

# National Commission for Science, Technology and Innovation (NACOSTI)



# **NACOSTI Plaza**

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#### EDITORIAL "Science and Technology for Prosperity"



The quarter covering the period October to December 2022 was a busy quarter for NACOSTI as we rolled out programs and activities for which the Commission had committed in its Performance Contract and workplans for this period. These programs and activities form the focus of this edition of the STIR Bulletin and its is our pleasure to share with our readers what NACOSTI was able to undertake

during the period.

Amongst the highlights of the quarter was the Regional Workshop on universalization and effective implementation of Biological Weapons Convention (BWC) in Eastern Africa which was held in Mombasa from 18th to 19th October 2022. The workshop was organized by the United Nations Office of Disarmament Affairs' (UNODA) Implementation Support Unit for the Biological Weapons Convention, in collaboration with the Government of Kenya through NACOSTI. The workshop drew participants from several countries in Eastern Africa Region and was officially opened by the Cabinet Secretary for Education. We have covered in this bulletin a summary of the discussions during the workshop.

NACOSTI also participated in a number of scientific events locally and internationally during which topical issues on research, science, technology and innovation were deliberated on. Highlights of these events are covered in this bulletin.

As part of staff development and rewarding, NACOSTI's Board and Management organized a Staff Luncheon on 14th October 2022, to appreciate the entire staff for their performance in the FY 2021/22. The event also served as a get together with recently retired staff who were appreciated for their service to NACOSTI. We share with you in this bulletin a pictorial presentation of the colourful event which was also graced by the Chairman and the CEO of Kenya National Qualification Agency who are our neighbours in NACOSTI Building.

I wish you a happy reading as you interact with this issue of the NACOSTI STIR Bulletin and wish all our stakeholders a Happy and Prosperous 2023.

Mr. Gideon Kirui Bulletin Committee Chairman

#### REMARKS FROM THE DIRECTOR GENERAL/CEO "Science and Technology for Prosperity"



I take this opportunity to welcome you to read the 4<sup>th</sup> Edition of the STIR Bulletin of 2022, a publication of the National Commission for Science, Technology and Innovation (NACOSTI). STIR Bulletin captures the latest news and featured articles from the Science, Technology and Innovation (STI) sector, and is therefore the voice of stakeholders in the STI

Ecosystem as communicated by the STI Regulator, NACOSTI. It serves as part of the avenues through which we endeavor to reach a wider network of our stakeholders. In the recent past, we have interacted with stakeholder in the STI ecosystem through hosting and participating in conference, seminars and meetings both physically and virtually. This has enabled NACOSTI to share ideas with local and international experts and stakeholders cutting across various science fields and as a result enriched our capacity to execute our mandate.

NACOSTI is established under the Science, Technology and Innovation Act, 2013 (Rev. 2014) with a unique mandate of regulating and assuring quality in the research, science, technology and innovation sector, and advising the Government in matters related thereto. In so doing, the Commission shall Regulate, Coordinate, Advise and Promote Science, Technology, Innovation and Research activities in the country. Among others, the functions of NACOSTI include; developing priorities in scientific, technological and innovation activities in Kenya, Registering and Accrediting Research Institutions, Licensing of Research and assuring relevance and quality of research programmes in research institutions, coordinating and evaluating activities relating to scientific research and technology development, annually reviewing the progress in scientific systems, and promoting the adoption and application of scientific and technological knowledge in attaining national development.

Further, the Science, Technology and Innovation (STI), Legal Notice No. 108 (Research Licensing) Regulations, 2014 obligates all persons intending to undertake scientific research in Kenya to obtain a license in accordance with the Act. In this regard, we have made this process easy and convenient for you all by making it available online.

I trust that you will enjoy interacting with the information presented herein. Feel free to contact us through our telephone numbers, email and all our social media platforms. Prof. Walter O. Oyawa, PhD

#### Prof. Walter O. Oyawa, PhD National Commission for Science, Technology and Innovation (NACOSTI)

# NACOSTI MANDATE, VISION, MISSION, CORE VALUES, & FUNCTIONS

#### Mandate

The objective of the Commission shall be to regulate and assure quality in the science, technology and innovation sector and advise the Government in matters related thereto.

#### Vision

Accelerate the Transformation of Kenya as a knowledge-based economy.

#### **Mission**

To facilitate quality in the research, science, technology and innovation sector through regulation, promotion and provision of advisory services.

#### **Core Values**

The Commission upholds Integrity, Customer Focus, Professionalism, Teamwork and Leadership in the discharge of its mandate.

#### **Functions**

- a) Develop, in consultation with stakeholders, the priorities in scientific, technological and innovation activities in Kenya in relation to the economic and social policies of the Government, and the country's international commitments.
- b) Lead inter-agency efforts to implement sound policies and budgets, working in collaboration with the county governments, and organizations involved in science and technology and innovation within Kenya and outside Kenya.
- c) Advise the national and county governments on the science, technology and innovation policy, including general planning and assessment of the necessary financial resources.
- d) Liaise with the National Innovation Agency and the National Research Fund to ensure funding and implementation of prioritized research programmes.

- e) Ensure co-ordination and co-operation between the various agencies involved in science, technology and innovation.
- f) Accredit research institutes and approve all Scientific research in Kenya.
- g) Assure relevance and quality of science, technology and innovation programmers in research institutes.
- h) Advise on science education and innovation at both basic and advanced levels.
- i) In consultation with the National Research Fund Trustees, sponsor national scientific and academic conferences it considers appropriate.
- j) Advise the Government on policies and any issue relating to scientific research systems.
- k) Promote increased awareness, knowledge and information of research system.
- l) Co-ordinate, monitor and evaluate, as appropriate, activities relating to scientific research and technology development.
- m) Promote and encourage private sector involvement in scientific research and innovation and development.
- n) Annually, review the progress in scientific research systems and submit a report of its findings and recommendations to the Cabinet Secretary.
- o) Promote the adoption and application of scientific and technological knowledge and information necessary in
- p) Develop and enforce codes, guidelines, and regulations in accordance with the policy determined under this Act for the governance, management and maintenance of standards and quality in research systems.
- q) Undertake, or cause to be undertaken, regular inspections, monitoring and evaluation of research institutions to ensure compliance with set standards and guidelines.

# REGIONAL WORKSHOP ON THE UNIVERSALIZATION AND EFFECTIVE IMPLEMENTATION OF THE BWC IN EASTERN AFRICA



Figure 1: Group Photo

A Regional Workshop on the universalization and effective implementation of the Biological Weapons for East Africa was held in Mombasa, Kenya, on 18-19 October 2022. The event was organized by UNODA's Implementation Support Unit for the Biological Weapons Convention, in collaboration with the Government of Kenya through the National Commission for Science, Technology and Innovation (NACOSTI). Officials from the United Nations Regional Centre for Peace and Disarmament in Africa, the Regional Coordination Office for United Nations Security Council resolution 1540 (2004), the European Union Chemical, Biological, Radiological and Nuclear Risk Mitigation Centres of Excellence, Africa Centres for Disease Control and Prevention, the Intergovernmental Authority on Development in Eastern Africa and Parliamentarians for Global Action also attended the event.

The workshop was part of a four-year project on "Supporting Universalization and Effective Implementation of the Biological Weapons Convention in Africa" funded through generous financial support by the Global Partnership against the Spread of Weapons and Materials of Mass Destruction.

Participants welcomed the support offered in the framework of the project, as the COVID-19 pandemic has shown the vulnerability of modern societies to large-scale disease outbreaks, and the need to proactively address biothreats and enhance national frameworks on biosafety, biosecurity and nonproliferation of biological weapons.

They discussed actions to promote the universalization and effective implementation of the Biological Weapons Convention in East Africa, which were considered key aspects for comprehensively addressing biological risks and threats on the continent, as well as at the national and regional levels. In particular, participants and experts considered the tools that are available to contribute to that aim, including adopting implementing legislation, participating in BWC ConfidenceBuilding Measures, and designating national contact points. East African States not yet party to the Biological Weapons Convention welcomed the opportunity to learn about the benefits of joining the Convention.

'We look forward to implementing the action plans discussed with States during the workshop and hope that these will lead to enhanced participation and implementation of the BWC in East Africa', said Alex Lampalzer, Deputy Chief of the BWC ISU. 'Kenya's strong commitment and interest in the subject is also highly appreciated, as shown in the number of online participants, more than 430, that followed the event', he added.





Figure 2: Occurrences of the Regional Workshop on the universalization and effective implementation of the Biological Weapons for East Africa held in Mombasa, Kenya, on 18-19 October 2022



National Commission for Science, Technology and Innovation (NACOSTI)



National Commission for Science, Technology and Innovation (NACOSTI)

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# WORKING TOWARDS SET TARGET LIMITS INTELLECTUAL CAPABILITY, MAGOHA TELLS SCIENTISTS



Figure 3: Outgoing Education Cabinet Secretary Prof. George Magoha giving his speech during the Regional Workshop on the Universalization and Effective Implementation of the BWC in Eastern Africa

Ministry of Education Cabinet Secretary George Magoha on Tuesday challenged African scientists not to always work towards the set target because it limits their intellectual capability.

He spoke on Tuesday during the official opening of the regional workshop on universalisation and effective implementation of the biological weapons convention in Eastern Africa.

"I want to challenge you because it is like you are in the same compartment that I have realised over the last 50 years of my service to humanity that there are several things that African scientists must stand against," he said. He told the research scientists and scholars across the African continent to forget about the notion that an excellent African brain goes to the west terming it as a fallacy that should be discarded.

"The scientists that are still here in Africa have even better brains, perhaps the problem that we have, as practicing scholars, is that we have refused to utilise our brains completely," he said.

Magoha who described himself as a thorough scholar in microorganisms, from the basics to the advances, the various standards of laboratories including the bio containment laboratories that are all over the world, said that from the school books, Covid-19 was not a natural virus.

"Are you going to be bold enough to discuss it, as we discuss it, are you one of the people who are going to say it went away because of vaccination or by the grace of God?"

He said the agitation that took place made the virus friendly in the body.

The CS encouraged the African scholars saying whoever set the agenda, dictates how it is done and that Africa is by no means poor.

"I was chosen based on my abilities and not political and therefore I want to challenge African governments together that Africa is by no means poor and let it be on record, it is just our priorities which are not set right," he said.

He said African nations need to set priorities right in order to set their own agenda and ensure they are not left in the dark for them to go as far as they can go and beyond.



Figure 4: Outgoing Education CS George Magoha addresses delegates during the official opening of the regional workshop on universal and effective implementation of the biological weapons convention in Eastern Africa at White Sands hotel in Mombasa on October 18,

"Are you prepared to be liberated, to not have to go to Canada, United Kingdom or Sweden in order for your brain to work the way it works, the mindset must change and that is why there is an urgent need for a thorough biological weapon convention," he said. The CS said the executive arm of government is committed to work with experts in the region urging the scholars to always ensure they say the truth.

"If you are asked to say the truth at any time, the truth should remain the same, you do not have to change the answers," he said.

The National Commission for Science, Technology and Innovation and also the National Focal Point of the Biological Weapons Convention director general Walter Oyawa said Covid-19 pandemic demonstrated the potential devastating effects of newly emerging pathogens in the society," he said.

He said the workshop is part of the broader global objective to intensify multilateral efforts to enhance both the national and global preparedness to prevent, detect and respond to biological threats.

"It is noted that while rapid developments in the life sciences offer new ways to fight diseases, they could also pose a potential risk for abuse to develop biological and toxin weapons hence the need for extra precautions and preparedness," he said.

Chief Justice Martha Koome in her speech that was read by her representative said the BWC is loadable because it aims at prohibiting biological and toxic weapons thus making it important to have the conversation because the biological weapons are deadly and catastrophic. She said not only do the biological weapons cause loss of life and devastating economic loss but they are also the culprits of the public fear and mistrust among nations and that it is therefore vital to establish a solid understanding of the BWC.

In Kenya, she said the out-going Interior Cabinet Secretary Fred Matiang'i raised concern in 2020 that some institution of higher learning had become major recruitment centres of terrorist stating that the country was at risk of chemical and biological weapon attack due to lack of laws and curriculum on biosafety in the institutions.

"It is therefore evident that the law is an important tool for effecting the requisite measures, a comprehensive legal framework in this regard will for instance set out the requite parameters in training, safety procedures, building requirements and protect the students and the community at large from accidental exposure or an intentional release of the infectious agents and toxins," she said.

The CJ said that solid legal frameworks play a critical role because not only do they act as a measure in preventing biological terrorism but they also ensure their existence strengthens the capacity to counter and respond effectively to bio terrorism.

"Every member of the state is obligated to spur the success and to foster development with an aim of creating a stand that promote the implementation of BWC because even if we are the members but do not have laws for effective enforcement mechanism to action the same, this will not yield the desired impact," she said.

# NACOSTI DIRECTOR CALLS FOR PROBE INTO FOOD PRODUCTS



Figure 5: Prof. Walter Oyawa, Director General, NACOSTI during the Regional Workshop on the Universalization and Effective Implementation of the BWC in Eastern Africa

National Commission for Science, Technology and Innovation Director General Walter Oyawa has called for a probe into the safety of food products in the country.

Speaking during the food safety workshop on the control of biological weapons, the NACOSTI boss said there are fears that most food products consumed locally could occasion health challenges.

"The question that should be at the back of everyone's mind is, how safe is the sukuma wiki (kale) we consume? There is also concern that some of the flour brands could be containing aflatoxins, which are harmful to human health," he said. Outgoing Education Cabinet secretary George Magoha was present during the workshop.

National Assembly Speaker Moses Wetangula was represented by Ugenya MP, Hon. David Ochieng. In his speech, the speaker expressed his disappointment at the slow pace of implementing the Biological Weapons Convention (BWC).

He cited the lack of mandatory transparency measures and a dedicated monitoring organ for the delay.

While stating that all conventions and treaties will be domesticated, the speaker cited Article 2(6) of the Constitution which states:

"Any treaty or convention ratified by Kenya shall form part of the law of Kenya under this Constitution," he said.

He added that: "It is alleged there are no specific measures set up by the BWC to verify compliance with the obligation not to develop, produce, stockpile or otherwise acquire or retain biological agents or toxins for hostile purposes."

He said that a review of the convention reveals that parties are not obliged to declare biological agents or toxins used in nonprohibited activities. "Parties are not obliged to declare all laboratories engaged in research and development of substances that could be used as agents of warfare," he said. In line with the BWC, Prof Magoha said Kenya had joined more than 180 countries in adopting practices aimed at mitigating threats posed by biological weapons.

Besides enhancing security and vetting scientists, Kenya demonstrated commitment to the BWC by hosting representatives from 14 countries in Mombasa for the two-day workshop to come up with mechanisms to counter threats posed by biological weapons.

Kenya has adopted a multi-agency approach, by involving ministries and departments including the Directorate of Criminal Investigation, Government Chemist, National Defence University, Egerton University, Office of the President and National Biosafety Authority.

Other agencies brought on board include Kenya Forestry Research Institute, Kenya Agricultural, and Livestock Research Organization, and Kenya Plant Health Inspectorate Service.

The workshop was organized by the United Nations Office for Disarmament Affairs (UNODA) in collaboration with Kenya's National Commission for Science, Technology and Innovation (NACOSTI).

Source: https://www.the-star.co.ke/news/2022-10-24-nacostidirector-calls-for-probe-into-food-products/ KENYA PARTICIPATES IN THE NINTH REVIEW CONFERENCE OF THE BIOLOGICAL AND TOXINS WEAPONS CONVENTION, 28TH NOVEMBER TO 16TH DECEMBER 2022, GENEVA, SWITZERLAND



Figure 6: Kenya's Delegation during a courtesy call to H.E. Amb. Dr. Cloepa Mailu Permanent Representative of Kenya in Geneva Switzerland at the Mission and at the main conference hall on the 28th of November and 12th December 2022 respectively

Kenya has been a member of Biological and Toxins Weapons Convention (BTWC) since 7th January 1976. The Biological Weapons Convention (BWC) is a legally binding treaty that outlaws' biological arms which has been discussed and negotiated in the United Nations' disarmament forum. The BWC is a multilateral treaty of indefinite duration that is open to any country. So far 184 States-Parties and four signatories (Egypt, Haiti, Somalia, and Syria) are party to it. Namibia being the latest entrant received welcome messages from various member States. However, there are eight States (Chad, Comoros, Djibouti, Eritrea, Israel, Kiribati, Micronesia and South Sudan) that have neither signed nor ratified the BWC and majority of them are in Africa. The `convention bans the development, stockpiling, acquisition, retention, and/or production of biological agents and toxins of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes or development of weapons, equipment, and delivery systems designed to use.

The BWC has no international agency or governing council, neither does it have a permanent secretariat. Instead, State Parties convene for a review conference to improve upon the treaty's implementation every five years. The review conference's agenda is established by Article XII of the convention which highlights:

- 1. The operation of the convention, with a view to assuring that its purposes and provisions are being realized
- 2. The relevant developments in science and technology, and
- 3. The progress on chemical disarmament.

The decision to have the Ninth Review Conference of the States Parties to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction was made during the 8th Review conference of the States Parties to BWC. In its final declaration it stated that "The Conference decided that the Ninth Review Conference shall be held in Geneva not later than 2021 and should review the operation of the Convention, considering, inter alia:

- 1. New scientific and technological developments relevant to the Convention.
- 2. The progress made by States Parties on the implementation of the Convention and
- 3. Progress of the implementation of decisions and recommendations agreed upon at the Eighth Review Conference, considering, as appropriate, decisions and recommendations reached at previous review conferences.

Kenya's first participation in the review conference was in December 2011 during the Seventh Review Conference where the final declaration document concluded that under all circumstances the use of bacteriological (biological) and toxin weapons is effectively prohibited by the Convention and affirmed the determination of States Parties to condemn any use of biological agents or toxins other than for peaceful purposes, by anyone at any time. In 2016, Kenya participated for the second time in the Eight Review Conference where delegates agreed to a future one-week meeting of States-Parties at the end of the year and a five-year extension of the BWC Implementation Support Unit (ISU). Following the outbreak of the COVID-19 pandemic, the 2020 meetings were postponed several times. This affected the 2018-2020 inter-sessional program because they were not concluded as planned earlier. To move forward, in May 2021, States Parties agreed by written silence procedure that several technical recommendations for formal consideration. Hence the next formal BWC meeting which the States Parties agreed to be on 20 December 2021 approved the considerations. States Parties further agreed on more technical adjustments without setting a precedent, that (a) the Ninth Review Conference be held in Geneva in-person format in accordance with the regular practice under the BWC from 8 to 26 August 2022." Since the extraordinary circumstances prevailed, the preparatory committee on 11th April 2022 further moved the Ninth Review Conference to 28 November to 16 December 2022. Kenya was privileged during these unpreceded times to be the chair of the meetings of States Parties. H. E Amb.Cleopa Mailu left a memorable mark during his tenure as a chair by bringing together all the States Parties through consensus under difficult circumstances given the state of the pandemic then to an agreement of having the meetings proceed in-person as a regular practice. The Preparatory Committee convened and held two meetings in Geneva on 20 December 2021 and then resumed its work from 4 to 11 April 2022 during which time it held 12 meetings. Kenya was among 115 States Parties who participated in the Preparatory Committee with a delegation of 17 officers from different Ministries, Departments and State Agencies.

The Ninth BWC Review Conference was the third that Kenya was participating in with the highest number of delegations in record.

The delegation was comprised of a multi-sectoral and multiinstitutional team who included: H.E Amb. Cleopa Mailu (Head of Permanent Mission) – Head of Delegation, Prof. Walter Oyawa Director General, NACOSTI

Kenya delivered her country statement on the main agenda items – Agenda item 10- Review of the operation of the Convention as provided for it its article XII (a) General debate and (b) Comprehensive consideration of all provisions of the Convention (Articles 1-XV) besides attending side events and bilateral meetings as highlighted below:

# Agenda Item 10. Review of the operation of the Convention as provided for it its article XII

#### (a) General debate

Kenya acknowledged that the review conference comes at a time when humanity is faced with a multitude of monumental challenges emanating from the Pandemic, Climate disruption, Nature and biodiversity loss, Pollution, and waste, increasing mistrust among nations, as well the potential misuse of science and technology. Kenya reiterated that indeed, these challenges, if not promptly mitigated, will continue to threaten the well-being and survival of millions of people around the world. Hence the Ninth Review Conference provided a window of opportunity to take stock of the far we have come since the last Review Conference. It is time to consider the lessons learnt, opportunities utilized, and challenges encountered; and to agree on the necessary measures that will further cement the Convention's place in securing global security and safety, while at the same time ensuring that science and technology delivers solutions in terms of products and services to current and future global challenges. In cooperation and assistance Kenya appreciated the partnerships with ISU and supporting countries for impactful achievements. Through the cooperation, Kenya organized a very successful regional workshop on Universalization and Effective Implementation of the Biological Weapons Convention in Africa in Mombasa in October 2022. Some of the achievements were as follows:

- 1. The workshop was very useful to gain a better understanding on the BWC as well as gain experience on how to improve implementation of the BWC at National level
- 2. It brought together BWC states and Non-states Parties to share experiences and information related to BWC implementation at National level.
- 3. The workshop enabled further identification of opportunities for synergies and collaborations with relevant regional and international organizations.
- 4. Participants expressed their appreciation for the excellent arrangements made by the Government of Kenya regarding the organization of the workshop.
- 5. Participants encouraged the BWC-ISU to consider more than two days for this type of event to provide more time and flexibility for discussions and networking.

Kenya in her statement committed to continue spearheading the universalisation agenda in the region and strengthening national policy and legal frameworks for effective implementation of BWC as well as improvement of Measures related to Article IV of the Convention and submission of **Building** Measures. Kenva quality **Confidence** further reiterated that she values the useful partnerships in the assistance and cooperation she had developed with several States Parties in biological threat reduction, enhancing physical strength of related facilities, surveillance, prevention and detection of pathogens, amongst others. In this regard Kenya looks forward to positive discussions on strengthening Assistance and Cooperation in relations to Articles **IV**, **V** and **X** on "Implementation, Coordination and Universalization of BWC. Kenya strongly supported the promotion of useful technologies in relation to article X and notified state Parties that she has submitted a working paper that aimed at strengthening Youth participation in the Biological Weapons Convention.

Kenya's request as an output of the Ninth Review Conference was to see that the following questions or issues are considered or be achieved:

- 1. How to strengthen international cooperation and assistance amongst the States Parties.
- 2. Whether the current institutional structure of the convention is fit for purpose and how it can be augmented.

- 3. What structures and processes can be put in place to strengthen and support the mainstreaming of science and technology in the BWC, including the rapid detection and evaluation of the impacts of emerging technologies s
- 4. The need for a credible and mutually agreeable compliance and verification mechanism.
- 5. How an optimal future inter-sessional programme would look like

# (b) Comprehensive consideration of all provisions of the Convention (Articles 1-XV)

Kenya's contribution under this item was a statement on comprehensive consideration of Article IV regarding National Implementation of the convention, Article VII- Assistance, Response and Preparedness, Article X- International Cooperation and Article XII- Cross-cutting issues. More focus was given to Article X and the cross-cutting issues where Science and Technology dominates. The specific contribution included: The supports for the establishment of a Science and Technology review mechanism that would work with a strengthened ISU to assist States Parties among others to:

> 1. Kenya contended that beyond merely compiling and reviewing advances in science and technology, actual assessments on how these developments impact on the BWC are needed to inform policy and development

of practical measures to manage the associated risks and opportunities

- 2. Kenya appreciated the scientific and technological developments, inter alia, in the fields of microbiology, genetic engineering, gene editing, artificial intelligence and biotechnology, and the possibility of their use for purposes inconsistent with the objectives and the provisions of the Convention. In this regard, Kenya welcomes proposals that advocate for a code of conduct for scientists
- 3. Further Kenya welcomed the establishment of science and technology review mechanism that would strengthen ISU to assist States Parties to among others
- (i) Support their peaceful activities, for example in medicine, agriculture, and environmental protection
- (ii) Facilitate the fullest possible exchange of information and technology particularly between developed and developing countries, to ensure the equitable enjoyment of the benefits of these technologies
- (iii) Facilitate training and capacity for developing countries particularly in detecting and responding to infectious diseases, improving agriculture and livestock technology for food security, and promoting environmental conservation and climate change mitigation.
- (iv) Leveraging real data to inform policy, decision making and deliberations for bio security and biosafety, public health and livelihoods
- (v) Support BWC universalisation and bridging gaps by providing critical scientific backing

(vi) Promote sharing of best practices and approaches to science and technology development as it relates to the BWC.

Kenya expected that the S and T mechanism established will be inclusive in composition, holistic in approach, leverage diversity of expertise from across sectors and be gender and youth responsive

#### Side events at the Preparatory Committee Meeting



#### **Bilateral meetings with the delegates**

The Kenyan delegation was able to organize and participate in side-events meetings. Bilateral side meetings were as a follow-up of the previous discussions during Meetings of the States Parties in November 2021 or meetings held during the Ninth review preparatory meeting in April 2022. Kenya was able to meet with delegations from Parliamentarian for Global Action (PGA) United States of America (USA), he United Nations Interregional Crime and Justice Research Institute (UNICRI), INTERPOL, United Kingdom (UK) and World Organization for Animal Health (WOAH). The Bilateral meetings resulted in joint pronouncements covering the need for:

- a) Developing of National Strategy on Biosecurity and relevant legal framework
- b) Institutional Strengthening to enhance National implementation of BWC.
- c) Capacity building in Surveillance and Detection, border security, security agencies Biosafety and Biosecurity managers
- d) Advocacy and Awareness-raising targeting the political class and policy makers
- e) Initiating Education, Research, and Professional practice on Biosecurity through partnerships and collaborations with the other States parties:
- f) Mobilizing youth to strengthen the Biological Weapons Convention in Kenya
- g) Enhancing Collaborations and Partnerships

Kenva's delegation was informed of different meetings taking place in Nairobi early 2023. This includes a meeting being organized by the Parliamentarian for Global Action, which plans to bring together the political class from the region. Kenya's parliamentarians will be invited to participate actively. The second meeting is by the World Health Organization (WHO). Contacts were shared with the National Focal Point to link up with the organizers for more details on how relevant institutions can participate. The Global Affairs Canada in collaboration with the World Organization of Animal Health (WOAH) are launching a grand challenge on innovative solutions for sustainable laboratories. WOAH expressed interest to partner with Kenva on their activities which include Agro-terrorism, animal trafficking, wildlife movement of drugs, Epidemic intelligence and holding workshops. WOAH have a regional office in Kenya at Upper Hill Taj Towers. WOAH will hold a workshop in January 2022, on Animal health as a security risk. The WOAH workshop will cover training in Epidemic intelligence, Laboratory management, as well as simulation exercises of disasters. Lastly USA is piloting a project on database with Kenva and is being implemented by UNIDIR. The project is planned to be implemented by many countries.

# KENYA PARTICIPATES IN THE AFRICAN HIGH-LEVEL POLICY MEETING, CAIRO, EGYPT



Figure 7: The IAEA Deputy Director General of Technical Cooperation Hua Liu(center) with some of the Ministers and ambassadors that attended the 2nd HLPM in Cairo Egypt

Kenya, through NACOSTI, was among the countries that attended the 2nd High-Level Policy Meeting (HLPM) of the African Regional Cooperative Agreement for Research, Development, and Training Related to Nuclear Science and Technology (AFRA) Agreement in Cairo, Egypt, from the 5th to the 8th of December 2022. Participants included five state ministers, fourteen ambassadors, and twenty-two heads of delegation. Mr. Stephen Mukhebi Situma represented the Director General NACOSTI who is the National Focal point for AFRA. Hua Liu, Deputy Director General of Technical Cooperation at the IAEA, and Prof Shaukat, Director Division of Technical Cooperation Department Africa Region, also attended the meeting. The purpose of meeting was to review the state parties' achievements since the first HLPM in 2007, when the AFRA management structures and plan of action were established.



Figure 8: The Chairman of the Egyptian Atomic Energy Authority Prof Amr ElHag Ali (7th from left) The Director Division of Technical Cooperation Department Prof Shaukat Abdulrazak (center) and the AFRA Chair Mr. Fidele Ndahayo with the AFRA National Coordinators

The delegates considered the documents prepared by the three management committees of AFRA Program Management Committee (PMC), Partnership Building and Resource Management Committee (PBMRC) and the High-Level Steering Committee (HLSC) for Human Resource Development that had been prepared in Nairobi Kenya. The members resolved to restructure the management committees into two namely Programme Management and Partnership Committee (PMPC) and High-Level Steering Committee (HLSC) for Human Resource Development. The functions of PBMRC were merged with the ones of PMC. The members also introduced an AFRA "Troika" made up of the outgoing AFRA Chair, the current AFRA Chair and the future AFRA Chair to facilitate smooth transition and preserve the institutional memory of AFRA.

The delegates also expressed their support for the intended changes and the new action plan that had been developed by the AFRA secretariat. The Ministers, ambassadors and heads of delegation present endorsed the declaration that had been developed the AFRA management Committees and pledged their states support in the use of nuclear science and Technology for social Economic development of the region. On his part the IAEA Deputy Director General of Technical Cooperation Hua Liu declared the unwavering support of IAEA to the AFRA member states in their Peaceful use of Nuclear Science and Technology for Social Economic development of the continent.

# UNIVERSITIES CHALLENGED TO MAKE USE OF UNESCO RESEARCH INSTRUMENTS



Figure 9: Group Photo During the 2nd Joint Annual Research Ethics Conference - September 28-30, 2022

Prof. Hubert Gijzen, the Director and Representative of UNESCO Regional Office for Eastern Africa has called on researchers to contribute to the dissemination of UNESCO's normative instruments.

National Commission for Science, Technology and Innovation (NACOSTI)

He spoke on September 28, 2022, during the official opening of the 2nd Joint Annual Research Ethics Conference which is cohosted by Daystar University, the National Commission for Science, Technology, and Innovation (NACOSTI), and Daystar University Institutional Scientific and Ethics Review Committee (DU-ISERC).



Figure 10: Prof. Hubert Gijzen, Director and Representative, UNESCO Regional Office for Eastern Africa, when he addressed opening ceremony of the 2nd Annual Ethics Conference held at Daystar University Nairobi Campus on September 28, 2022

The three-day conference themed: Strengthening Research Ethics in the Global South ends on Friday September 30, 2022, with a site visit to NACOSTI. He said that funding allocation for research remained a major challenge in the Global South, with a majority of countries spending less than 1 percent of their Gross Domestic Product on research against the recommended 3 percent.

Referring to a 2021 rapid assessment conducted by NACOSTI, He decried the low level of awareness about UNESCO's normative bio-ethics instruments, saying that only 15 percent of ISERCs are making reference to the research instruments.

He also noted with concern that out of the 34 papers lined up for presentation at the conference, only one referred to the UNESCO normative bio-ethics instruments.

He called on Daystar University and other research institutions to contribute to the dissemination of UNESCO's normative instruments. He further underscored the need to strengthen women's participation in science and technology, saying that globally, only 35 percent of women were involved.

He said UNESCO's normative bio-ethics instruments included: medical ethics, ethics on artificial intelligence, universal declaration on ethics on human rights, and international declaration on ethics on human data.

He further underscored the critical role UNESCO plays in mobilizing its five core functions to strengthen research ethics. These, he said, include serving as a laboratory of ideas, setting research standards, capacity building, serving as a clearing house as well as a catalyst for international cooperation.



Figure 11: Daystar University Vice-chancellor Prof Laban P Ayiro addressing the delegates during the 2nd Annual Ethics conference held at Daystar University – September 28, 2022

On his part, Daystar University Vice-Chancellor, Prof. Laban P. Ayiro emphasized on the importance of honesty and commitment in scholarship. Referring to the history of ethics in 'The Belmont Report,' Prof. Ayiro called on researchers to apply the common rules of Respect, Beneficence and Justice for compliance, and cautioned them against using human subjects as a means to an end.

Also addressing participants virtually from Addis Ababa during the opening ceremony was NACOSTI Director General / CEO, Prof. Walter O. Oyawa.

Prof. Oyawa expressed concern over misrepresentation and falsehood in research conducted during pandemics, which he said has had significant impact on public trust in science.



Figure 12: Prof. Walter Oyawa,, Director General - NACOSTI

Prof. Oyawa called on stakeholders to be aware of and observe domestic laws and regulations, international legal instruments and norms relating to biological research including those on prohibition of biological weapons.

"Scientists should take responsibility to protect the welfare of both human and non-human research participants and to apply the highest ethical standards in research conduct, with full respect for the subject of research," he said. The three-day conference will be officially closed on Friday, September 30, 2022 by Dr. Evangeline Njoka MBS, the Secretary General/Chief Executive Officer of the Kenya National Commission for UNESCO (KNATCOM). After the official closing ceremony on Friday, delegates will visit NACOSTI headquarters to familiarize themselves with the Kenyan research regulator.

The conference is, with people attending both physically and virtually. The physical conference is hosted at Daystar University, Nairobi Campus.

The blended conference attracted more than 200 participants from six countries namely: Kenya, Nigeria, India, Zimbabwe, Uganda, USA and Canada. Among the conference delegates were 24 universities and 36 Institutional Scientific and Ethics Review Committees (ISERCs).

Thirty-four (34) scholarly papers were presented on a broad range of thematic topics, key among them:

- 1. History of Research Ethics
- 2. Emerging technological trends and issues on research
- 3. Research Misconduct
- 4. The essence and procedures for research ethics clearance
- 5. Importance of Ethics in Research
- 6. Research Ethics and Publications
- 7. Demystifying Research Ethics
- 8. Protection of the Rights of Researchers, Human Subjects, Animals, Environment and Research Objects

- 9. The Role of Institutional Scientific Ethics Committees (ISERCs) in Research
- 10. Intellectual Property Rights
- 11. Cost of Research
- 12. The Challenges of Conducting Ethical Research
- 13. The Science of Communication and Dissemination of Research Findings
- 14. Commercialization of Research Output
- 15. Protection of research data.

# AFRICA PARTICIPATES IN THE IGEM 2022 GRAND JAMBOREE



Figure 13: Dr. Benson Mburu represented the National Commission for Science Technology and Innovation (NACOSTI) during the iGEM 2022 Grand Jamboree that took place from October 25 to October 29, 2022, at the Paris Expo Porte de Versailles, in Paris, France.

The International Genetically Engineered Machine (iGEM) is a global synthetic biology competition that was initially aimed university students but has since expanded to include divisions for high school students, entrepreneurs, and community laboratories, as well as post-graduates and other researchers. Student teams are given a kit (so called 'Distribution Kit') of standard, interchangeable part, they use these parts and new parts of their own design to build biological systems and operate them in living cells. The teams are free to choose a project, which can build on previous projects or be new to iGEM that develops a novel product answer to challenges in health, environmental pollution, agriculture or food production, cosmetics, and other industrial needs. Successful projects are presented at a scientific conference where they present their projects to each other and to a scientific jury of about 120 judges. The judges award medals, special prizes to the teams and select a 'Grand Prize Winner' team as well as 'Runner-Up' teams in each division (High School, Undergraduate and Overgraduate). Corporate Present engage the team for startups and scaling up that have led to emergency of new companies in participating countries. This year Africa had three teams from Uganda, Ghana and Egypt.



Figure 14: Panelist during the iGEM 2022 Grand Jamboree

Dr. Mburu was invited to participate and represent Africa in the responsibility Conference, a selective event in the 2022 Jamboree that focused on the governance of Synthetic Biology in the areas

of ethics, biosafety, biosecurity, inclusivity, and stewardship of this fourth industrial revolution technology. He also participated in the iGEM Jamoree Keynote panel that discussed how Synthetic Biology can be promoted across the globe especially the global South noting how the technological has been critical to COVID19 intervention through testing reagents and vaccine development in record time. Dr Mburu had previously been a member of the UNCBD Ad Hoc Technical Expert Group (AHTEG) on Synthetic Biology and World Economic Forum's Future Council on Synthetic Biology and Currently is a member of the UNCBD Informal Co-Chairs' Advisory Group (IAG) on Digital Sequence Information (DSI) a critical component on synthetic biology development.

# NACOSTI STAFF ACCEPTED FOR TOP LEVEL TRAINING BY THE US STATE DEPARTMENT, IN DAKAR, SENEGAL



The United States Department of State's Office of Weapons of Mass Destruction Terrorism (WMDT) organized a five (5)-day inperson training on Foundational Chemical, Biological, Radiological, and Nuclear (CBRN) Investigations for Law Enforcement in Dakar, Senegal from 11th to 16th December 2022.





Mr. Denis Yegon, ICT – NACOSTI

Mr. Phelix Awuor, ICT – NACOSTI

Participants selected were from Kenya, Nigeria, and Senegal. Mr. Denis Yegon and Mr. Phelix Awuor of NACOSTI, Kenya were both accepted for the training. NACOSTI plays a critical role in ensuring that all research and its related activities and outcomes are beneficial to the country and do not endanger national security, adversely affect Kenyans' lives, or contravene Kenya's international obligations, including CBRN among others. The Director General, NACOSTI is the National Focal point for Biological Weapons Convention (BWC) headquartered in Geneva-Switzerland.

#### 'Niche skill sets'

Advances in the CBRN sciences bring about wellbeing for humanity, but the same advances could be misused, particularly

for the development and proliferation of CBRN weapons. ICT and physical security assets are regarded as a partner in preventing/countering the threat of terrorists acquiring and/or employing CBRN weapon of mass destruction. The Office of Weapons of Mass Destruction Terrorism mission is to counter the threat of terrorists acquiring and/or using a weapon of mass destruction, WMDT works with foreign partners to establish, strengthen, and maintain their capabilities to deter, detect, defeat, and respond to terrorist attempts to acquire or use chemical, biological, radioactive, or nuclear materials.

This training was aimed at equipping participants with the necessary investigative knowledge and skills necessary to prevent criminal and terrorist acquisition of weapons of mass destruction materials related to CBRN.

## KENYA'S RENOWNED YOUTH INNOVATOR TOPS IN PRESIDENTIAL INNOVATION AWARDS IN EAST AFRICA



Figure 15: Presidential Innovation Awards Winner from Kenya, Mr. Joseph Nguthuri (far left) being awarded his dummy cheque by Her Excellency the Vice President of Uganda, Hon. Jessica Alupo (centre), assisted by the Chairman of EASTECO Governing Board/DG NACOSTI--Kenya, Prof. Walter Oyawa (far right). Also present were the Minister of ICT and National Guidance, Uganda, the Minister of Transport, Uganda, the Minister for Minister of Science, Technology and Innovation, and the Permanent Secretary, Ministry of Economic Planning

Kenya has demonstrated its prowess and leadership on impacting innovations geared towards enhancing prosperity and livelihoods in the East Africa Region. Mr. Joseph Nguthuri, a graduate of Egerton University, was selected to be part of the the six Top Young Innovators in the East African Region following competitive selection by a pool of eminent experts established by the EASTECO (East Africa Science, and Technology Commission of the EAC). Mr. Nguthuri received his Presidential Innovation Award from His Excellency President Yoweri Museveni who was represented by Her Excellency the Vice President of Uganda, Hon. Jessisa Alupo, in the presence of EASTECO Executive Secretary, Dr. Sylvance Okoth and EASTECO Governing Board Chairman Prof. Walter Oyawa, as well as other Governing Board members of EASTECO. The Occasion was also graced three eminent Cabinet Ministers of the Uganda Government, namely the Minister of ICT and National Guidance, the Minister of Transport, and the Minister for Minister of Science, Technology and Innovation.



Figure 16: Photo session with all the six Presidential Innovation Award Winners, Her Excellency the Vice President of Uganda, three Cabinet Secretaries of Uganda, EASTECO Top Management, EASTECO Governing Board Chairperson and Members

Mr. Nguthuri's innovation is likely to be a game changing global innovation as it seeks to convert or transform the troublesome water hyacinth into biodegradable alternatives for single-use plastic products. The innovation primarily converts water hyacinth (world's most problematic aquatic weed) into biodegradable alternatives for single use disposable plastic products like wrappers and plastic straws, tumblers and party plates. Plastics developed through Mr. Nguthuri's innovation biodegrade within 3 to 6 months. The Chairperson of EASTECO Governing Board, Prof. Oyawa, has commended EASTECO Management, through its Executive Secretary, Dr. Sylvance Okoth, and expressed EASTECO's determination to identify and work with young innovators in the region by providing necessary guidance and experts on innovation protection through patenting, innovation scale-up and commercialization, innovation legal framework, Innovative entrepreneurship, and innovation royalties. He further reiterated that the innovation fits well with Kenya's regional Leadership on climate change mitigation, and may be easily scaled-up to serve multi-purposes relating to the use of plastics.

Mr. Joseph Nguthuri's award comes at a time when Kenya has also emerged as top with the most innovative companies in Africa (three Kenyan companies out of a total of six in Africa), as presented in the World Economic Forum, in its annual 2022 Technology Pioneers list. The World Economic Forum list includes firms employing technology and innovation to positively impact on business and society.





Figure 17: Occurrences of the EAC Regional Youth Innovation Forum and Awards from 8-10 November 2022.

National Commission for Science, Technology and Innovation (NACOSTI)

# KENYAN RESEARCHERS SELECTED FOR THE 14TH HOPE MEETING WITH NOBEL LAUREATES ORGANIZED BY JSPS



Following invitation by the Japan Society for the Promotion of Science (JSPS), NACOSTI as the sole national regulatory authority on science, technology, and innovation, successfully nominated Dr. Tabitha Amollo from Egerton University, Department of Physics and Nathan Okoth Oduor from University of Embu, Department of Soil Science, Water and Agricultural Resource Management/ Agriculture for the HOPE meeting. The two scholars will be attending the 14th HOPE Meeting with Nobel Laureates scheduled to be held from 27th February to 3rd March, 2023 in Tokyo, Japan.



Figure 18: Prof. Takaaki Kajita

The current Chair of the HOPE organizing Committee is Prof. Takaaki Kajita, Nobel Laureate in Physics in 2015, and currently a Distinguished Professor of the University of Tokyo.



Figure 19: Dr. Tabitha A. Amollo, Egerton University

Dr. Tabitha A. Amollo is a lecturer in the Department of Physics, Faculty of Science, Egerton University, and a postdoctoral research fellow with Future Africa Research Leader Fellowship (FAR-LeaF) program, University of Pretoria, South Africa. She holds a Ph.D. in Physics (solid state physics and materials sciences) from the University of KwaZulu-Natal (2016-2018), South Africa, and an MSc degree in physics (solid state physics) from Egerton University, Kenya. Her fields of specialization include nanotechnology and nanomaterials, photovoltaics, and thermoelectricity. Her research is focused on developing cuttingedge nanomaterials and technologies for energy conversion, as well as solar energy appliances. She has authored several articles in high-impact journals and two book chapters. She has also won The World Academy of Sciences (TWAS) research grant.



Figure 20: Nathan Okoth Oduor, University of Embu

Nathan Okoth Oduor is from University of Embu, Department of Water and Agricultural Resource Management. Attained PhD in Soil Science in 2022, and MSc. in Soil science in 2018 from the University of Embu, Kenya. Hold a Bachelor's degree in Dryland Agriculture and Enterprise Development from Kenyatta University in Kenya.

He currently lectures Agricultural and Environmental courses at

the University of Embu and Kenyatta University on part-time. Has over 7 years of research and outreach experience and has worked with various projects and institutions including Climate-smart Option Allowing for Agricultural Intensification for Smallholder in the Dry zones of Central Highlands of Kenya' supported by VLIR-UOS, International Centre of Insect Physiology and Ecology (ICIPE), Organic Resource Management for Soil Fertility (ORM4Soil) Project as well as consulting for various organization.

# JKUAT MARKS THE TWELFTH TECH EXPO



Figure 21: JKUAT Tech Expo, is an annual student-driven event incepted in 2009 that seeks to encourage and support students' innovative ideas

*Nishati Safi*, a solar-powered street food trolley, took that day as JKUAT staged its twelfth tech expo edition showcasing 21 innovations, November 17-18, 2022. The winning innovation seeks to harness solar energy as the power source to keep the food inside the trolley warm without harming the consumer,

#### vendor or the environment.



Figure 22: Khamisi Muniru (left) explains how his solar powered street vending machine works.

According to Khamisi Muniru, more than 2 million street food vendors use charcoal to cook and warm food putting their health at risk due to the constant exposure to carbon monoxide.

"In order to keep the food warm, these trolleys use charcoal as the main energy source. Cocktails of toxic air pollutants are served up alongside the on-the-go meals, these include carbon dioxide, carbon monoxide and particulate matter which pose food safety risks to the consumers. In addition, the pollutants are detrimental to the environment and the health of the vendor," explains Khamisi, one of the innovators of Nishati Safi.

Coming in second during the two-day expo was 'Sign Speak'. The innovation involves the digitization of sign language in order to facilitate the automatic translation of speech to and from sign language.



Figure 23: Mark Maara explains how his Sign Speak innovation works. Listen on is (from left) Prof. Victoria Wambui Ngumi, Tech Expo Project Manager, Beatrice Karimi and Director General NACOSTI, Prof. Walter Oyawa.

Mark Maara says his innovation comes in two parts. "The first part is an AI (Artificial Intelligence) that can read the hand gestures of someone who is signing and translate it into text. The other part is an open graphics engine that takes text as input and can display a digital character signing the input as sign language." Mark believes that the innovation will be vital in making digital information more easily accessible to the hearing impaired and make it easier for them to live their lives much like ordinary hearing people do.

With digital agricultural innovations proliferating across the country, a group of students delved into Smart Beehive to help bee farmers monitor several hives and inform the farmer when to harvest honey via a text message on their phone.

Bagging third place, the innovation employs science and technology to naturally remove the mites and monitor the health of bees.

During the opening ceremony of the Tech Expo, Director General, National Commission for Science Technology and Innovation (NACOSTI), Prof. Walter Oyawa lauded the students' innovations showcased saying innovation was the way to go if the country was to transform.



He however acknowledged that, for the innovation to move to the

next step of commercialization, concerted efforts were needed to guarantee the growth of the innovations for Kenya to achieve its technological and innovation agenda.

"These innovators cannot do it alone. Let us work together, link them with relevant companies and institutions to grow and commercialize their innovation," said Prof. Oyawa.

While appreciating JKUAT for providing an enabling environment for the students to innovate, Prof. Oyawa advised both the institution and the student innovators to position themselves and tap into the government's vision.

"I would like to urge the innovators to remember that your innovation will not change lives until you take the next step and venture into the real world. Do not be afraid to start, no matter the scale but remember to be conscious of the government's strategic direction and priority areas," advised Prof. Oyawa.

Vice Chancellor, Prof. Victoria Wambui Ngumi called upon the support of the government and private sector to ensure the incubation and commercialization of students' innovations. In the same breadth, she asked the innovators, through their innovations, to proactively support the realization of the new government's development agenda for the benefit of Kenyans.

"It is my hope that the government and private sector will partner with our institution to help create an enabling environment where ideas and innovations that count can benefit from mentorship, incubation and business support to become fully grown commercial entities," said Prof. Ngumi.

JKUAT Tech Expo 12.0 opening ceremony was also addressed by acting Deputy Vice Chancellor, Research, Production and Extension, Prof. Jackson Kwanza, JKUAT Tech Expo Chairman, Michael Waititu and JKUAT Tech Expo Event Organizer, Prisca Orori.

JKUAT Tech Expo, is an annual student-driven event incepted in 2009 that seeks to encourage and support students' innovative ideas across the country in a bid to bolster innovation, collaboration and education.

# KENYA SAFE FROM DISEASE-CAUSING ORGANISMS, SCIENTISTS SAY



Foodstuff and the environment in Kenya are at the moment safe from dangers posed by harmful organisms that cause diseases, the national science and innovations regulator has assured.

The National Commission of Science, Technology and Innovation (NACOSTI) says it has ensured that research institutions in Kenya do not mishandle the pathogens in their laboratories.

Pathogens are disease-causing agents that scientists keep studying to establish disease patterns (epidemiology) with a view of coming up with preventive and curative measures.

Viruses, bacteria, fungi and protozoa are some of the known pathogens, and throughout history, the organisms have accompanied populations and caused various epidemics.

Pathogens have also been used as agents of biological warfare. It is against this background that the Regional Workshop on Universalization and Effective Implementation of the Biological Weapons Convention in Eastern Africa will be held in Mombasa.

Mary Onsarigo, a senior scientist at Nacosti gave the safety assurance ahead of an international workshop to review progress on the implementation of the Biological Weapons Convention (BWC).

The two-day workshop starting next Tuesday in Mombasa is aimed at creating awareness on the dangers of pathogens.

pathogens.

HUDSON GUMBIHI, NAIROBI

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part of the labour force who work tirelessly to make fuel that is not harmful to the environment. [Denish Ochieng, Stand

# Kenya safe from risks of dangerous lab pathogens

Workshop will serve as a mentation. The two-day workshop, platform for raising awareness which begins next Tuesday in Mom asa, aims to raise awareness abou about pathogens the dangers of pathogens. The two-day meeting aims to

The seminar comes as the court try is still recovering from the efraise awareness on dangers of fects of Covid-19, which began in the Chinese city of Wuhan in December 2019 before spreading throughout the world.

According to Onsarigo, the workshop will serve as a platform for raisenya's food and enviror ment are currently safe ing awareness about pathogens and from threats posed by logical weapons of mass destruc pathogenic organisms tion in general. "The BWC is trying to prohibit the

ccording to the nation al science and innovation regulator oduction, acquisition, stockpiling and transfer of pathogens without valid justification. We want to en-The National Commission of Sci ence, Technology, and Innovation courage the use of pathogens for peaceful science like the production (Nacosti) says it has ensured that Kenyan research institutions do not mishandle pathogens in laboratoof vaccines," she said.

The BWC is critical in address Pathogens are disease-causing ing the proliferation of Weapons of agents that scientists are studying in order to establish disease patterns Mass Destruction (WMD). Estab lished in 1972, the convention has epidemiology) and develop preven almost reached universal member ship with 184 state parties and four Viruses, bacteria, fungi and prosignatory states.

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the Implementation Support Unit (ISU) for BWC in collaboration with the Kenyan government through Nacosti, has organised the Mombasa rkshop. Participants will demonstrate

their broad understanding of BWC, implementation of the conventior in their respective countries, legisla tions put in place as well as discuss the roles of National Contact Points (NCPs).

Member states comprise Kenya, Ethiopia, Madagascar, Mauritius Seychelles, Sudan, Tanzania, Ugan da, Comoros, Djibouti, Somalia and South Sudan. They shall develop a work plan for enhancing the imple mentation of BWC.

Onsarigo said Nacosti has put in place surveillance mechanisms to ensure research institutions uphold indards. "We have made sure the laboratories where pathogens are stored are well secured; neither ar the organisms used for the wrong rposes." a senior scientist said adding that Kenya does not produce pathogens in mass.

With the changing terror dyna mism, Nacosti director general Prof Walter Oyawa said terrorists are moving away from the use of mass biological weapons and are instead employing simple methods like pol lution of consumable products. "We want to enlighten Kenyans to be cautious about their environmen

and remain alert since biosafety and biosecurity are emerging challeng es," Oyawa said. Among its various functions, Na-

costi undertakes regular inspection and monitoring and evaluation of research institutions. hunguku@standardmedia.co.ke

The seminar comes at a time the country is still recovering from the effects of COVID-19, which originated in Wuhan city of China in December 2019 before spreading across the world.

According to Onsarigo, the workshop will provide the platform for creating awareness on the lurking dangers of pathogens and biological weapons of mass destruction in general.

"The Biological Weapons Convention (BWC) is trying to prohibit production, acquisition, stockpiling and transfer of pathogens without valid justification. We want to encourage use of pathogens for peaceful science like the production of vaccines," explained Onsarigo.

The BWC is critical in addressing the proliferation of Weapons of Mass Destruction (WMD). Established in 1972, the Convention has almost reached universal membership with 184 States Parties and four Signatory States.

The United Nations Office for Disarmament Affairs (UNODA) through the Implementation Support Unit (ISU) for BWC, in collaboration with the Kenyan government through NACOSTI, has organized the Mombasa workshop.

Participants will demonstrate their broad understanding of BWC, implementation of the Convention back in their respective countries, and legislations put in place as well as discuss roles and responsibilities of National Contact Points (NCPs) and confidence-building measures.

Thereafter, member States comprising Kenya, Ethiopia, Madagascar, Mauritius, Seychelles, Sudan, Tanzania, Uganda, Comoros, Djibouti, Somalia and South Sudan, shall develop a work plan for enhancing the implementation of BWC at the national level.

Onsarigo said NACOSTI has put in place surveillance mechanisms to ensure research institutions in Kenya uphold standards. "We have made sure that the laboratories where pathogens are stored are well secured; neither are the organisms used for the wrong purposes," said the senior scientist adding that Kenya does not produce pathogens in mass.

With changing terror dynamism, NACOSTI director general Prof Walter Oyawa said terrorists are moving away from use of mass biological weapons and are instead employing simple methods like pollution of consumable products.

"And this is why this workshop is important to our country; we want to enlighten Kenyans to be cautious about their environment and remain alert since biosafety and biosecurity are emerging challenges," stated Oyawa.

Among its various functions, NACOSTI undertakes regular inspections, monitoring and evaluation of research institutions to ensure compliance with set standards and guidelines.

"We make sure that all persons intending to undertake scientific

research in Kenya obtain a license in accordance with laid down regulations," said Oyawa.

Source: https://www.standardmedia.co.ke/healthscience/article/2001458164/kenya-safe-from-disease-causingorganisms-scientists-say

# INDIGENOUS KNOWLEDGE DOCUMENTATION AND DIGITIZATION (IKDoDi) PROJECT TO START IN NOVEMBER 2022



Figure 24: Participants During the Workshop

A multi-agency team that includes the National Commission for Science Technology and Innovation and coordinated by the Natural Products Initiative (NPI) programme under the National Museums of Kenya (NMK) is scheduled to start the documentation and digitization of Kenya's indigenous knowledge and traditional cultural expressions in line with the Protection of Traditional Knowledge and Traditional Cultural Expression Act of 2016. The documentation and digitization are being funded by the GOK Sport Fund and is to be carried in all counties and the information deposited at both counties and national repositories as culture is a devolved function. Initial documentation and digitization will be done in thirteen (13) counties and then continues with the other 34 counties as funds are availed. The programme for the activity was discussed and agreed upon during a meeting held on Thursday 3rd November 2022 at the Red Ruby Hotel Nairobi hosted by the NPI-NMK and attended by Dr Benson Mburu.

The Project was proposed and endorsed during a Natural Products Initiative (NPI) Access Benefit Sharing (ABS) high level meeting held between 31st January and 4th February 2022 at the Serena Beach Hotel Mombasa.

The then CS Ministry of Sport Culture and Heritage, Ambassador Amina Muhammad opened the workshop and committed to support the proposed. Indigenous Knowledge Documentation and Digitization. The PS State Department of Higher Education and Research was Invited among others diginitaries. NACOSTI was represented by the DG Professor Oyawa who gave a Keynote address and supported the initiative and highlighted the importance of research and role of role NACOSTI in the STI subsector and the research ecosystem in Kenya. Dr David Ngigi and Dr Benson Mburu a member of the National Task Force on TK and TCE also participated in the NPI ABS High level meeting as part of the technical team. Other institutions that were involved in the Indigenous knowledge documentation and digitization (IKDoDi) project include Kenya Industrial Property Institute (KIPI), National Environment Management Authority (NEMA), Kenya National Bureau of Statistics (KNBS), Universities of Nairobi and Moi, Kenya Industrial Research and Development Institute (KIRDI), ICT Authority, Kenya Heroes Council among others.

Once the documentation and digitization are done the intellectual property rights of the indigenous knowledge and cultural expressions owners will be protected under our legal and international frameworks such as Copyright, Patenting, industrial designs, Prior Arts, community collective marks or under sui generis system recognized by World Intellectual Property Organization (WIPO). This project will place Kenya in the footstep of India that was the first to develop Traditional Knowledge Digital Library (TKDL) that protected India's Indigenous knowledge and made it possible to establish a robust pharmaceutical industry based on the knowledge while sharing the benefits with the indigenous communities that own it. India has also used the evidence in the TKDL to sue international companies that had used their Indigenous knowledge for commercial purposes without sharing benefits with local communities and gotten compensation for the same.

# VISIT TO NACOSTI BY KENYATTA UNIVERSITY FEMALE STUDENTS IN SCIENCE AND TECHNOLOGY (KUFFEST)



Figure 25: Group Photo

Twenty-eight female undergraduate students pursuing science related courses at Kenyatta University and who are members of KUFFEST made a request to visit NACOSTI with an objective of being exposed to research work as well as being equipped with information on science-based careers and interact with scientists who will act as role models. This was in relation to their on-going project on "Enhancing Girls' Participation and Performance in STEM. The mentorship meeting took place on Monday 7th November 2022 at ground floor boardroom at the NACOSTI building.

Kenyatta University Female Students in Science and Technology (KUFESST) is an association that brings together Kenyatta University female students who are keen in pursuing careers in Science, Technology, Engineering and Mathematics (STEM) with an objective to provide an academic nurturing, mentoring, community outreach, social retreats, seminars and workshop to instill confidence and achieve personal development.



Figure 26: Mentorship Session

#### **RESEARCH NEWS FROM THE WORLD**

# ISC APPOINTS NEW FELLOWS TO SUPPORT ITS MISSION TO BRING SCIENCE TO SOCIETY



Cape Town, 5 December 2022 – The International Science Council has today appointed 60 new ISC Fellows, in recognition of their outstanding contributions to promoting science as a global public good. The Fellowship is the highest honour that can be conferred on an individual by the ISC. Joining the 66 Fellows that were appointed in June, it is anticipated that they will support ISC in its vital mission to bring science to society and help address urgent societal problems – such as climate change mitigation and adaptation, water, energy and food security, as well as urgent transformations required in research itself.

The second cohort of Fellows includes eminent social and natural scientists, engineers and thought-leaders who have made impactful contributions in the science-policy sphere. They hail from different countries and regions, disciplines, sectors and career stages; having been nominated by ISC Members, Governing Board and Fellowship Council members, and sister networks like the Global Young Academy and InterAcademy Partnership. The three outgoing ISC patrons – Mary Robinson, Ismail Serageldin and Vint Cerf – have been awarded Honorary Fellowship status, in special recognition of their outstanding support to ISC.

ISC President Peter Gluckman said:

"I am delighted to announce the election of Honorary Fellows and ISC Fellows today during the 2022 World Science Forum. Recognised for their service to science for society, these individuals have and will continue to play an important role in ISC's mission to use science as a global public good. They bring a diversity of experience, insight and perspective and I look forward to working with them over the coming months and years. Our mission has never been more urgent. I would like to add my special and wholehearted thanks to our outgoing Patrons, who have now been endowed Honorary Fellowships for their distinguished contributions to the goals of the ISC".

# 29-YEAR-OLD KENYAN TECH FOUNDER CROWNED CNN HERO OF 2022



Figure 27: Nelly Cheboi and her mother receiving the CNN Hero of the year award

Nelly Cheboi's mother could not hide her joy when her daughter was crowned the 2022 CNN Hero of the Year.

Cheboi, a software engineer, won the award thanks to her philanthropic work through her company TechLit Africa where she secured computers for children in her rural village.

The event, held at the American Museum of Natural History, saw the 29-year-old beat 10 other nominees to win the coveted award.

Cheboi, in her acceptance speech, said she was now targeting more children she intends to equip with computer knowledge from a young age, something she did not have the privilege to have.

In a past interview with CNN, Cheboi said the conditions in her family and most homes in the communities were deplorable, making her yearn to make a difference in the area.



Figure 28: Nelly Cheboi and her mother

"I want to get to 100 schools which translates to 40,000 schoolgoing children. We need to rewrite what it means to grow up in rural Africa because people can work glamorous jobs and still work in your community," she stated. As CNN Hero of the Year, the 29-year-old will receive \$100,000 (Sh12 million) to expand her work. She and the other top 10 CNN Heroes will also receive a \$10,000(Sh1.2 million) cash award and, for the first time, additional grants, organisational training and support from The Elevate Prize Foundation through a new collaboration with CNN Heroes.

Cheboi will also be named an Elevate Prize winner, which comes with a \$300,000 (Sh37 million) grant and additional support worth \$200,000(Sh24.6 million) for her non-profit work.

Other 2022 CNN heroes include Carie Broecker, Richard Casper, Nora El-Khouri Spencer, Tyrique Glasgow, Teresa Gray, Meymuna Hussein-Cattan, Aidan Reilly, Debra Vines, and Bobby Wilson.

#### Source:

https://africa.businessinsider.com/local/leaders/techlit-africafounder-nelly-cheboi-crowned-cnn-hero-of-the-year/rgjjcds

# CUTTING EDGE FRONTIER SCIENCE AND TECHNOLOGY



By India Today Web Desk: As the world moves from the humandependent workforce to robotic hands, engineers at the Massachusetts Institute of Technology (MIT) have designed a unique robot that can self-assemble and build "almost anything." The robots can help in constructing buildings, building vehicles, and even grow into bigger robots.

The team is aiming to design robots that can economically assemble almost anything including things much larger than themselves, from vehicles to buildings to larger robots. The work has been led by the Center for Bits and Atoms (CBA) at MIT, which has been in research for years on the unique technology.

They recently demonstrated that objects such as a deformable airplane wing and a functional racing car could be assembled from tiny identical lightweight pieces — and that robotic devices could be built to carry out some of this assembly work. Their findings have been published in a paper in the journal Nature.

"We introduce a discrete modular material-robot system that is capable of serial, recursive (making more robots), and hierarchical (making larger robots) assembly. This is accomplished by discretizing the construction into a feedstock of simple primitive building blocks which can be re-configured to create a wide range of functionality," the MIT team said in the paper.

While researchers maintain that a fully autonomous system capable of both assembling larger structures, including larger robots, and planning the best construction sequence is still years away, the latest work brings them a step closer to that reality. The new system is made up of complex, large, usable structures built from an array of tiny identical subunits called voxels.

While earlier voxels were purely mechanical structural pieces, the team has now developed complex voxels that can carry both power and data from one unit to the next. "When we're building these structures, you have to build in intelligence. What emerged was the idea of structural electronics — of making voxels that transmit power and data as well as force. There are no wires.

There's just the structure," CBA Director Neil Gershenfeld, said in a statement.

The robots themselves consist of a string of several voxels joined end-to-end. As these robotic devices work on assembling something, they face choices at every step along the way. CBA doctoral student Amira Abdel-Rahman said that It could build a structure, or it could build another robot of the same size, or it could build a bigger robot.

While the experimental system can carry out the assembly and includes the power and data links, in the current versions the connectors between the tiny subunits are not strong enough to bear the necessary loads. The team is now focusing on developing stronger connectors.

Source: https://www.indiatoday.in/science/story/mitengineers-design-robots-that-can-grow-into-bigger-robots-ontheir-own-2301730-2022-11-25

# **AFRICAN TRADITIONAL MEDICINE DAY 2022**



Message of WHO Regional Director for Africa, Dr Matshidiso Moeti

On 31 August every year for the past two decades, we have marked African Traditional Medicine Day, to honour the integral role of traditional medicine in the health and welfare of generations of people on the continent.

This year's theme, "Two Decades of African Traditional Medicine Day: Progress Towards Achieving Universal Health Coverage in Africa", gives us the opportunity to reflect on the progress towards African traditional medicine being afforded the prominence it deserves in national health systems. Traditional medicine has been the trusted, acceptable, affordable and accessible source of health care for African populations for centuries. Still today, 80% of the continent's population relies on traditional medicine for their basic health needs.

Since African Traditional Medicine Day was initiated in 2003, the continent has seen the implementation of WHO Regional Strategies on Promoting and Enhancing the Role of Traditional Medicine in Health Systems, 2001-2010 and 2013–2023, as well as plans of action for the First (2001-2010) and Second Decades of African Traditional Medicine (2011-2020).

Member States have used the day to catalyze discussion forums around national policies on traditional medicine, cultivation of medicinal plants, including training of traditional health practitioners, and their collaboration with their conventional counterparts.

These activities prompted more than 40 African Region countries to develop national traditional medicine policies by 2022, up from only eight in 2000. Thirty countries have also integrated traditional medicine into their national policies, a 100% improvement on the situation in 2000. Additionally, 39 countries have established regulatory frameworks for traditional medicine practitioners, compared to only one in 2000, demonstrating good governance and leadership.

Today, with 34 research institutes in 26 countries dedicated to traditional medicine research and development, it remains a promising industry, with great commercial potential if marketed appropriately internationally. Twelve of these countries reported making public fund allocations to this research and development across the past 10 years.

These institutes have employed WHO guidelines and protocols to assess the quality, safety and efficacy of traditional medicinebased therapeutics for priority diseases, such as HIV/AIDS, malaria, diabetes, hypertension, Sickle-Cell Disease and, recently, COVID-19. Currently 17 countries, as opposed to zero in 2000, have frameworks for the protection of intellectual property rights and traditional medical knowledge.

To advance continental efforts towards equitable access to medical products and technologies, all but eight African Member States are now engaged in large-scale cultivation of medicinal and aromatic plants. Nineteen countries have also established facilities for the local manufacture of herbal medicines, with the number of herbal medicines registered by national regulatory authorities in 14 countries increasing from just 20 in 2000, to more than 100 this year. More than 45 herbal medicines now feature on national essential medicines lists.

In another important advance, 25 countries have now integrated traditional medicine into their health sciences curricula, while 20 have established training programmes for traditional health practitioners and health sciences students, to strengthen human resources in both traditional medicine and primary health care. Thirty-nine countries have also developed legal frameworks for traditional health practitioners. Positive signs of traditional and conventional health systems working in parallel for the good of their patients is that referrals of patients between the two sectors are now taking place routinely in 17 countries. A total of 24 countries have also developed Codes of Ethics and Practice for traditional health practitioners, to ensure safety and standards of service delivery. Ghana is setting the example for the continent, with the establishment of traditional medicine clinics in 55 regional hospital settings to date.

WHO in the African Region has supported joint missions with partners to the Democratic Republic of Congo, Ghana, Madagascar, Nigeria, South Africa and Uganda, to monitor clinical trials of traditional medicine-based therapeutics proposed for COVID-19, eight of which are ongoing. The political will displayed by countries to support these innovations has been inspiring, as has the level of available infrastructure and skills.

On African Traditional Medicine Day today, I call on governments to strengthen collaboration between science, technology and innovation institutions; traditional health practitioners and the private sector, to fast-track research and development, and local manufacturing of traditional medicine-based therapeutics for the health and well-being of Africa's people.

Source: https://www.afro.who.int/regional-director/speechesmessages/african-traditional-medicine-day-2022#:~:text=Traditional%20medicine%20has%20been%20th e,for%20their%20basic%20health%20needs

#### **NACOSTI STAFF NEWS**

# NACOSTI SEMINAR ON SHARING EXPERIENCES/ GET-TOGETHER-LUNCHEON

The Commissions' Board and Management organized a Staff Luncheon on 14th October 2022, at NACOSTI cafeteria to appreciate the commission's

entire staff for their excellent performance on the FY 2021/22 Performance Contract (PC) as part of staff development and rewarding, bid the retired staff goodbye and appreciate their service to NACOSTI and to sensitize staff on the FY 2022/23 PC Targets and expectations from the board.

**Pictorial** 



Figure 29: NACOSTI Board and Staff during the Staff Luncheon

National Commission for Science, Technology and Innovation (NACOSTI)



National Commission for Science, Technology and Innovation (NACOSTI)



NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION (NACOSTI)

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#### PUBLIC NOTICE

### Licensing of Research in Kenya

The National Commission for Science, Technology and Innovation is established by the Science, Technology and Innovation (STI) Act, No. 28 of 2013, Revised in 2014 (the Act) as a State Corporation. The Commission regulates and assures quality in Science, Technology and Innovation Sector and advises the Government in matters related thereto. In this regard, the Act stipulates seventeen (17) functions of the Commission. Among the functions of the Commission, Section 6(1)(f) of the STI Act 2014 [2013] specifies that the Commission shall accredit research institutes and <u>approve all</u> <u>Scientific research in Kenya</u>.

Consequently, Section 12(3) of the Act requires that <u>any person</u> <u>undertaking or intending to undertake research</u> in science and technology in the country, or who accesses, handles, or transfers any material or technology or moves it within, from or into the country, shall apply to the Commission for the grant of a licence in accordance with the Act.

Section 12(5) of the Act further **directs that no licence shall be granted** by the Commission for any research involving activities which;

- (a) may adversely affect the <u>culture</u> of any community in Kenya;
- (b) may adversely affect the <u>environment</u>;
- (c) may result in the exploitation of <u>intellectual property rights</u> of communities to their traditional knowledge.

(d) may, in the view of the Commission, adversely affect the <u>lives</u> of Kenyans.

Section 13(1) of the Act reinforces Section 12(5) by directing that the Commission shall, upon receipt of an application under section 12, evaluate the application, and if satisfied that the conduct of the research is <u>beneficial</u> to the country, and that the research <u>shall</u> not adversely affect any aspect of the nature, environment or the <u>security</u> of the country, issue to the applicant a licence in the prescribed form.

Pursuant thereto, members of the public are hereby notified that according to the Science, Technology and Innovation Act 2014 [2013], Scientific Research in Kenya must be approved and licensed by the Commission.

As stipulated in Section 15 of the Act, any person who accesses, handles, transacts, transfers or moves any specified technology or any material necessary for scientific research within, into or from Kenya without a licence issued under this Act; or contravenes the provisions of Section 12 of the Act, <u>commits an offence</u> and shall, in addition to any other penalty which may be provided for in this Act or any other written law, be liable on conviction to a fine not exceeding five million shillings or to imprisonment for a term not exceeding four years, or both.

For further clarification kindly contact the Commission, or visit online services at https://research-portal.nacosti.go.ke/

PROF. WALTER O. OYAWA, PhD DIRECTOR GENERAL NACOSTI is ISO 9001:2015 Certified

#### **SERVICE CHARGES**

**Fees/Charges for Research Licensing** 

#### Table 1: Current fees/charges for Research Licensing

| No | Category of Research License                              | Fees/charges |
|----|---|--------------|
| 1) | Kenya Citizens: Diploma / Undergraduate Ksh. 100          |              |
|    | Kenya Citizens: MA/MSc                                    | Ksh. 1,000   |
|    | Kenya Citizens: PhD                                       | Ksh. 2,000   |
|    | Kenya Citizens: Individual / Post Doctoral                | Ksh. 5,000   |
|    | Public Institutions                                       | Ksh. 10,000  |
|    | Private Institutions                                      | Ksh. 20,000  |
| 2) | EAC Citizens: Diploma / Undergraduate                     | Ksh. 100     |
|    | EAC Citizens: MA/MSc                                      | Ksh. 1,000   |
|    | EAC Citizens: PhD   | Ksh. 2,000   |
|    | EAC Citizens: Individual / Post Doctoral                  | Ksh. 5,000   |
| 3) | Rest of Africa: Diploma / Undergraduate                   | Ksh. 200     |
|    | Rest of Africa: MA/MSc                                    | Ksh. 2,000   |
|    | Rest of Africa: PhD                                       | Ksh. 4,000   |
|    | Rest of Africa: Individual / Post Doctoral                | Ksh. 10,000  |
|    | /Non-academic Doctoral                                    |              |
| 4) | Non-Africans: Diploma / Undergraduate                     | US\$ 150     |
|    | Non-Africans: MA/MSc                                      | US\$ 350     |
|    | Non-Africans: PhD   | US\$ 400     |
|    | Non-Africans: Individual / Post Doctoral<br>/Non-academic | US\$ 500     |

#### Notes:

- 1. Non-Kenyans in local institutions with work permits and/or Permanent Resident Permits to pay same as Kenya citizens.
- 2. Students in local institutions of higher learning pay same as citizens.
- 3. The Supervisor may apply on behalf of a class undertaking Diploma or Degree course, however the service cost will be dependent on the number of students

#### Fees/Charges pertaining to Research Institutions

**Table 2**: Current fees/charges for Registration of ResearchInstitutions, Accreditation of Research Programmes, andMonitoring and Evaluation of Research Institutions

| No. | Services                        | Current fee in KES            |
|-----|---------------------------------|-------------------------------|
| 1)  | <b>Registration of Research</b> | 250,000                       |
|     | Institutions                    |                               |
| 2)  | Accreditation of Research       | 250,000                       |
|     | Programmes                      |                               |
| 3)  | Inspection, Monitoring and      | A basic fee of 275,000 will   |
|     | Evaluation of Research          | be levied per inspection in   |
|     | Institutions                    | addition to any other         |
|     |                                 | additional costs that will be |
|     |                                 | related to the inspection     |

# DRAFT GUIDELINES FOR STAKEHOLDER INPUT, COMMENTS, AND RECOMMENDATIONS

The National Commission for Science, Technology and Innovation (NACOSTI) is established by STI Act 2013(Rev. 2014) with the objective of regulating and assuring quality in the science, technology and innovation sector and advise the Government in matters related thereto. Further, Section 6(1)(p) of the STI Act mandates the Commission to develop and enforce codes, guidelines and regulations in accordance with the policy determined under this Act for the governance, management and maintenance of standards and quality in research systems. In this regard, the Commission has developed draft guidelines as listed below, and hereby invites stakeholders for their written input, comments, suggestions and recommendations by September 2021. In this regard, the Commission has developed draft STI Priorities, and Guidelines as listed below, and has circulated the same to stakeholders for their input, comments, suggestions, and recommendations. The Commission therefore reminds stakeholders who have not yet submitted their written input, suggestions and recommendations to the Commission for consideration to do so by latest 30th November, 2021. The documents may be downloaded at NACOSTI Website www.nacosti.go.ke

- DRAFT "PRIORITIES IN SCIENTIFIC, TECHNOLOGICAL AND INNOVATION ACTIVITIES"
- The Priorities in Scientific, Technological and innovation activities in Kenya are in line with Section 6(1)(a) of the STI Act which stipulates that "the Commission shall develop, in consultation with stakeholders, the priorities in scientific, technological and innovation activities in Kenya in relation to the economic and social policies of the Government, and the country's international commitments"
- DRAFT "NATIONAL GUIDELINES FOR REGISTRATION, LICENSING, AND REGULATION OF RESEARCHERS IN KENYA". The Guideline is in line with Section 15 of the Legal Notice 106 of 2014, of the STI Act 2013, titled "STI (Registration and Accreditation of Research Institutions) Regulations, 2014", which mandates the Commission to register, license and regulate researchers in the Scheduled Science areas.
- DRAFT "NATIONAL GUIDELINES FOR ACCREDITATION OF ACADEMIC JOURNALS IN KENYA".

The Guideline is in line with Section 26 of the STI Act which specifies that "Research findings and information regarding research systems shall be stored or disseminated, utilized or applied in such a manner as may be prescribed by the Commission from time to time".

# **CURRENT NACOSTI STAFF**



Prof. Walter O. Oyawa, PhD Director General/CEO



Mr. Godfrey Kalerwa Ag. Director, Research Accreditation and Quality Assurance,



Dr. David Njubi Ag. Director, Scheduled Sciences



Mr. Gideon Kirui Ag. Director Corporate Services



Dr. David Otwoma Chief Analyst, Physical & Industrial Sciences



Ms. Jennifer Murgor Deputy Director, Human Resource



Dr. Benson Kinyagia Ag. Chief Analyst, Biological and Health Sciences



Ms. Margaret Muthee Chief Analyst, Humanities and Social Sciences



Mr. Abdallah Bii Deputy Director, Legal Services



Mr. Cyrus Kamau Chief Analyst, Infrastructure Communication, and Information Sciences



Ms. Yasmin Hussein Deputy Director, Supply Chain Management



Ms. Jane Omari Principal Analyst, Agriculture and Natural Resources Sciences



Dr. David Ngigi Principal Research, Quality Assurance Officer



Ms. Evelyn Mbaabu Principal Analyst, Humanities & Social Sciences



Mr. Amon Komen Senior Analyst, Physical & Industrial Sciences



Mr. Julius Mwangi Senior Analyst, Earth and Space Sciences



Ms. Charity Muchoki Senior Analyst, Agriculture and Natural Resources Sciences



Ms. Teresia Nyawira Senior Analyst, Biological and Health Sciences



Dr. Mary Onsarigo Senior Analyst, Biological and Health Sciences



Mr. Stephen Situma Senior Analyst, Physical & Industrial Sciences



Mr. Muhanji Ambani Senior Administration Officer



Ms. Eunita Ogindo Senior Accountant



Ms. Mildred Mugambi Senior Corporate Communications Officer



Ms. Ruth Were Senior Supply Chain Management Officer



Mr. Denis Yegon Senior ICT Officer



Ms. Lilian Awala Licencing, Monitoring & Evaluation Officer



Mr. David Amiani Licencing, Monitoring & Evaluation Officer



Mr. Steven Indimuli Research Quality Assurance Officer



Ms. Rael Adhiambo Analyst, Earth and Space Sciences



Ms. Pauline Kuyan Accountant



Mr. Ezekiah Gatheru Analyst, Infrastructure, Information & Communication Sciences



Mr. Rollex Opondo Records Management Officer



Mr. Phelix Awuor Records Management Officer



Assurance Officer

Mr. Timothy Mutanda Internal Auditor



Mr. Cyprian Karithi Records Management Officer



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Ms. Wairimu Ikua Senior Officer Administrator



Ms. Christine Kayesi Senior Officer Administrator



Ms. Millicent Okuku Officer Administrator



Ms. Nahida Annar Officer Administrator



Ms. Ruth Asati

Senior Customer Care

Assistant

Ms. Lourine Auma Accounts Assistant



Ms. Kulah Abdikadir Account Assistant



Mr. Paul Anuro Senior Driver



Mr. Pius Samoe Senior Driver



Mr. Abdi Ibrahim Senior Driver

#### **KENYA'S NATIONAL ANTHEM**

#### Kiswahili

1 Ee Mungu nguvu yetu Ilete baraka kwetu Haki iwe ngao na mlinzi Natukae na undugu Amani na uhuru Raha tupate na ustawi.

#### 2

Amkeni ndugu zetu Tufanye sote bidi Nasi tujitoe kwa nguvu Nchi yetu ya Kenya Tunayoipenda Tuwe tayari kuilinda

3

Natujenge taifa letu Ee, ndio wajibu wetu Kenya istahili heshima Tuungane mikono Pamoja kazini Kila siku tuwe na shukrani



# English

O God of all creation Bless this our land and nation Justice be our shield and defender May we dwell in unity Peace and liberty Plenty be found within our borders.

#### 2

Let one and all arise With hearts both strong and true Service be our earnest endeavour And our homeland of Kenya Heritage of splendour Firm may we stand to defend

#### 3

Let all with one accord In common bond united Build this our nation together And the glory of Kenya The fruit of our labour Fill every heart with

# THE EAST AFRICA COMMUNITY ANTHEM



 Ee Mungu twaomba ulinde Jumuiya Afrika Mashariki Tuwezeshe kuishi kwa amani Tutimize na malengo yetu.

Chorus Jumuiya Yetu sote tuilinde Tuwajibike tuimarike Umoja wetu ni nguzo yetu Idumu Jumuiya yetu.

 Uzalendo pia mshikamano Viwe msingi wa Umoja wetu Natulinde Uhuru na Amani Mila zetu na desturi zetu.

 Viwandani na hata mashambani Tufanye kazi sote kwa makini Tujitoe kwa hali na mali Tujjenge Jumuiya bora.



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