, Organizing Committee – Dr Oscar Koech - Goodwill messages from sponsors - Opening Remarks from the Chairman, Faculty of Agriculture ALUMNI Chapter, Dr. Wilson Songa - Official Opening by DVC-RIE, UoN – Prof. Margaret Hutchinson - Host/DVC to welcome Chief Guest, Dr. Eliud Kireger, Director General, Kenya Agricultural and Livestock Research Organization <p style="text-align: center;">Official Opening of the Conference by the Chief Guest</p>
10.00 – 11.00 AM (60 Minutes)	<p style="text-align: center;">CONGRESS KEYNOTE (30 Minutes)</p> <p>Keynote Topic: Food and nutrition security: Innovations and technologies for sustainable agroecosystems and resilient livelihoods</p>	<p>Keynote Speaker 1: Prof. Agnes Mwang'ombe, Prof. Emeritus, Dept. of Plant Science and Crop Protection, UON</p> <p>Keynote Speaker 2: Prof. Nicholas Ozor, Executive Director, African Technology Policy Studies Network (ATPS).</p> <p>Followed by a moderated plenary discussion Session Moderator: Prof. Douglas Miano</p>
11.00 – 11.15 AM	HEALTH BREAK	
11.15 – 1.00 pm (90 Minutes)	<p>Keynote Topic: Sustainable production systems for better food & nutrition security and livelihoods (20 Minutes)</p> <p>Session Moderator: Prof. Oliver Wasonga Rapporteur: Grace Werikhe</p>	<p>Keynote Speaker: Dr. Lusike Wasilwa (KALRO)</p> <p>PANELISTS Covering different sectors/agri-food systems issues (Crops, Livestock, Agro-processing, Nutrition, Environment)</p> <ul style="list-style-type: none"> - Prof. Okeyo Mwai, ILRI – Livestock - Dr. Lange Charles, Deputy Dir. NEMA – Environment - Dr. Roy Mugiira, CEO National Biosafety Authority – Emerging technologies. - Dr. Ignatius Kahiu - Sustainable livestock production systems and the value chain potential
1.00 - 2.00pm	LUNCH BREAK	
2.00 - 3.30PM	<p>SIDE EVENT: SNV Kenya – Agri-food Systems, 844 building, Department of Agricultural Economics, FAG</p> <p>Moderator: David Ojwang, Sector Leader, SNV</p> <p>Panelist 1 - Leah Mwaura (Project manager, V4P&P) Panelist 2 - Stephene Gichuki (Project Manager, LISTEN Project) Panelist 3 - Prof. Rewe Thomas (Principal Investigator, REALMS project)</p>	

3.30 – 5.00 PM	<p style="text-align: center;">ORAL PRESENTATIONS SESSION I</p> <p>ORAL PRESENTATION SESSION: WORKSTREAM 1 - 8.4.4 BUILDING</p> <p>Session Chair: Dr. Stephen Mureithi Rapporteur: Rachel Wachira</p> <ul style="list-style-type: none"> ● Alice G. Nyoro 1 - Short-term effects of vermicompost-inorganic NPK fertilizer combination on soil properties ● Alice G. Nyoro 2 - Effect of vermicompost-inorganic NPK fertilizer combination on growth and yield of strawberry ● Wilfred Kioko - Are century-old rice agronomic packages applicable to modern varieties? ● Lincy Cherono 1 - Effect of no-tillage and residue retention on growth and yield of selected green gram varieties ● Angela N. Kathuku-Gitonga - Practical soil health options for smallholder maize farmers in Kenya ● Chelangat Tonui - Effects of Phosphorus Fertilizer on Growth and Yield of Selected Sweet Potato Varieties in Kenya ● Oliver Opondo 1 - Effect of fertilizer nitrogen rate and topping height on tobacco crop growth and yield ● Oliver Opondo 2 - Effect of fertilizer nitrogen rate and topping height on tobacco leaf maturation and quality ● Ojung'a Saline - Evaluation of Morphological Traits and Biomass Yield of Castor (<i>Ricinus communis</i>) Accessions in Kenya ● Paul Kuria- Cassava maintenance DNA methyltransferases modulates antiviral defense against geminiviruses ● Boniface Orwa 1- Green gram yield as influenced by tillage method, residue retention and intercropping with sorghum in Kenya ● Boniface Orwa 2- Effect of tillage method, residue retention and cropping system on soil moisture storage and water use efficiency of green gram ● Mwangi J- Evaluation of fish farmers' perceptions of climate change in kajiado and machakos counties, kenya ● Elizabeth Maina/Menu- Effect of different combinations of N, P, and K nutrients on water and nutrient use efficiency of cotton
3.30 –5.00 PM	<p>ORAL PRESENTATION SESSION: WORKSTREAM 2 – ROOM 206 FACULTY OF AGIRUCLTURE BUILDING</p> <p>Session Chair: Prof. Josiah Kinama Rapporteur: Grace Werikhe</p> <ul style="list-style-type: none"> ● Bernard M. Yumbya 1 - Effect of intercropping intimacy on growth and yield of green gram and sorghum ● Bernard M. Yumbya 2 - Evaluation of sorghum-green gram intercropping configuration on microclimate manipulation and resource use efficiency ● Lawrence O. Ouma - Effect of chitin-fortified black soldier fly frass fertilizer on agronomic performance of onion (<i>Allium cepa</i> L.) ● Tabitha N. Wanyonyi - Effects of Tillage Methods on Soil Physical Properties in a Maize Monocrop in Kabete, Kenya ● Denis M. Mwenda - Physico-Chemical Characteristics and Processing Qualities of Kenyan Cactus Fruits ● Adhiambo Lilian 1 - Prevalence of common microbiological pathogen contamination in processed milk and milk products in Nairobi County ● Grace Werikhe - Knowledge and Perceptions of the Governance of Technological Risks Associated with Genetically Modified Organisms in Addressing Food Security

	<ul style="list-style-type: none"> ● Florence Bwiza Rutikanga - Does Uptake of Climate-Smart Agricultural Technologies Boost Coffee Farmers' Dietary Diversity? An Endogenous Switching Poisson Regression Applied to Data from Democratic Republic of Congo ● Elisha Bwamu- Development of a Ready-To-drink Sorghum beverage through malting and fermentation ● David Kimani- Innovations for Processing and Preservation of Sorghum: Development of a Ready-To-Eat Snack Bar Supplemented with Sesame and Baobab Fruit ● Caroline Kawira -Household nutritional resilience against climate variability in the Karamoja border region of Kenya and Uganda ● Morris Wamai- Constraints and coping mechanisms in smallholder dairy farms - Morris Wama Kenya and Uganda
5.00 – 5.30 PM	TEA BREAK
DAY TWO (26TH OCTOBER 2023)	
8.30 – 9.00 AM	<p>Opening remarks from DVC Research and Enterprise Office, UoN.</p> <ul style="list-style-type: none"> ● Prof Mary Kinoti – Director, IPMO
9.00 – 11.00 AM	<p>Plenary Discussion Topic Making Agriculture Work for Smallholder Farmers in the face of Climate Change and Changing Market/Consumer Demands</p> <ul style="list-style-type: none"> ● Keynote Speaker: Dr. Robert Chiuri, Founder President, Global Diaspora One Voice Consortium Global Chair, Food Security Consortium - Plenary keynote address <p>PANELISTS</p> <ul style="list-style-type: none"> ● Eng. Alphonse Mbaru, FSC Consortium USA – Water security and dryland options for Kenya. ● Prof. Lukas Njenga - Agribusiness, marketing and trade ● Dr. Harun Warui, Programme Coordinator Agroecology and Food Right, Heinrich Böll Stiftung ● Mr. Shane Prigge, WFP Kenya ● Dr. Sam Mburu, Save the Children International - Agricultural policies for food security
11.00 – 11.15	TEA BREAK
11.15 - 1.00PM	<p>POSTER SESSION AND EXHIBITION RUN – 844 BUILDING Session Coordinator: Dr. Juliana Cheboi Rapporteur: Angela Wanjiku Mwangi</p> <ul style="list-style-type: none"> ● Angela Wanjiku Mwangi - Development of a Functional Food from Cultured Bovine Milk Supplemented with Baobab Fruit Pulp ● Waweru, S. N - Dietary Diversity and Nutritional Status of Pregnant Women Attending Antenatal Care at Pumwani Maternity Hospital ● Jepkoech A - Household Food and Nutrition Security in Peri-Urban Areas: A Case of Mathare Informal Settlement, Nairobi ● Merab Awino Annette - Microbial safety of fruits and vegetable salads in fine dining hotels in Nairobi County ● Adhiambo Lilian 2 - Implementation of Good Manufacturing Practices in Milk Processing Companies in Nairobi County and Microbial Contamination of Milk and Milk Products ● Sadiya Mohamed - Food Safety Knowledge and Practices Among Butchery Retailers in the Chicken Value Chain in Nairobi ● Wambua Muindi - Agricultural sustainability and its cross-cutting issues: What has Literature got to do with it?

	<ul style="list-style-type: none"> ● Brian Ngugi Muchema - Appraising Formal and Informal Insurance Methods by Pastoralists During Resource Scarcity; Samburu Central sub-County ● Oliver Vivian Wasonga 3 - Good and Bad in Equal Measure: Role of Mobile Phones and Motorbikes in Changing Pastoral Landscape of Kenya ● Walter Magero Wafula 2 - Changing land-use and land cover in pastoral grazing areas of Nairobi City, Kenya ● Margaret N. Nyaga 1 - Restoration of Rangelands for Resilient Livelihoods through Livestock Cafés in the Drylands of East Africa ● Chepkemoi, J - Assessing potential of Perennial Forages' on Soil Carbon Sequestration Across Agroecological Zones with Varying Management Practices in Meru County of Eastern Kenya ● Lincy Cherono- Response of selected green gram varieties to varying soil moisture regimes ● Beatrice Tenge-Management of aflatoxins in maize during storage using natural control products ● Stephen Karanja - Effect of Water Conservation Technologies and Cropping Systems on the Growth and Yield of Selected Pearl Millet and Green-Grams Varieties
1.00-2.00PM	LUNCH BREAK
2.00 – 4.15 PM	PRESENTATIONS SESSION 3 (ORAL PRESENTATIONS)
	<p>ORAL PRESENTATION SESSION: WORKSTREAM 3 -844 BUILDING Session Chair: Dr. Dora Kilalo Rapporteur: Nancy Munyoki</p> <ul style="list-style-type: none"> ● Nancy Munyoki - Efficacy of Selected Plant Extracts Against Black Bean Aphid And Bean Flower Thrips in French Bean ● Salome W. Kiarie - Characterization of Pathogenic Fungi Infecting <i>Citrullus lanatus</i> in Different Agroecological Regions of Embu County, Kenya ● Happiness Msenya - In vitro efficacy of selected bio fungicides against <i>Alternaria solani</i> infecting tomatoes ● Pachi, R. E - Establishment of the critical period of weed competition on sugarcane crop for strategic management ● Kevin Lumwachi Shitiavai - Management of Tomato Bacterial Wilt by Host Resistance and Biocontrol Agent ● Elizabeth Nzambuli - Effect of Time of Planting on Severity of Maize Lethal Necrosis Disease in Maize ● Onesmus Kitonyo - Application of silicon fertilizer mediated fruit fly infestation and anthracnose infection of mango ● Georgina. K Mulwa-Earliness and crop morphological traits modulate field pest infestation in green gram ● Roselyne Juma- Evaluation of elite rice lines for resistance to Kenya blast fungus (<i>Magnapothe Orzae</i>) Isolates ● Roselyne Juma- Retrospective analysis for parental line selection for rice breeding in Kenya ● Sundy Akello Otieno-Prevalence and susceptibility of preferred banana cultivars to <i>Fusarium oxysporum</i> f.sp. <i>cubense</i> in Kenya. ● Esther Kimani- Effect of crop stage at time of infection on seed transmission of maize chlorotic mottle viru ● Henry Wanyama-Social and Organizational Factors Affecting Tacit Knowledge Transfer among Kenya Agricultural and Livestock Research Organization Researchers ● Muruku Salesio-Lender Behavioural Characteristics Affecting Agribusiness Loans Default Rate in Agricultural Finance Corporation, Mount Kenya Region ● Pauline Aoko- Reducing maize pre-production losses caused by fall armyworm through effective knowledge management in Makueni, Kenya

<p>2.00 – 4.15 PM</p>	<p>ORAL PRESENTATION SESSION: WORKSTREAM 4 - ROOM 206 FACULTY OF AGIRUCLTURE BUILDING</p> <p>Session Chair: Prof. David Jakinda</p> <p>Rapporteur: Bryan P. Ogillo</p> <ul style="list-style-type: none"> ● Jane Ambuko - Challenges and Opportunities in Kenya’s Horticulture Sector: A call to action for researchers ● Jane Ambuko - Food Loss and Waste Reduction towards Sustainable Food Systems: Advocacy and Call to Action ● Gitau Ann Wanjiku - Sanitation and Post-Harvest Management Practices in Grain Traders’ Stores and the Impact on Grain Quality ● Wafula Carlyne Khalayi - Drivers of Farmer Research Networks in Sorghum Seed Systems in Homabay and Tharaka Nithi Counties, Kenya ● Kisambo K. Bosco 1 - Soil type and watering regime effects on rangeland grass ecotypes in a simulated semi-arid environment ● Kisambo Bosco 2- Plant functional traits of ecologically adapted grasses ecotypes for restoration of degraded rangeland environments in Kenya ● James Mwangi Nderitu - Climate-Smart Coffee Agroecology With Legume Cover Crops For Resilient Agrosystems ● Kyebogola Stewart - Synthesis of Slow-Release Fertilizers Using Plasma and Nanotechnology ● Bryan P. Ogillo 1 - Bushrye (<i>Enteropogon macrostachyus</i>) response to Nitrogen and Phosphorous, harvesting and legume intercropping in semiarid Kenya ● Abel Kiprof- Analysis of species composition, cover and density for rehabilitation planning in Wenje, Tana River County ● Mustafe Ibrahim- An analysis of adoption and the intensity of adoption of Rain Water harvesting technologies in Odwayne District, Somaliland ● Zelipha Kabubii-Evaluation of seasonal variation on phytochemicals and antioxidant activity on Rosmarinus officinalis grown in different agro-ecological zones of Kiambu, Kenya. ● Armara Macimilliam-Analysis of Rainfall Spatiotemporal Variability and its Impact on Livelihood in Marsabit, Kenya. ● Josephat Mungoche -Evaluation of soil mineral nitrogen under different organic and inorganic fertilization in Central Kenya.
	<p>ORAL PRESENTATION SESSION: WORKSTREAM 5</p> <p>Session Chair: Prof. Charles Gachene</p> <p>Rapporteur: Omwoyo M. Anne</p> <ul style="list-style-type: none"> ● Omwoyo M. Anne - Monitoring Landuse Change, Soil Organic Carbon and Carbon Emissions in Drylands of Kibwezi, Makueni, Kenya ● Oliver Vivian Wasonga 1 - Indigenous Early Warning System among Pastoralists and Agro-pastoralists in Karamoja ● Oliver Vivian Wasonga 2 - Spatial Differentiation of Fodder Production Practices in the Drylands of Southern Kenya ● Jonathan Stephen Mbwambo - Adoption of Climate-Smart Crops and livestock production in Africa: Are the pillars for CSA accounted for? ● Walter Magero Wafula 1 - When Grass is Greener on the Other Side,” Case of Urbanite Pastoralists in Nairobi City ● GL Lelenguyah - Seasonal distribution of livestock in Samburu County, northern Kenya: a response to variable pasture and water in semi-arid rangelands ● Jane Mutune - Science-based and co-produced transformative Rangeland Management Practices –TRAMAP Kenya

	<ul style="list-style-type: none"> ● Silvia Waithira-Harnessing Research in Agriculture and Environment for Resilient and Sustainable Food Systems and Livelihoods ● Hailelassie Ghebremariam- An evaluation of land suitability for landscape restoration in Tigray, Northern Ethiopia ● Yahya Sabdow-Seasonal distribution of livestock in Samburu County, northern Kenya: a response to variable pasture and water in semi-arid rangelands ● Haron Akala- Participatory characterization of pastoral grazing units in northern Kenya rangelands ● Mustafa Haile-Lupin and Lima beans Diminish Potatoes' N and P uptake, Uptake efficiency and use efficiency ● Joyce Wambui- Financial Returns of Growing Taro (<i>Colocasia esculenta</i>) under Varying Watering Regimes and Planting Densities in Embu, Kenya ● Elikanah Kipkoech- Evaluation of selected chickpea (<i>cicer arietinum</i>) accessions for nutrient uptake and tolerance to acidity under hydroponic and pot experiments
4.15- 4.30PM	TEA BREAK
4.30 – 5.00PM	Closing Ceremony <ul style="list-style-type: none"> ● Awards Ceremony for Best Poster and Oral Presentations (Students), Dr. Oscar Koech and Prof. Catherine Kunyanga ● Closing Remarks <ul style="list-style-type: none"> ○ Dean/Associate Dean, Prof. Moses Nyangito ○ Chairman KATIC, Prof. John Kimenju ● Vote of Thanks, Dr. Sophie Ngala ● Official Closing