THE 2nd EAC SCIENCE, TECHNOLOGY & INNOVATION
CONFERENCE

PROGRAMME

Theme: The Role of Science, Technology and Innovation in EAC Regional Integration and Socio-Economic Development in the phase of Covid-19 Pandemic

The 2nd EAC Regional STI Conference is being organised by EASTECO & IUCEA with support and in collaboration with stakeholders of STI in the region and globally, including GIZ, Ministries responsible for STI, National Councils/Commissions of Science and Technology. The conference aims to provide a platform for the players in Science, Technology and Innovation in the East African Community and beyond to share their experiences and results within the knowledge and technology generation, translation and transfer chain.

DAY ONE: Wednesday, October 27th 2021

09:00 – 10:45 EAT
Opening Session

Burundi National Anthem
EAC Anthem
Entertainment – Traditional Performance
C. P. Jimmy Hatungimana, Mayor of Bujumbura
Fortunate Muyambi, Executive Secretary, EASTECO
Prof. Gaspard Banyankimbona, Executive Secretary, IUCEA
Hon. Christophe Bazivamo, Deputy Secretary General, Productive Social Sectors, East African Community
Hon. Ken Obura, Chief Administrative Secretary, Ministry of EAC Affairs and Regional Cooperation, Republic of Kenya
Prof. Francois Havyarimana, Minister for National Education and Scientific Research Republic of Burundi
Hon. Rebecca Kadaga, First Deputy Prime Minister & Minister of East African Community Affairs, Republic of Uganda
Hon. Amb. Ezechiel Nibigira, Minister for East African Community Affairs, Youth, Sports and Culture, Republic of Burundi

Official Opening by Guest of Honour:
His Excellency Evariste Ndayishimiye, President of the Republic of Burundi

Moderator: Gertrude Ngabirano
The EAC Vision 2050 recognizes STI as one of the key drivers of the region’s economic growth and sustainable development. The relationship between science, technology and innovation (STI) and economic performance has dominated domestic and international policy discourse for decades. Adequate evidence that growth and competitiveness of economies are to a large extent dependent on the production and application of STI exist. Understanding the political economy context of the region is important in explaining how political institutions, the political environment, and the nature of economic systems influence the discourse on STI within the individual countries and the sub-region as a whole. An effective regional STI governance framework consisting of enabling policies and regulatory mechanisms; adequate and effectively networked institutions; satisfactory relevant human capabilities; relevant and functional infrastructural facilities; appropriate and dynamically prioritised STI agenda, coupled with favourable political support are essential in directing the region towards a competitive, equitable, sustainable, united and resilient community. A robust STI governance framework is therefore paramount to ensures functional and operational harmony, synergy, efficiency and effectiveness in delivering cross sectoral regional programs and projects within the regional system of STI to generate adequate returns on investment for the benefit of the citizens of EAC.

Keynote Speaker: Governance of Science, Technology and Innovation for EAC Regional Transformation and Integration:

Prof. Saidi Kibeya, University of Burundi

Presenter 1: The Role of Science in Regional Transformation and Integration: Dr. Amos Nungu, Director General, Commission for Science and Technology (COSTECH), Tanzania

Presenter 2: The Role of Technology and Innovation in Regional Transformation and Integration: Prof. Walter O. Oyawa, Director General, National Commission for Science Technology and Innovation, Kenya


Presentation 4: Applications of Innovative Internet of Things enabled services to address development challenges in EAC Region: Dr. Damien Hanyurwimfura, ACEIoT University of Rwanda

Discussion

Moderator: Dr. Maxwell Otim / Rapporteur: Prof. Annabella Habinka Ejiri

13:00 - 14:00 EAT
Lunch Break

14:00-15:30 EAT
Plenary Session 2
Capacity Development in Science, Technology and Innovation (STI) for enhanced emergency response in EAC Region

Crisis and emergency situations that require evidence-based interventions has brought to light the central role that science technology and innovation plays in informing policy and pragmatic decisions required for the greatest hope of a long-term solution. However, development of empirical evidence is an expensive enterprise that requires systematic scientific process, supported by requisite capacities and capabilities. The emergency responses to epidemic outbreaks such as Ebola, Marburg and COVID-19 in East Africa exposed the soft underbelly of the region in terms of inadequate preparedness to coordinate regional response system; human, technological and innovative capacities; and financial resources support system necessary for mounting rapid response initiatives. Capacity building is therefore required in STI to adequately mount systematic rapid response to safeguard the region.

Keynote Speaker: The role of universities in building resilience through digital readiness to support business continuity:

Prof. Gaspard Banyankimbona, Executive Secretary, IUCEA

Presenter 1: Digital Skills for an Innovative East African Industry: Simon Hochstein, Project Director, GIZ Tanzania

Presenter 2: The role of Research and Education Networks in the EAC’s digital transformation:

Dr. Matthews Mtumbuka, CEO, UbuntuNet Alliance

Presenter 3: Application of Digital Health Information Systems in EAC Region:

Prof. Peter Waiganjo Wagacha, University of Nairobi

Presenter 4: Digital platform as a method for COVID - 19 Surveillance: Case of Burundi:

Prof. Joseph Nyandwi, Director General for National Public Health Institute (INSP)

Presenter 5: Advances in science and technology and their potential impact on international security: the role of the Biological Weapons Convention. Hermann Alex Lampalzer, Political Affairs Officer, UN Office for Disarmament Affairs

Discussion

Moderator: Prof. Juma Shabani / Rapporteur: Prof. Willy-Marcel Ndayitwayek

15:30-17:00 EAT
Exhibition and Poster session
## Contribution of Science, Technology and Innovation to Industrialization

Evidence from developed nations attributes the significant contribution of Science, Technology and Innovation (STI) to industrialization. The EAC industrialization agenda aims to foster and catalyze the creation of regional industrial research and innovation systems, which facilitate private sector innovation, enhance capability in industrial science and technology and improve coordination in research development and innovation. The focus is to shift from factor accumulation growth that employs more labour and capital to total factor productivity that focuses on the efficiency of deployed resources. This requires significant scientific excellence, innovation and entrepreneurship for maximum value addition and technology adoption to drive diversification, import substitution and export expansion to realize sustainable industrialization.

### Keynote Speaker:
The contribution of Science, Technology and Innovation for inclusive and sustainable industrial development: **Badru Ntege**, NFT Consult

**Presenter 1:** **Dr. Charles Kwesiga** - Uganda Industrial Research Institute - Uganda  
**Presenter 2:** **Dr. Christian Sekomo Birame** - National Industrial Research Development Agency - Rwanda  
**Presenter 3:** **Dr. Erastus Gatebe** - Kenya Industrial Research Development Agency - Kenya  
**Presenter 4:** **Prof. Mkumbukwa Mtambo** - Tanzania Industrial Research Development Organization - URT  
**Presenter 5:** **Pierre Sinarinzi** - National Centre of Food Technology (CNTA) - Burundi  
**Presenter 6:** **Leo Okwahsi Lole** - Ministry of Trade and Industry - South Sudan

### Discussion

**Moderator:** **Stephen Niyozima**, Ag. Director Social Sector, EAC  
**Rapporteur:** **Dr. James Jowi**, Principal Officer for Education, EAC

### 10:30 - 11:00 EAT  
**Break**
Parallel session 1A: 
Agriculture, Food security and Rural Development

Keynote Address: 
Prof. Hulda Swai, CREATES, Nelson Mandela-African Institutions of Science and Technology

Speaker 1: Characterization of passionfruit breeding lines. Kahinga, J. N.

Speaker 2: Accomplishments of Tea Research in Uganda in the Year 2019. Kawooya Ronald

Speaker 3: Effects of fertilizer regime in combination with biofertilizers optimization on potato growth, yield and farm returns. Kilonzi, Jack

Speaker 4: Screening for resistance to emerging strains of Potato Virus Y (PVY) in Kenyan potato cultivars - John Onditi, René van der Vlugt

Speaker 5: Evaluation of plantain varieties on yield parameters in Murang’a County, Kenya. Njuguna, Joseph. K.

Moderator: Prof. Charles Gachuiuii
Rapporteur: Prof. Muhammed Sheik

Parallel session 1B: 
Health and Wellbeing

Keynote Address: 
Dr. Casim Umba Tolo, PHARMBIOTRAC, Mbarara University of Science and Technology. Innovation and the STI ecosystem development in Natural Medicines for Health and Wellbeing in East Africa, the case of PHARMBIOTRA

Speaker 1: Modeling spatial distribution of plant species reported as anti-malaria and mosquito repellents in Burundi. Celestin

Speaker 2: The Role of Community-Based Non-Communicable Disease Services in the Quality of Life of People with HIV in Wakiso District, Uganda: A Cluster Randomized Controlled Trial. Christopher

Speaker 3: Phytochemical Studies and Antioxidant Activity of Methanolic Extract of Barteria nigritiana Stem Bark Hook . f (Passifloracea). Diovu

Speaker 4: Effectiveness of kenyaemr in patients’ viral load suppression: a case study of Wanjohi Health Centre – Nyandarua County. Isaac

Speaker 5: Coenzyme-q10 has the capacity to attenuate inflammatory responses and oxidative stress associated with human African Trypanosomiasis in a mouse model. Lynn

Moderator: Prof. Jacques Nkengurutse
Rapporteur: Dr. Joshua Kibet

Parallel session 1C: 
Infrastructure, Energy and Industrial Development

Keynote Address: 
Prof. Evaristo Liwa, Vice Chancellor, Ardhi University. The role of multi-discipline research involving the academia, public and private sector in responding to infrastructural development needs, the case of Tanzania and EAC.

Prof. Ambrose Kiprop, Center of Excellence of PTRE, Moi University, Energy and industrial development strategies for harnessing and agenda setting for science, technology and innovation research ecosystem in the EAC.

Speaker 1: Hydration and compressive strength of Portland cement blended with kamafugites and carbonatites: Effect of Physical Properties. A. Buregyeya and S. Nwaubani

Speaker 2: Performance of maxpan slab under horizontal load representing seismic action in Uganda Faisal Kiberu, Micheal Kyakula, Yusufu Jande and Juma Rajabu Seleman

Speaker 3: Benchmarking of Electricity Sector efficiency in East Africa. René Nsabimana

Speaker 4: Performance Evaluation of a Cassava Solar Dryer in Busia County Richard Njue & Noah Wawire

Moderator: Dr. Alphonse Nkurunziza
Rapporteur: Philbert Luhunga

13:00 - 14:00 EAT 
Lunch Break, Exhibition and Poster session
Parallel session 2A:
Agriculture, Food security and Rural Development

Speaker 1: Characterization of Carotenoid components in Commercial and Locally Adapted Maize Genotypes in Tanzania. Selly Msungu

Speaker 2: Enrichment of flour of indigenous bitter variety of cassava “Lenga Tome” for feeding infants and young children in Kajo-Keji County-South Sudan. Bojo Openzi K

Speaker 3: Functional characteristics and properties of winged termite (isoptera termitidae), lake-fly (diptera) and their suitability for processing food items Ayieko, I. A


Speaker 5: Conservation of indigenous trees species in silvicultural and agroforestry programs: An overview from Burundi national seed bank data. Anatole Bukuru

Moderator: Prof. Tatien Masharabu
Rapporteur: Prof. Willy-Marcel Ndayitwayek

Parallel session 2B:
Agriculture, Food security and Rural Development

Speaker 1: Management of agromyzid leafminer on passionfruit. Kahinga, J. N.

Speaker 2: Integrating management of shoot fly pest and weed in sorghum production for higher yield -Daniel Mutisya, John Wambua, Evelyn Cheramgoi, George Ashiono & Raymond Mokua

Speaker 3: Prevalence, distribution and relative importance of the six major viruses in Kenyan potato cultivars - John Onditi, René van der Vlugt

Speaker 4: Beekeeping: a livelihood diversification strategy in pastoral dry areas of Kenya - Daniel Toroitich, Richard Kimitei

Speaker 5: Selective Breeding of Nile Tilapia, Oreochromis niloticus: A strategy for Increased Genetic Diversity and Sustainable Development of Aquaculture in Kenya Jacob Abwao

Moderator: Dr. Ir. Joseph Bigirimana
Rapporteur: Prof. Muhammed Sheik

Parallel session 2C:
Health and Wellbeing

Speaker 1: Improving diagnosis of childhood TB: preliminary results on fujilam and spk from “rapaed-TB” – Mfinanga

Speaker 2: Formulation and evaluation of an antidiabetic polyherbal juice using flavonoids and terpenes from Myrothamnus flabellifolius and Lippia javanica - Dzomba

Speaker 3: Ethnobotanical study of pesticidal plants against human harmful insects in Central Burundi - Rose

Speaker 4: Zingiber officinale bioactive compounds act against SARCoV-2 Targets: an insilico study - Ugwu

Speaker 5: Phytochemical Investigation of Selected Pentas Species for Leishmanicidal Principles - Vincent

Speaker 6: A Dolutegravir Associated Hyperglycaemia Prediction Tool for People Living with HIV in Uganda - Wisdom

Moderator: Prof. Joel Mtebe
Rapporteur: Dr. Joshua Kibet

15:30 - 16:00 EAT
Break
Parallel session 3A:
Natural Resources and Environment

Keynote Address: Prof. Sanctus Niragira, Vice Chancellor, University of Burundi - Strategies for research agenda and approaches for assessment and addressing natural resources and the environmental potential and challenges in harnessing socio-economic transformation of the integrated EAC.

Speaker 1: Climate crisis: the case of Nyando catchment. Mulianga, Betty A

Speaker 2: Ecosystem services from mountain forests: Local communities’ views in Kibira National Park, Burundi Gaëlle Ndayizeye, Gerard Imani, Jacques Nkengurutse, Rosette Irampagarikiye, Noël Ndihokubwayo, Ferdinand Niyongabo and Aida Cuni-Sanchez


Speaker 4: Kibira national park forest, pool of carbon and floristic diversity. Rosette Irampagarikiye

Speaker 5: Land Use and Land Cover Change Influence on Soil Organic Carbon Content for A Pastoral Area: Use Of GIS. Shadrack Murithi and John Bosco Nkurunungi

Moderator: Dr. Thomas F. Lado
Rapporteur: Dr. John Bosco Nkurunungi

Parallel session 3B:
Information and Communication Technology

Key Note Address:
Prof. Venansius Baryamureeba, Chairperson, Board of Directors, Uganda Technology & Management University (UTAMU) - An Overview of ICT Research in enabling STI advancement in the wide range of sectors of economy and livelihoods in the integrated EAC. Case of the impact of COVID-19 pandemic.

Speaker 1: Reaching Women and Newborns with Multidisciplinary Specialized Care Via Whatsapp Interaction. A One-Year Experience from Tanzania. Ahmed Mohamed Makuani


Speaker 3: Analysis of E-Exams performance under COVID-19 Pandemic at Kabale University, Uganda. Businge Phelix Mbabazi

Speaker 4: Factors Affecting E-Government Adoption in The Democratic Republic of Congo. Elias Samajeri Ladislas

Speaker 5: Low Cost and Energy Efficient Automated Health Monitoring with Controlling and Messaging Systems of Patient’s Prominence Based on IoT and GPS Module. Ntambara Boniface


Moderator: Prof. Annabella Habinka Ejiri
Rapporteur: Prof. Joel Mtebe

Parallel session 3C:
Science, Technology, Engineering & Mathematics

Key Note Address: Prof. Victoria Ngumi: Vice Chancellor, Jomo Kenyatta University of Agriculture & Technology - A perspective on demography and gender ratio in STEM research, influenced by pre-university enrolment and research mentorship systems in the EAC.

Speaker 1: Nuclear polaritons: Mössbauer source and resonant absorber by the coherent paths model. Claver Havyarimana, Thadée Barancira, René Simbizi, Jos Odeurs

Speaker 2: Optimisation of the eccentricity of the pyriform diagram for balancing electrical power systems loading Godwin Norense Osarumwense Asemota, Nelson M. Ijumba

Speaker 3: Optimisation of adsorption parameters for effective removal of lead (ii) in aqueous solution. Jonas Bayuoo, Mwemezi Rwiza, Kenneth Pelig-Ba, Moses Abdullai Abukari

Speaker 4: Preparation and characterization of chemical activated carbon from Polyalthia longifolia seed Numfor. Linda Bih

Speaker 5: Evaluation of Nanofiber Webs for Antimicrobial Food Packaging Tarus Bethwel Kipchirchir

Speaker 6: A Dolutegravir Associated Hyperglycaemia Prediction Tool for People Living with HIV in Uganda. Wisdom

Speaker 7: Formulation and evaluation of a herbal shampoo using flavonoid glycosides from Dicerocaryum senecioi. R. Zhou, P. Dzomba, L. Gwatidzo

Moderator: Prof. Gerrryshom Munala
Rapporteur: Dr. Margaret Lukuyu

End of Day Two
Business innovation ecosystem refers to a loosely interconnected network of companies and other entities that coevolve capabilities around a shared set of technologies, knowledge, or skills, and work cooperatively and competitively to develop new products and services. Business innovation ecosystem in East Africa is coordinated through East African Business Council (EABC), the regional apex body of Private Sector associations and corporates in East Africa with a single purpose of driving the East African Community (EAC) integration process through trade and investment. The EABC works with the public sector, EAC institutions, the academia, and the business community to unlock economic potential through increased physical access to markets, enhanced trade environment and improved business competitiveness through continuous business innovation.

Keynote Speaker: Building resilient innovation and Business incubation ecosystems in EAC Region:

John Bosco Kalisa, CEO, East African Business Council (EABC)

Presenter 1: Hon. Olivier Suguru, Chairman, Association of Burundi Industrialists, Burundi

Presenter 2: Francis Kisirinya, Acting Executive Director Private Sector Foundation, Uganda

Presenter 3: Stephen Ruzibiza, Private Sector Foundation, Rwanda

Presenter 4: Carole Kariuki, Kenya Private Sector Alliance (KEPSA)

Presenter 5: Francis Nanai, Tanzania Private Sector Foundation (TPSF)

Presenter 6: Thomas Serafino Ohure, Private Sector Foundation, South Sudan

Discussion

Moderator: Badru Ntege / Rapporteur: Venant Nyandwi

STI is at the centre of Socio-economic transformation in Partner States of the East African Community. The long-term development Strategies and the medium-term plans of these nations identify STI as an enabling pillar supporting the development of productive sectors of their economies. Major structural, policy, regulatory and operational reforms in the national economies have been instituted to accommodate STI in economic production. Besides key macro-economic adjustments, the centrepiece of these structural adjustment programs included the scaling down of public service, the scaling back of public expenditure, and the re-organisation of research and development enterprises, especially in the agricultural, health and environment sectors. Individual states have sustained the policy tempo with varying degrees of success, and are part of the public policy discourse on STI at both the national and regional

Keynote Speaker: STI in Transformation of National Productive Sector Economies:

Dr. Julius Ecuru, Programme Manager, BioInnovate Africa Programme / ICIPE

Presenter 1: Dr. Martin Ongol, Ag. Executive Secretary, UNCST, Uganda

Presenter 2: Dr. Bugwesa Katale, Director, Commission for Science and Technology (COSTECH), Tanzania

Presenter 3: Dr. Walter Oyawa, Director General, NACOSTI, Kenya

Presenter 4: Dr. Eugene Mutimura, Executive Secretary, NCST, Rwanda

Presenter 5: Dr. Tatien Masharabu, Permanent Executive Secretary– CNSTI, Burundi

Presenter 6: Dr Cecilia Apaya, Director of Science, Technology and Innovation, MoHEST, South Sudan

Discussion

Moderator: Badru Ntege / Rapporteur: Prof. Annabella Habinka Ejiri
DAY THREE: Friday October 29th 2021

14:00-16:00 EAT
Ministerial Session (Panel Discussion)
Ministerial dialogue on the Role of Science, Technology and Innovation in EAC Regional Integration and Socio-Economic Development in the phase of Covid-19 Pandemic

Ministerial Resolutions Implementation from the 1st Science, Technology and Innovation Conference
Fortunate Muyambi, Executive Secretary, EASTECO
Prof. Gaspard Banyankimbona, Executive Secretary, IUCEA

Presentation on recommendations from the Plenary Session
Rapporteur General: Dr. Paul O. Mireji

Hon Dr. Peter Mathuki
Secretary General of East African Community

Guest of Honour:
Prof. François Havyarimana, Minister for National Education and Scientific Research, Republic of Burundi

Dialogue Members / Ministers

Keynote Speaker: The Role of Science, Technology and Innovation in EAC Regional Integration and Socio-Economic Development in the phase of Covid-19 Pandemic
Dr. Monica Musenero, Hon. Minister of Science, Technology and Innovation, Republic of Uganda

Feedback / Responses from Ministers
- Minister responsible for Science, Technology and Innovation, Republic of Kenya
- Minister responsible for Science, Technology and Innovation, Republic of Uganda
- Minister responsible for Science, Technology and Innovation, Republic of South Sudan
- Minister responsible for Science, Technology and Innovation, Republic of United Republic of Tanzania
- Minister responsible for Science, Technology and Innovation, Republic of Rwanda

Output: Key Action Points on Science, Technology and Innovation adopted by the Ministers

16:00-16:30 EAT
Closing Remarks

Executive Secretary, EASTECO
Executive Secretary, IUCEA
Secretary General, EAC

Guest of Honour:
Prof. François Havyarimana, Minister for National Education and Scientific Research, Republic of Burundi

16:30 EAT
Close of Conference
16:30 - 18:00 EAT
Exhibition, Poster Session & Networking
Organisers

EAST AFRICAN SCIENCE & TECHNOLOGY COMMISSION
EASTECO

Partners

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DEUTSCHE ZUSAMMENARBEIT

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