With support from Media Council of Kenya, AVAC and JRS Biodiversity.

SCIENCE SAYANSI

Telling the African science story

Issue No. 29 www.meshascience.org DECEMBER 2022

COP27: Not state, not people, 'can address the real loss and damage'

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The Media for Environment, Science, Health and Agriculture (MESHA) was founded in November 2005 in Nairobi, Kenya and is an organisation that provides support to science journalists covering health, development, technology, agriculture and the environment. It does so by offering training workshops, consultancies and encouraging networking through meetings and conferences among journalists, scientists and other stakeholders in Kenya.

The association emphasises on rural journalism and communication.

The idea for the formation of this association sprang up from the fact that there were many organisations and communicators in the fields of agriculture, environment, health and development. However, few organisations in the region bring journalists covering these issues together, for better reporting in the media.

MESHA believes that in a democratic society where science must be answerable to the public, there is need to find new and innovative ways of effective mass communication about the benefits of science, and other areas of concern to the general public.

MESHA aims to ensure continuity, sustainability and consistent coverage of science and development issues as they arise.

SAYANSI

is a publication of MESHA,
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Mesha Science

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Cover photo:
Zeynab Wandati, a science editor at NTV is a climate change journalist. In this photo taken in Kigali, Rwanda she was training African journalists in preparation for coverage of COP27 held in Sharm el Sheikh, Egypt

Photo Credit: Aghan Daniel

Loss and damage fund must not be an empty triumph like Paris Agreement and Copenhagen $100b promise

On November 20, 2022, two days after COP27 was scheduled to end in Sharm el-Sheikh, Egypt, Africa and other developing countries got a breakthrough; the establishment of a 'loss and damage' fund for vulnerable countries hit hard by climate disasters.

This was not a mean feat for Africa and other developing countries in the conference held in the continent for the first time. They had fought hard to get the item on the agenda of COP27 in the first place.
The establishment of a loss and damage fund was, for many, the highlight of the conference and the culmination of decades of pressure from climate-vulnerable developing countries.

"This outcome moves us forward," said Simon Stiell, United Nations Climate Change Executive Secretary. "We have determined a way forward on a decades-long conversation on funding for loss and damage – deliberating over how we address the impacts on communities whose lives and livelihoods have been ruined by the very worst impacts of climate change."

While the landmark decision is welcomed, this is just the first step, and success will depend on how quickly this fund gets off the ground. All parties to the UNFCC conference on climate change must now work towards ensuring that the loss and damage fund does not turn out to be yet another empty triumph.

We all remember that developed countries – the biggest contributors to the debilitating effects of climate change – are yet to fulfill their promise on the Paris Agreement to reduce carbon emissions and enhance climate action.

Apart from the Paris Agreement on carbon emissions, at the UN climate change summit in Copenhagen, Denmark, in 2009, rich nations promised to channel US$100 billion (Ksh12 trillion) a year to less wealthy nations by 2020, to help them adapt to climate change and mitigate further rises in temperature. More than 13 years later, the pledge also remains unfulfilled, and African group of negotiators expressed disappointment during COP27.

According to the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report, Africa will be impacted more than any other continent while it only contributes less than four per cent of the world's total carbon emissions.

The report estimates that adaptation costs in developing countries will reach $127 billion (Ksh15.5 trillion), and Africa needs up to $86.5 billion (Ksh10.5 trillion) annually by 2030.

The continent, therefore, needs the loss and damage fund and other climate financing mechanisms to adapt to the unavoidable risks of climate change, such as rising sea levels, prolonged droughts, desertification, frequent flooding, species extinction and crop failures. As the climate crisis unfolds, these events will happen more and more frequently, and the consequences will become more severe.

The IPCC report shows that Africa has so far suffered a 34 per cent decline in food production and loss and damage to agricultural productivity.

The representatives from 24 countries tasked with deciding what form the loss and damage fund should take must therefore work fast and deliver this historic promise.

Farmers forced to act smart to tackle effects of climate crisis on agriculture

By Rosemary Onchari | oncharir37@gmail.com

Photo Credit | Rosemary Onchari

Margaret Nyaboke was an optimistic farmer as she supervised workers planting maize on her farm four months ago. She projected returns from sales of at least 75 per cent of the produce, and knew the remainder would last her small family a year.

But she was all wrong. A sizable portion of the crops soon started yellowing and their growth stunted. She has not experienced the yellowing and stunted growth for the 10 years she has been a farmer.

"We had rains for about one month, and we hurriedly tilled the land and planted. But the rains did not last," she says.

Compared to the previous season, her maize harvest went down from 30 sacks to 26 in the last harvest season.

Due to the unpredictable weather patterns, Nyaboke is now contemplating shifting focus from maize farming to indigenous vegetables.

60-year-old James Nyagwoka at his arrowroots farm in Kegagati, Kisii County.

Africa has recently suffered extreme weather events such as prolonged droughts and flooding, besides unpredictable rain patterns that have disrupted farmers' plans and messed yields, putting many lives at risk of food insecurity.

Globally, at least 350 million farmers appealed to leaders at the November 2022 United Nations Framework Convention on Climate Change's (UNFCCC) to increase adaptation finance. They also appealed for promotion of a shift to more diverse, low-input agriculture to help farmers adapt to climate change.

Statistics from the Food and Agriculture Organisation (FAO) have shown that more than 60 per cent of Africa's 1.4 billion people live in rural areas and depend on climate-sensitive livelihoods like rain-fed agriculture.

Meanwhile, James Nyagwoka, who grows arrowroots in Kegati village, Kisii County, has joined in the efforts to tackle effects of climate change by adopting climate smart farming.

"Since the disruption of weather patterns in the last four years, I no longer depend on the rains, I irrigate my farm," he said.

A water well and a nearby river provide steady supply of water to his farm, especially during the dry season.

Nyagwoka started growing arrowroots in 2015, as it is not prone to many diseases and pests and also because it requires little agronomic practices. He has utilised the spaces between the arrowroots to grow kales and spinach for subsistence and economic purposes.

This season, Nyagwoka planted 100,000 arrowroots. He projects to harvest in December.

Kisii Country Director of Agriculture Nathan Soire said since the intensity and distribution of rainfall had been disrupted, farmers are forced to embrace new ways out.

The long rainy season in the high-altitude area used to be from December to February. This was the normal planting season for food crops. In the low-altitude areas, planting season would start between February and March. But this is no longer certain.

Diseases and pests such as the fall army worms, which thrive in high temperatures, have affected crop production, causing farmers losses and untold suffering.

Soire now says the local ministry is now creating awareness on soil conservation and water harvesting methods. It has increased awareness on the importance of agroforestry, according to Soire.

The ministry has sensitised farmers not to rely on rain-fed agriculture but instead adopt technologies such as use of irrigation.

"We have encountered situations where it stops to rain just when crops are flowering or fruiting. These are critical stages where the crops need water more.

But due to climate change farmers suffer losses due to low production," he said.

Agriculture officers have always encouraged farmers to use organic manure to improve the soil texture and structure for capacity to hold adequate water over a long period. Farmers have also been advised to plant during the onset of rainy seasons and also supplement the rainfall with irrigation systems.

Cover crops and mulching is also encouraged as a means to tackle effects of the climate crisis on agricultural yield.

Kisii County Head of Meteorological Department Henry Sese has meanwhile urged farmers to acquaint themselves with the changing weather patterns as well as identify different types of crops that can adapt.

"During the dry season, we advise farmers to grow crops that require little rainfall such as cassava, finger millet, sorghum, and sweet potatoes, which take about three months to mature," said Sese.

Striga Smart Sorghum Project Launched in Kenya and Ethiopia

By Don Ngome | info@meshascience.org

A new project, ***Feed the Future Striga Smart Sorghum for Africa***, has been launched in Kenya and Ethiopia.

The project utilizes genome editing technology to develop new sorghum varieties resistant to Striga.

Striga is a parasitic weed responsible for up to 100 percent yield loss in Africa's staple cereals, thus posing a great danger to the livelihoods of millions of smallholder farmers on the continent.

The three-year multi-institutional, multisectoral project is supported by the U.S. Agency for International Development (USAID) which has awarded nearly US$3.8 million to support the International Service for the Acquisition of Agri-biotech Applications (ISAAA) AfriCenter, Kenyatta University (Kenya), and Addis Ababa University (Ethiopia).

In Kenya, Dr. Gatama Gichini, a representative of Kenya's Education Cabinet Secretary, presided over the project launch.

"The Ministry encourages the partners to anchor the project within Government agricultural programs for synergy and optimum success," he said.

Photo Credit | ISAAA

Dr. Gatama Gichini, from the Ministry of Education, Kenya presides over the launch of a genome editing project on *Future Striga Smart Sorghum for Africa*.

The lead partners say the project is a game-changer in Africa's quest to combat the effects of climate change on agriculture. "We are grateful for this outstanding award.This is a clear demonstration of USAID's commitment to address agricultural challenges and empower African smallholder farmers through yield improvement interventions," said Dr. Margaret Karembu, the project's contact.

Prof. Steven Runo, a co-chief scientist termed the new project a win for agriculture in the region. "Striga infestation is a real menace in sub-Saharan Africa. We convey our utmost gratitude to USAID for the big support in arresting this mammoth challenge and ensuring the region becomes food sufficient," remarked Prof. Runo.

Photo Credit |File Photo

Dr Mithika Mwenda addresses climate activists during one of the COP27 sessions in Sharm el Sheikh, Egypt.

Why African CSOs are disappointed by COP27 outcomes for the continent

By Clifford Akumu | akumu.clifford@gmail.com

African civil society organisations (CSOs) have expressed disappointment with the progress and expected outcomes from COP27 as the curtains closed on the global climate change meet in Sharma El Sheikh, Egypt.

The CSOs said contrary to expectations by Africa, COP27 left "millions of Africans in continued climate-related misery".

Dr Mithika Mwenda, the Executive Director, Pan-African Climate Justice Alliance (PACJA), said Africans leave COP27 a disappointed lot.

"We came with the hope that the momentum created by the discussions in the year ahead of COP27 under the facilitation of UNFCCC, the COP Presidency and friends of the COP would materialise with concrete outcomes in Egypt. But unfortunately, the end of COP is an anti-climax," said Dr Mwenda.

He said people facing starvation in the Eastern and Horn of Africa because of climate-related droughts, women in Nigeria drowning in floods and those buttered by the cyclones in Southern Africa would continue to wait for signals on action from the international community. "This will continue to delay because decisions on loss and damage have been delayed yet again to 2024," he said.

Tracy Sony, a gender specialist from Botswana, said the most pressing issue of concern is the lack of clear linkages between yearly plans, programmes and discussions from across continents but without concrete outcomes at every other COP.

"Why should we be meeting every year in these COPs that end up with no substantial outcomes?" Sony posed.

Augustine Njamnshi, Chair of Political and Technical Committee at PACJA, said Africans left COP27 less reassured of the goodwill of global leaders, especially those in high-polluting industrialised countries. He said climate activists expected to see delegations from the developed countries make bold decisions reflecting the scale and urgency of the climate crisis.

Njamnshi said that as in Glasgow last year, which lowered the bar and deferred urgent actions despite the high risk of missing the Paris Agreement targets, COP27 has dashed the hopes of the African people, potentially raising their plight.

Mentioning areas Africans felt let down by the COP27, he said failure to admit Africa's special needs and circumstances on the agenda of COP27 contributed to the slow progress, delays and, in some cases, the lowering of ambition on issues pertinent to Africa.

In addition, the deferral of a decision on financing loss and damage to 2024 with no guarantees of an outcome that reflects the aspirations and hopes of Africa and the lower-than-needed emission reduction ambition announced by big polluters, particularly the EU, have downgraded the COP in the eyes of Africans.

Photo Credit | Francis Mureithi

A Climate change activist protests outside the conference halls at COP27 in Sharm el-Sheikh, Egypt.

"The COP was tagged as an implementation COP with its promise on key African issues and had women excited since they are the major implementers of climate action at the grassroots," she said.

However, she added, women feel disappointed by the lack of action on adaptation, loss and damage, which has meant little action on agriculture on which the economies of African countries rely and given that women drive the venture.

Lucky Abeng, a young man from Nigeria, said the youth that make up 70 per cent of the population of the continent left COP27 disappointed.

"Young people have been disadvantaged and look to next year with uncertainty. The COP27 progress has done nothing but punctured the pride of the African youth," he said.

Njamnshi said the lack of a clear trajectory for phasing out fossil fuels, which has resulted in the decision by some countries to continue using the high-polluting sources of energy that have powered the same economic model behind the current climate crisis, would not be helpful.

"After a careful examination of what needs to change to rekindle hope and justify Africa's continued engagement with the global effort to address the climate crisis, we call on African leaders to reassess the relevance of the UNFCCC and COP processes to the African people and take radical actions to strengthen Africa's voice and participation," he said.

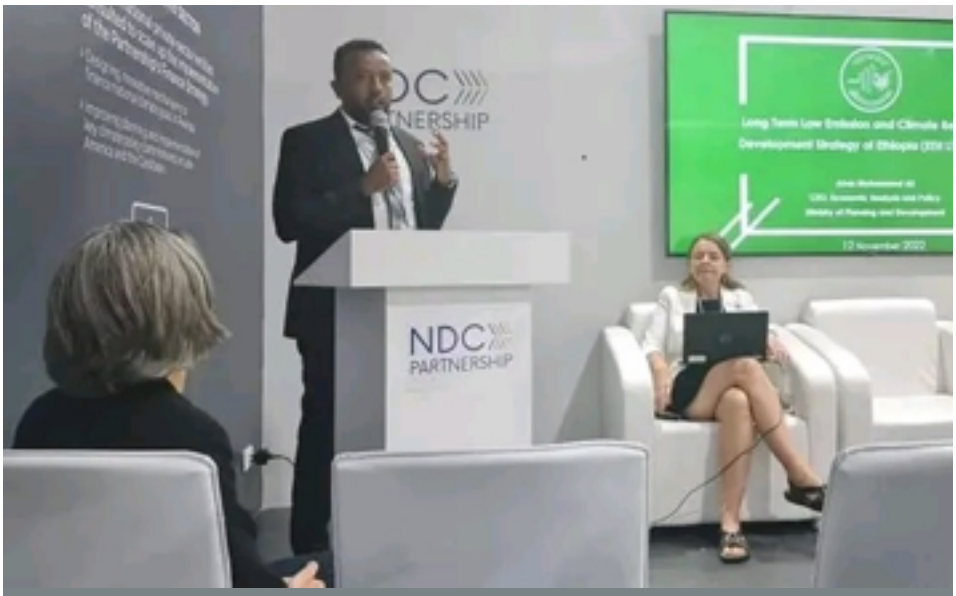
He demanded of big polluters to honour their engagement to deliver the resources needed to address the climate crisis in Africa, especially as it concerns adaptation and loss and damage.

Photo Credit | Reuters

Florence Kasule, a climate activist from Uganda, said African women feel disappointed by the process and progress at this COP.

Egyptian Foreign Minister Sameh Shoukry.

Photo Credit | Mekonnen Teshome



Ethiopian delegation to COP27 present national report

Ethiopia needs $157b to implement climate adaptation programme

By Mekonnen Teshome | mokish03@gmail.com

With the adoption of a Climate Resilient Green Economy Strategy (CRGES), Ethiopia has made exemplary climate change adaptation moves over the last decade.

However, the national programme now faces the challenge of lack of global climate financing.

The country says it needs $157 billion (Ksh19 trillion) to implement its long-term low emissions development strategies (LT-LEDS).

Ethiopia's climate financing challenges were brought to light by the country's Environmental Protection Authority (EPA) experts at COP27 in Sharm el-Sheikh, Egypt.

According to the experts, though Ethiopia is currently facing the worst impacts of climate change in the last 40 years, the support from "development partners" was negligible in relation to climate change financing.

International Environmental Agreements Negotiations Director with EPA, Mensur Dese said impacts of climate change, including recurrent droughts, flash floods and erratic rains have increased drastically over the last four decades in Ethiopia due to the ever changing climate.

The experts, who presented Ethiopia's National Adaptation Plan (NAP), further elaborated that lowland areas of the country – Somalia, Oromia, South and Southwest regional states – have been severely affected due to the human-induced challenge.

According to the experts' report, 8.1 million people were affected by the drought this year, over 2.1 million cattle died and 22 million are still at risk, and the situation in Eastern Africa in general and Ethiopia in particular calls for immediate global climate financing response.

Ethiopian Prime Minister Abiy Ahmed, noting the unfulfilled promises of the developed countries in tackling climate change impacts, said, "It is past time to address the growing financial and technological needs. Pledges must be translated into new resources and support. The time to avert the worst effects of the climate crisis is running out. We must now scale up our efforts."

"Increased funding must reflect the magnitude of Africa's challenge. Countries must honour their climate pledges, provide the necessary financing, and address the outstanding issues of loss and damage and the carbon trading mechanism in ways that allow for faster results."

Mr Abiy said Africa is the most vulnerable to climate change while it accounts for less than five per cent of global greenhouse gas emissions and approximately 17 per cent of total global population.

Nevertheless, he added, the continent receives less than five per cent of the world's climate fund, which is mainly in debt.

Developed countries like the United Kingdom, the United States, the European Union and Australia acknowledged that there is currently a funding gap in addressing loss and damage, at an informal consultation on loss and damage finance during COP27.

As part of COP negotiations, developed countries pledged to provide $100 billion (Ksh12.2 trillion) in climate finance to developing countries by 2020. However, they are yet to fulfill the commitment.

With the announcement of $150 million (Ksh18.3 billion) donation for Africa's adaptation to climate change by US and Egypt last week, it seems that the appeal is being fulfilled.

However, the global financial requirement is huge as the impact of climate change is rapidly increasing.

To this end, a United Nations-backed report presented at COP27 reveals that developing and emerging countries, excluding China, need investments well beyond $2 trillion (Ksh244 trillion) annually by 2030 if the world is to stop the global warming juggernaut and cope with its effects.

One of the lead authors of the report, Nicholas Stern, confirms that rich countries should recognise that it is in their self-interest as well as a matter of justice, given the severe impacts caused by their high levels of current and past emissions, to invest in climate action in emerging markets and developing countries.

Mr Abbas Mohamed, Chief Executive Officer of Economic Analysis and Policy at Ethiopia's Ministry of Planning and Development, in his brief to donor countries and development partners in Sharm El-Sheikh, solicited for the support of development partners to help the country implement its plan.

He told participants that the country envisages an average of 9.1 per cent economic growth in 30 years when the plan is implemented and 85.3 million jobs will be created due to the green economy the country is going to realise.

MESHA at UN Summit on Climate Change (COP27)

With support from the International Development Research Centre's eastern and southern Africa office based in Nairobi, your preferred science journalists association, MESHA, supported 7 journalists to cover the COP27 in Sharm el Sheikh, Egypt 6 - 20, November, 2022.

Ten other journalists including one television crew from Seychelles followed the conference virtually from their home countries. Today, we have received 130 story links and eight summaries from the grantees supported by IDRC. Here are a few photos from our grantees who travelled to Sharm.

Today, we have received 130 stories from the grantees and eight summaries from the team. Here are a few photos from Sharm el Sheikh.

1


2


3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1. *Front row (from left to right) Aimable Twahirwa (Rwanda); Jennifa Gilla (Tanzania); Agatha Ngotho (Kenya) and Violet Nakamba (Zambia). Back row: Aghan Daniel (Team leader, MESHA); Busani Bafana (Zimbabwe) and Francis Mureithi (Kenya).*
2. *Agatha Ngotho poses for a photograph with her mentor, Mr Mathews Malata (Malawi) at the COP27 Media Centre in Sharm el Sheikh, Egypt last November.*
3. *A grantee, Francis Mureithi during an interview with Internews' Ida Jooste on One Health and climate change at the Media Centre in Sharm el Sheikh during COP27.*
4. *Aimable Twahirwa (Rwanda); Busani Bafana (Zimbabwe) and Aghan Daniel (Team leader, MESHA).*

Photo Credit |Aghan Daniel

Victor Orindi of Adaptation Consortium

Kenyan team among winners of Local Adaptation Champions Awards at COP27

By Ruth Keah | rkeahkadide@gmail.com

As curtains closed on COP27 at Sharm el-Sheikh, Egypt, a Kenyan team was among the four winners of the Local Adaptation Champions Awards, organised by the Global Centre on Adaptation.

The awards recognise locally led efforts to adapt to the negative impacts of climate change across four categories: financial governance, inclusive leadership, capacity and knowledge, and local innovation.

Adaptation Consortium, led by Victor Orindi, was awarded for its efforts in bringing together people with a shared vision of empowering the community in responding and adapting to climate change challenges.

Speaking to our reporter after receiving the award, in the financial governance category, Mr Orindi said his initiatives were inspired after he noticed that climate finance was not easily accessible to everybody, especially the vulnerable communities.

"We noticed that while a lot was happening in climate finance, it was not happening in a coordinated manner. Vulnerable communities were not able to access funds and we noticed a barrier in sustained funding streams; and that communities could not have a say in the work to be implemented," he said.

"So, we started bringing people together towards a shared vision of empowering the community."

Mr Orindi, who is the National Coordinator of the Adaptation Consortium, said the only way countries can successfully mitigate climate change is by making sure that all voices are heard.

"Responding and adapting to climate challenges largely depends on context; and the only way you can get that right is by ensuring that those who are impacted have a say in terms of how and where things are done. So, enabling them to be involved in planning process ensures that their voices count at the end of the day," Orindi added.

The Adaptation Consortium supports communities to create, access, and use climate finance from varied sources to reduce their vulnerability to climate change, while strengthening public participation in the management and use of funds.

The Consortium has also designed a County Climate Change Fund to attract climate finance from public, private, local, and international sources, giving sub-national governments and communities a predictable and sustained source of finance for adaptation and resilience-building efforts.

Speaking during the awarding ceremony, Kenya's Environment and Forestry Cabinet Secretary Soipan Tuya called on more partners to fund more adaptation interventions identified by Kenyans.

"The GCA awards are about inspiring and motivating innovative and potentially scalable interventions. As a country, we are already taking forward many of the good practices and lessons from Ada work through the government-led/World Bank-supported Financing Locally Led Climate Action (FLLoCA) programme, among others," said Ms Tuya.

"We hope that more partners can join our national-level efforts to provide adequate resources to finance the priority adaptation interventions identified by our people."

Prof Patrick Verkooijen, GCA Chief Executive Officer, said such innovations require support to be scaled up so as to achieve the required impact.

"Our winners show that community-centric and locally led solutions to the climate crisis exist, but they require support and recognition to be scaled up, and to achieve the most impact," he said.

"The GCA is working with international financial institutions and governments to introduce these best practices to bigger funding streams, while maintaining what is at the heart of these impactful solutions and of successful adaptation – local leadership."

Environment and Forestry Cabinet Secretary Soipan Tuya (r) during the UN Summit on climate change in Sharm el Sheikh, Egypt.

Each winner will receive €15,000 (Ksh1.8 million) in funds to further the work they are doing in the spirit of the locally led adaptation principles. They will also have access to a global network of change makers.

The final list of winners was picked from a shortlist of 20 finalists and included a diverse selection of organisations from Kenya, Bangladesh, India and Nepal.

AFSTA Congress

Photo Credit | Aghan Daniel

A climate change negotiator being interviewed by Aimable Twahirwa from Rwanda one of the journalists supported by MESHA to attend COP-27.

African negotiators wary on climate financing

By Agatha Ngotho | angotho@gmail.com

African group of negotiators have expressed disappointment that the Ksh12 trillion (US$100 billion) pledge by developed to developing countries remains unfulfilled.

Alioune Ndoye, President of the African Ministerial Conference on the Environment (AMCEN), underscored the importance of delivering the $100 billion as soon as possible.

This will help build trust and faith in the multilateral process of addressing climate change.

"We urge developed countries to deliver on their commitment to meet the goal and ensure the progression of efforts in the on-going mobilisation of climate finance," said Ndoye while speaking to the media on the status of the negotiations at COP27 in Sharm el Sheikh, Egypt.

"We urge developed countries to take the lead in implementing their targets while providing enhanced support to developing countries."

Collins Nzovu, Minister of Green Economy and Environment from Zambia, which chaired the African Group of Negotiators, said COP27 had been dubbed an implementation COP.

"Africa is worst affected by the climate crisis and yet contributes least to the pollution that causes climate change," said Nzovu, adding that Africa is plagued by complex overlapping challenges, and many generations of Africans have been left behind and suffer consequences of actions not of their own making.

The systemic problems facing Africa require dedicated and targeted interventions. This will also unleash our continent's potential to contribute to achieving the 1.5 degrees Celcius global warming.

According to the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report, Africa will be impacted more than any other continent while it only contributes less than four per cent of the world's total carbon emissions.

The report indicated that Africa has the lowest historical and current emissions. It estimates that adaptation costs in developing countries will reach $127 billion (Ksh15.5 trillion), and Africa needs up to $86.5 billion (Ksh10.5 trillion) annually by 2030.

The IPCC report further showed that Africa has suffered a 34 per cent decline in food production and loss and damage to agricultural productivity.

The leaders called on all parties to work constructively towards reaching an agreement on a framework to enable achieving and assessing progress towards the Global Goal on Adaptation.

The Loss and Damages Fund

On November 20, countries made the landmark decision to provide loss and damage funding for countries most impacted by climate change effects. The breakthrough decision on compensation for loss and damage, can be considered as arguably the biggest win from COP27. This included the creation of a dedicated fund to support the nations that are most vulnerable and most impacted by the adverse effects of the climate crisis. They will be supported for losses arising from droughts, floods, rising seas, and other disasters attributed to climate change. There was also a call for new funding arrangements. To flesh this out, a transition committee, made up of representatives of 24 countries, was created to make recommendations on how to operationalize both the new funding arrangements and the new fund, to be discussed at the next COP.

The plethora of funds, at face value, always looks like a very positive step. This is undoubtedly the case, however missed funding targets by developed countries and difficulty in accessing the funds by African countries have remained as key constraints. According to the OECD, between 2016-2019 developed countries have fallen short of the USD 100 billion annual target for climate action in developing countries, yet this target is well below the estimated financing need. Africa has received only about USD 20 billion of this between 2016-2019. The Africa Group of Negotiators on Climate Change, have actually assessed the scale of need as rising to USD 1.3 trillion annually by 2030.

AU: Africa 'ready' to adopt gene editing

By Mekonnen Teshome I mokish03@gmail.com

Experts from five project piloting AU member states have said that most African nations have shown readiness for the adoption of Genome Editing (GEd) technology.

The AU member states came together to strategise on the use and adoption of genome editing technology in boosting agricultural productivity.

The experts made their statement in their communiqué released following a three-day genome editing communication strategy development and policy dialogue meeting held in Victoria Island, Lagos, Nigeria last week.

The meeting was organized by the Centre of Excellence in Science, Technology, and Innovation of the African Union Development Agency-NEPAD (AUDA-NEPAD) in collaboration with the Nigerian National Biotechnology Development Agency (NABDA).

Participants expressed optimism that some projects in the pipeline in the countries may be ready for commercialisation within the next three to five years.

According to the communiqué, there are growing GEd capabilities in Africa as identified at the forum and most countries involved in the pilot phase as well as other African countries have some level of enabling environment to adopt the technology.

Moreover, the experts agreed that there is a need for accelerated development of experts on genome editing and mainstreaming in the curriculum of various universities in Africa.

An agricultural extension officer in Nigeria. Experts say most African countries are ready to adopt gene editing.

They added that there is need for synergy and collaboration among African countries to foster the desired benefits from genome editing adding that such a move will spur industrial development and improved livelihoods.

They also underscored the need for Public-Private-Partnership (PPP) and improved funding made available by the private sector, adding that AU member countries need to proactively develop guidelines to facilitate the adoption of the technology and to develop communication strategy for awareness creation and public education.

In connection with the continental meeting, Press Secretary to the Director-General of Nigerian National Biotechnology Development Agency (NABDA) Mrs Toyin Omozuma, indicated the AUDA-NEPAD project has been initiated and driven by member states of Nigeria, Burkina Faso, Ghana, Ethiopia, Eswantini and Zambia.

"The goal of the Genome Editing (GEd) project is to foster a broader understanding of GEd among different stakeholder groups through communication and advocacy for enhanced uptake of the tool to optimise agriculture in Africa," she said.

Scientists say that genome-editing technologies including clustered regularly interspaced short palindromic repeats/ CRISPR-associated protein (CRISPR/ Cas) have become powerful tools for modifying plant genomes and achieve precise genetic modifications by inducing targeted DNA double-strand breaks.

This article first appeared in E-Review Magazine, a publication of the African Seed Trade Association, December 2022 edition.

https://afsta.org/wp-content/uploads/2022/12/AFSTA-E-REVIEW-DEC-2022.pdf

Sand harvesters drop trade to mitigate climate change effects

Photo Credit | John Riaga

Silas Otieno works on a part of his land that he has rehabilitated after the damage caused by sand harvesting.

By John Riaga | oukoriaga@gmail.com

When Silas Otieno, 39, was asked to abandon his daily trade of sand harvesting from River Kibos in Kisumu County, western Kenya, it did not make a lot of sense to him.

He had spent the better part of his life diving into the waters and emerging with buckets full of sand. He would do this alongside his peers from Komonge Village until it was enough to fill one lorry. From these proceeds, he would feed his family and send his children to school.

When the parcel of land riparian to the sand harvesting site was bought and fenced off, Otieno lost his daily income from sand harvesting but got a deal for a monthly salary. He now works as the lead conservationist of the environment that he once took part in destroying.

Unknown to Mr Otieno and his peers, they actively contributed to the devastating effects of climate change that has now got the whole world talking.

According to the United Nations Environment Programme (UNEP), sand mining from rivers and marine ecosystems has led to significant environmental impacts, including river erosion, shrinking deltas, land-use changes, air pollution, salinisation of coastal aquifers and groundwater reserves, threats to freshwater and marine fisheries and biodiversity.

Oblivious of the effects of their actions, many people continue to harvest sand from rivers, not just in Komonge Village but throughout Kenya.

Human activities such as sand mining have been cited by climate change experts as the leading effect on greenhouse gases (GHGs).

Paul Oloo, the Kisumu County Meteorological Director, says human activities had increased the concentration of the GHGs tremendously.

He says the initial ability of the earth to self-regulate the GHGs had been compromised as a result of their concentration levels being interfered with due to issues like accelerated population growth and the large expansion of industries across the earth.

"In its self-regulation mechanism, if for instance the amount of radiation hitting the surface of the earth is 100 units, the same is supposed to be released back into the atmosphere," Mr Oloo explains.

However, due to the disruption of the concentration levels of the GHGs, a percentage of the radiation is not able to leave the surface of the earth. "This is what increases the temperatures on the earth surface" he says.

With riverbank erosion, air pollution and the threat to biodiversity, it is not difficult to tell that the future of the residents of Komonge village is disturbingly endangered if the wanton sand harvesting is not stopped.
Retired teacher Leonard Ating'a stands at the edge of his farm wondering how his parcel that used to stretch into the river has shrunk in size over the years.

"My parcel used to go beyond where I stand now, but the river, over the years has kept moving farther into my land and that of my neighbours here," says Ating'a, 81.

Just next to him, there are two huge gaping holes on the farm. They caved in as a result of sand harvesting.

How the harvesters dug out the sand underneath his vegetables farm is beyond his understanding.

Thanks to efforts being made by Otieno on the adjacent parcel being turned into an eco-tourism resort by planting of trees and grass along the hitherto destroyed shores of River Kibos, there is hope for Ating'a and his neighbours.

"I had no idea about climate change and how sand harvesting was encouraging the dire situation. I was only fending for my family.
Now that I know better, I am leading the fight to end sand harvesting here and ensure we restore our natural resources and the ecosystem here," says Otieno.

In 2009, the Kenyan government issued sand harvesting guidelines that were meant to regulate the industry.

This was as a result of the widespread problems caused by sand harvesters at river banks, wetlands and even road reserves.

The National Environment Management Authority (NEMA) Kisumu County Director Tom Togo says there are plans to turn the guidelines into law to make them more effective.

"The guidelines as they are, are not binding legally and those who infringe them cannot be held liable. But if we successfully turn them into law, we shall be able to deal with the issue of wanton sand harvesting effectively," says Mr Togo.

Photo Credit | John Riaga

What remains of the land after years of non-stop sand harvesting in Komonge Village, Kisumu County.

Mr Tom Togo, Kisumu County NEMA boss

Oloo says that while it would take time to reverse the effects of climate change, it is important for people to resort to adaptation measures to try and mitigate those effects.

"It is not possible to eliminate climate change; we can only adapt," he says.

Oloo says 90 per cent of natural disasters around the world are climate change related. Since human activities are the main causes of climate change, it therefore means that human beings must be at the centre of efforts to mitigate it.

Why humans must review their relationship with nature as climate change wreaks havoc

By Joyce Chimbi | j.chimbi@gmail.com

Photo Credit | Joyce Chimbi

Dry rivers and shallow wells characterise the terrain in the Southeastern parts of Makueni County.

Ravaged by a severe drought where temperatures rose to heights not experienced in the last 40 years, residents fear that serious effects of climate change may have accelerated sooner than expected.

That even bringing down global warming to less than 1.5 degrees Celsius as espoused in the Paris Agreement will no longer be enough is a reality slowly dawning on the people.

"In October, we were feeding our cows that had just calved porridge because we had nothing else to offer and they could not walk for long distances looking for water and pasture," says Morris Muli from Usungu village in Makueni.

At the height of the drought, from February to October 2022, along the Garissa-Nairobi highway, children waited under the scorching sun for left-over food items and drinks from travellers.

Animal carcasses and goats at the verge of death from lack of water and pasture could also be seen along the highway. Even in the face of looming threat to life from the most prolonged dry spell, pastoralists do not consume dying livestock.

Kenyan government data shows that across Arid and Semi-Arid Lands (ASAL) spanning over 23 counties, the drought killed an estimated 1.5 million livestock.

"Worse still, the country's place as a biodiversity hotspot is under threat. We have seen a serious decline in wildlife, especially between February and October 2022. One of the big fives was devastatingly ravaged by the drought," says John Mwangi Gicheha, a biodiversity expert and independent researcher.

Experts say pastoralists are on the edge of climate change adaptability due to perennial prolonged droughts.

Kenya Wildlife Service (KWS) released a worrisome report that an estimated 205 elephants died in just nine months. This, Gicheha says, has heightened fears that the country's broken relationship with nature is reaching a point of no return.

The country's first ever National Wildlife Census report finalised in August 2021 pointed to signs of trouble.

For instance, at least five wildlife species are critically endangered and could disappear in the immediate future. There are just 1,650 Tana River Mangabey, 897 black rhinos, 497 Hirolas, 51 Sable antelopes and 15 Roan antelopes.

These findings are in line with the 2022 Living Planet Index, which analysed approximately 32,000 populations of 5,230 species across the world. The Index was conducted by the World Wide Fund for Nature (WWF), an independent conservation organisation.

It is the most comprehensive report on the state of global vertebrate wildlife populations and it makes a startling revelation, that the world's wildlife populations have declined by 69 per cent since 1970.

The greatest regional decline in wildlife population is in the Latin America and the Caribbean region whose average population decline is 94 per cent.

Africa comes second with a 66 per cent decline in its wildlife populations over the past 52 years and across the board, the poor and marginalised remain highly vulnerable and most affected by the decline.

By tracking trends in the abundance of mammals, fish, reptiles, birds and amphibians around the world since 1970, a disturbing image emerged; that one million plants and animals are threatened with extinction. Worse still, 1-2.5 per cent of birds, mammals, amphibians, reptiles and fish have already gone extinct.

Key findings include revelations that monitored freshwater populations are hardest hit as there is an alarming decline of 83 per cent in the last 50 years, more than any other species groups.

Overall, the global abundance of 18 of 31 oceanic sharks and rays declined by 71 per cent since 1970. By 2020, three-quarters of sharks and rays were threatened with an elevated risk of extinction. Kenya is currently home to nine whale sharks, two blue whales and 17 tiger sharks, according to the National Wildlife Census.

The decline in freshwater population is mainly caused by habitat loss and barriers to migration routes, which account for an estimated half the threat to these populations.

Photo Credit | WWF - Kenya

Kenya's endangered iconic big five. Almost 200 elephants were lost to drought from February to October 2022.

Further, only 37 per cent of rivers that are longer than 1,000 kilometres remain free flowing in their natural state.

"The crises that are currently unfolding are the climate change and loss of biodiversity. In Kenya, we are talking about the endangering of mangroves and consequent loss of marine ecosystem, overfishing and the endangering of wild tree species due to overlogging," says Timothy K Orare, a university lecturer.

A report by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) revealed that illegal trade in wild species represents the third largest class of all illegal trade, with estimated annual values of up to US$199 billion (Ksh24 trillion). Timber and fish make up the largest volumes and value of illegal trade in wild species.

Orare says there is an urgent need to redefine "our relationship with nature".

"Nature does not solely exist for our own benefit as human beings, nature is not an infinite resource. One in five people globally directly rely on wild plants and algae for their food and income. On current trajectory, we are witnessing a collapse of livelihoods and economiesm," he says.

Orare says people must learn to live as one with nature, or living in accordance with nature.

"We are currently living from nature. Prioritising short-term economic gains and profits but the consequences are unfolding right before our very eyes. Our survival as human beings in closely intertwined with nature," he says.

Gicheha echoes other biodiversity experts in cautioning against dominating the natural world irresponsibly, taking nature for granted, exploiting of resources wastefully and unsustainably, and distributing these resources unevenly because these actions have life altering consequences.

Photo Credit | Tebby Otieno

Alfred Wanzala (centre) from JKUAT's directorate of research, production and extension with his colleagues at the Nairobi International Trade Fair.

African indigenous vegetables fight to survive climate change impact

By Tebby Otieno | tebbyotieno62@gmail.com

Sylvia Munyoki, 44, walks around the Nairobi International Trade Fair grounds with hopes of getting more indigenous seeds to expand her vegetable kitchen garden.

Her passion for indigenous vegetables began when she grew up in Makueni County. She recalls her parents plucking and cooking indigenous vegetables that grew on their own.

"I like indigenous vegetables so much that I share them with rabbits. These are the vegetables that grow naturally in the forests, and I adore them," she says.

Munyoki is, however, disturbed that the vegetables are no longer available. She decries the fact that the seeds have gone missing, and was therefore happy to obtain some during the agricultural exhibition.

"I live on a quarter-hectare plot of land and grow a lot of indigenous vegetables. I have a variety of indigenous vegetables in my kitchen garden, that is why you see I have purchased the African vine spinach, African kale, and pumpkins that I am going to plant," she says.

The difficulty in obtaining indigenous vegetable seeds is not new. A survey carried out by researchers at Jomo Kenyatta University of Agriculture and Technology (JKUAT) on African Indigenous Vegetables (AIVs) showed that the seeds are disappearing because the vegetables no longer grow on their own.

"We did sampling of seeds from different varieties of vegetables, including African night shade (managu), the spider plant (saga), jute mallow (mrenda), amaranth specifically the ododo one because amaranth has so many lines, nderema, mitoo and pumpkins and our own Ethiopian African kale or kanzira," says Alfred Wanzala from JKUAT's directorate of research, production and extension.

The project's nationwide survey prioritised the Western and Nyanza regions, which have the highest prevalence of AIVs. The various samples collected were taken to the university, where researchers conducted studies with various parameters. The survey included questions about how they grow, which climate they prefer, what they need, and the best conditions for growing AIVs.

The findings led to JKUAT researchers developing some superior seed varieties, which they then forwarded to the Kenya Plant Health Inspectorate Services (KEPHIS), the country's organisation tasked with quantification and certification.

This resulted in the release and gazettement of nine AIV seed varieties that can be rolled out and distributed to farmers for proper vegetable production.

The studies by JKUAT also discovered that AIVs lack proper production protocols, farmer neglect, and recipes that highlight the key nutrition elements obtained from AIVs, which are all issues that the institution has since resolved.

Photo Credit | Tebby Otieno

Indigenous vegetables displayed by JKUAT at the Nairobi International Trade Fair.

According to Wanzala, JKUAT is currently running a project in which a team of agricultural experts visits small-scale farmers and trains them on planting protocols through on-site farm demonstrations and the provision of proper planting materials. This, he says, helps farmers to properly prepare land, do proper demarcation, proper spacing, and use proper quantity of seeds, as opposed to traditional methods in which farmers broadcast seeds and end up wasting a lot or underutilising them.

"For proper usage of seeds in a plot measuring 10 by 10 metres you only need 25 grams of most of these vegetables and you will get maximum production. It's recommended that you do 30 centimetres from one line to another and 20 centimetres from one seed to another," Wanzala explains.

The research also showed that AIVs are overlooked by stakeholders who believe they belong to poor families, despite the health benefits they have.

Wanzala, however, is pleased that this is changing, with five-star hotels already beginning to include them in the diet. JKUAT is also involving schools in their outreach programme to encourage students to form 4K clubs and plant AIVs.

"We want people also to be independent because the complaints we have been getting from farmers is that they go to agro-vets, buy seeds but they do not germinate. At JKUAT, we train farmers on a whole package from land preparation, planting, vegetable maintenance, harvesting to recipes," he says. At the end, the farmers regenerate their own seeds.

The research also shows that nine in every 10 AIVs farmers depend on regenerated seed.

Wanzala says through proper farming, farmers will harvest enough of the vegetables that they will eat, sell and also get bulk seeds for own consumption and surplus to share with their neighbours.

Mary Abukutsa, a professor of horticulture and researcher at JKUAT, says climate change has an impact on AIVs, while the vegetables can also be used to mitigate climate change impacts.

"When there is drought, we do pre-season agriculture by putting some of the climate-smart technologies in place to ensure that you give enough water to the plant to produce," says Prof Abukutsa.

The issue of perishability also arises as vegetables grow well during the rainy seasons when farmers would have vegetables in plenty while during dry season they face shortages.

But with the findings, JKUAT has solved the challenge by coming up with the preservation methods.

Through this solution the vegetables are dried using a solar dryer before packaging them to ensure they are in optimal condition that make them fit for consumption even one year after harvesting without being frozen.

Prof Abukutsa encourages farmers to use the rain by planting indigenous vegetables, as some parts of Kenya are already receiving rains following a prolonged drought that resulted in food shortages.

"For example, cabbage takes six months to get ready while AIVs take only a month to be ready. So, even with a little rain, you will still have your harvest. Some of them are also drought resistant," she says.

Through this solution the vegetables are dried using a solar dryer before packaging them to ensure they are in optimal condition that make them fit for consumption even one year after harvesting without being frozen

Photo Credit | James Wakibia

Residents wade through floods caused by the swelling of Lake Nakuru.

Not state, not people, 'can address the real loss and damage'

By Ann Mikia I annmikia@gmail.com

The swelling of Lake Nakuru and eventual displacement of people living not too far from its shores was nothing like anyone had seen in decades. But here we were in 2020, reporting cases of lakes merging, homes, hotels and businesses being submerged, and more scary scenes that threatened the ecosystem.

In Mwariki, not too far from Lake Nakuru, Damaris Wairimu, 60, and Anne Wanjiru, 70, had to flee with their entire families to higher ground, as they watched the water body swell and slowly but surely invade their houses, rendering then victims of climate induced displacement.

"I had lived there since the 1970s and never seen anything like that. Our parents worked for the colonialists. Before the white people left, they subdivided the land to their employees. That's how we got ours," said Wairimu, adding: "I used to farm and grow vegetables, but since we were displaced, challenges have not ceased. Now I have high blood pressure."

Wanjiru and several residents of Mwariki were at first reluctant to move. It took the waters to get right inside their homes for them to get the message that something so serious was happening. "We first wondered where we would go, what to carry and what not to. It was until the water levels rose and our beds were submerged that we fled. We lost a lot," she narrated.

Part of the loss was the two acres on which Wanjiru grew vegetables and spices. It, too, was swallowed. As they escaped, they did not salvage much. It was a true case of everyone for themselves and God for all. "We escaped with the clothes we had on. At my age, what could I do? Everyone was carrying only what they could. Well-wishers on higher ground accommodated us as we figured out what to do," said Wairimu.

The phenomenon was not peculiar to Rift Valley lakes. Down at the Lake Victoria Basin, there were horror stories. The lake literally invaded people's homes, and displaced them. Hippos and snakes roamed freely, even to where the displaced found refuge. Livelihoods were lost. No one could fight back.

Henry Mangome, who spent at least Sh7 million USD 56,800 to construct a house in his ancestral home, saw the swelling Lake Victoria turn everything upside down. "My house's walls cracked. A structural engineer examined it and recommended that it be brought down. He said the swelling of the lake had negatively affected the walls, and also suspected that a movement underground may have interfered with the house's foundation, hence distabilising the whole structure," said Mr Mangome.

The lake water has since receded, but many are still counting losses occasioned by its swelling.

"I had spent about Sh7 million USD 56,800 on the house. I'm still servicing the loan, yet I will have to start from scratch. See what climate change did to me? Now you can imagine how much more poor families living around the lake suffered," said Mr Mangome.

Overall, populations in Kisumu, Siaya, Migori, Busia, Homa-Bay, Baringo, Tana River, Taita Taveta, Nairobi and Nakuru suffered unprecedented flooding in 2000, for some, worse than had been witnessed in almost a century. Some victims may never recover the loss and damage that ensued.

Dr Emmanuel Okunga, an epidemiologist at the Ministry of Health, says of the effects of climate disasters: "When people lose livelihoods, they may not feed well, and cases of malnutrition arise. Gender based violence is prevalent, not forgetting the water borne diseases."

Mr Januaris Kasanga of Kenya Red Cross Disaster Management Department decried the health risks resulting from contamination of water by submerged toilets during flooding.

"Our response entails giving water purifiers and treatment chemicals for the Water, Sanitation and Health (WASH) programme. In flooding situations, you cannot dig pit latrines; so we also give makeshift toilets. We now focus on localised solutions to local problems. We train community-based disaster responders on early warning and response," said Mr Kasanga.

Lenencia Nyang'ori, a Red Cross disaster committee members in Busia, says it was not easy to convince possible flood victims to leave to higher ground. "After we get early warning from the Meteorological Department about imminent flooding in Budalangi, we advise residents to move to higher ground. Some refuse to leave. And because they are given chance to choose where they prefer to be housed, some spouses go to separate places. This in itself poses a new challenge," says Ms Nyang'ori.

Photo Credit | James Wakibia

People abandoned their homes after they were submerged by floods caused by the swelling of Lake Nakuru.

Budalang'i, which had been synonymous with flooding during long rains, was not spared by the backflow of Lake Victoria. Busia Disaster Management Committee chairperson Peter Malomba says: "During the backflow many residents lost property and their houses destroyed."

Normalcy has returned in many affected parts in Rift Valley, but, according to Red Cross, about 15 households are still supported in tents.

In November, the 27th Conference of Parties to the United Nations Convention on Climate Change (COP27) in Sharm el Sheikh, Egypt, closed with a landmark breakthrough; an agreement to provide Loss and Damage funding for countries hit hard by climate disasters that stretch adaptation limits.

But Mr Mangome , who was at the COP27, says even with the breakthrough, it is still tough. "No compensation will be commensurate to the real losses incurred," he says.

For Busia Deputy Commissioner Grace Ouma, even Government cannot do much. "The government cannot compensate flood victims, but only assists them with the help of other partners by providing just the basic needs."

Normalcy has returned in many affected parts in Rift Valley, but, according to Red Cross, about 15 households are still supported in tents.

General population, tourists want trophy hunting banned, survey reveals

By Omboki Monayo|omboki2725@gmail.com

On August 10, 2022, the world marked World Lion Day. In Kenya, the day went by largely unannounced, as the country's voters waited for the results of the August 9, 2022 General Election.

Along with South Africa, Kenya is one of the 33 countries that are home to a considerably large population of lions in Africa.

Among African nations, Tanzania is home to an estimated 50 per cent of the lions in the wild, with Kenya estimated to have some 2,489 lions. In total, there are 16,000-30,000 lions living in the wild worldwide.

Lions are also found in smaller populations spread across Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Congo, Ivory Coast, Ethiopia, Gabon, Ghana, Guinea, Guinea-Bissau, Malawi, Mali, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Somalia, Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia and Zimbabwe.

The lion population in South Africa is currently estimated at 2,300. According to the Kevin Richardson Foundation, hunting leads to the killing of around 1,000 lions each year.

In SA, between 8,500 and 10,500 lions languish in captivity at nearly 400 commercial breeding and display sites.

Photo Credit | MESHA

A Kenyan science journalist Wanjiru Macharia poses for a photo at a wildlife sanctuary. Hunting in South Africa, analysts say, leads to the killing of around 1,000 lions each year.

In 2017, about 800 lion skeletons were exported to the Far East for the purpose of making traditional medicine such as bone wine.

Scientists have predicted that lions will become extinct by 2050 if nothing is done to stop the current decline in population.

The magnificent beasts are already extinct in 26 countries where they once roamed.

Public opinion is, however, turning against the lucrative and commercial activity that has drawn sport hunters to the country for many years.

New research by World Animal Protection shows a growing number of South African citizens and international tourists want to see trophy hunting stopped and replaced with wildlife-friendly activities.

For more than 70 years, the animal welfare charity has been campaigning for a world where animals live free from cruelty and suffering.

It hopes to "give wild animals the right to a wildlife by transforming the broken systems that fuel exploitation and commodification" and also "stop the devastation of natural habitats".

World Animal Protection released research into public attitudes towards trophy hunting on World Lion Day.

The survey interviewed 10,900 people from around the world, including South African citizens and international tourists from countries who most frequently visit the country.

Key findings from the research revealed that 84 per cent of international tourists agree that the South African government should prioritise wildlife-friendly tourism over trophy hunting.

Photo Credit | Aghan Daniel

For more than 70 years, the animal welfare charity has been campaigning for a world where animals live free from cruelty and suffering.

Some 74 per cent of international tourists agreed that making trophy hunting a key tourist policy will damage South Africa's reputation, while 72 per cent indicated they would be put off from visiting the country altogether.

An estimated seven in 10 South African citizens agree their country would be a more attractive tourist destination if they banned trophy hunting.

Nearly three quarters or 74 per cent of South African citizens agree that trophy hunting is unacceptable, particularly when there is poor utilisation of wildlife-friendly tourism alternatives.

Trophy hunting represents less than two per cent of the country's economy.

It is estimated that the conversion of approximately 21 million hectares of land currently utilised for trophy hunting in South Africa to non-lethal tourism would create more than 190,000 jobs.

This represents over 11 times more than the 17,000 livelihoods that presently depend on trophy hunting.

According to research done in Tanzania by Packer et al. and published in 2011, higher rates of decline in lion and leopard populations have been observed in areas with trophy hunting compared to areas without it.

As the consultation on the draft Conservation and Sustainable Use of South Africa's Biodiversity White Paper concludes in September, there is an increased chorus of voices agitating against the slaughter of animals in the name of trophy hunting.

Travel companies from around the world have added their support to the joint statement, many headquartered in the countries where most international tourists travelling to South Africa hail from, including the US, UK, Australia and Brazil.

In a signed joint statement made to the South African government, TripAdvisor, Booking.com and Expedia Group are some of the world's largest travel companies urging the government to publicly pledge an end to trophy hunting.

The giant tour firms are rooting for a future South African tourism industry that will be more "wildlife friendly". It is their hope that SA will do away with sport hunting to protect its wildlife population.

Signatories agree that trophy hunting is cruel and unacceptable.

They believe that responsible wildlife-friendly tourism, which is a humane, sustainable and under-utilised alternative, can provide enough income and incentives to communities to conserve the animals without killing for purported sport and entertainment.

Coming just a few weeks after the release of the WAP report, the joint statement from some of the leading global tourist companies is clear that trophy hunting firmly belongs in the environmentally harmful and unsustainable past.

Nick Stewart, who is the Global Head of Campaigns for Wildlife at World Animal Protection, said the report had provided further proof on why a ban on hunting would result in higher tourism income for South Africa.

"Here is yet more evidence that developing wildlife-friendly tourism and the removal of cruel wildlife exploitation like trophy hunting and captive lion breeding, has the potential to enhance South Africa's international reputation as a global leader and destination for wildlife-friendly experiences," he said.

"We are now hearing a deafening call for change from tourists and travel companies alike. They are clearly supporting a move to protect South Africa's iconic wildlife through alternatives that don't harm and kill animals, such as responsible wildlife tourism. Listening to this call will make South Africa a more attractive destination of choice for responsible travellers as well as tour operators."

The report revealed universally strong opposition to the bloody sport and a desire to finance the protection of the nation's iconic wildlife through non-lethal alternatives such as responsible wildlife tourism.

The animal rights charity is asking the public to add their voice to the 60-day public consultation on the white paper and demand a genuine wildlife friendly future for South Africa.

Photo Credit | Tebby Otieno

Benjamin Karissa holds a mature crab.

Ecotourism: How conservationists earn a living from crabs and mangroves

By Tebby Otieno | tebbyotieno62@gmail.com

Crab is probably one of the most delectable dishes you will order when you visit the Dabaso Crab Shack Restaurant. Due to the abundance of seafood options, diners from the Coast region frequently travel to Mida Creek in Watamu, Kilifi County.

This mangrove treetop restaurant is one of the initiatives run by the Dabaso Creek Conservation, well-known for its aquaculture. According to Benjamin Karissa, as part of their conservation programme, the crabs are taken young and fattened inside cages.

Karissa says there is high demand for crabs globally that can only be met through farming rather than wild fishing, which may endanger the species in the ocean.

The crab fattening project began in 2004, and has since gained popularity among locals and visitors. Once at the farm, the crabs ordinarily feed on the ecosystem.

Members of the group catch the crabs themselves or hire fishermen to bring them young ones weighing nearly 300g. They then confine them in cages and feed them with fish trash or gastropods daily to fatten them.

"Moulding means they're growing, and by three months, a 300g crab will weigh 600g, which is the standard market size," he says, adding that the crab cages are in mangrove areas.

Crab fattening comes with difficulties though. Mr Karissa says the plastics used to mould the crabs in the cage are not very strong and that as the crabs grow larger, they can cut them and escape. Plastic cages, which are deemed more durable, were introduced recently.

Crabs make up 20 per cent of all marine crustaceans caught, farmed and consumed worldwide, totalling 1.5 million tonnes annually. While crabs produce and carry billions of eggs, Karissa says Kenya has yet to establish a hatchery. This is because crabs require specific equipment, ecological parameters and standard conditions to hatch. According to Karissa, the value of crabs will increase significantly if the hatchery problem is solved.

"One kilogramme of fish will cost Sh400, while that of crab from the farm will be Sh1,000, assuming they are two pieces. More value is now coming from the time we take it to the restaurant's kitchen because a whole crab is sold at Sh1,800 if it is less than 500g and Sh3,000 for a plate if it is a kilogramme," Karissa says.

Dabaso Creek Conservation began as a mangrove conservation group before it began crab fattening and the entire seafood business initiatives. When they noticed that the mangrove trees were attracting tourists, they decided to combine conservation with enterprise development. As a result, they now operate this mangrove treetop restaurant and a floating restaurant at the sea selling crabs and seafood, as well as continental food.

According to Karissa, this is a win-win situation for the environment and conservationists as it utilies the ecosystem in a more beneficial way and earns them a living.

"We get crab from the wild, feed it with something that we don't buy because the fish trash comes from the kitchen as waste. The crabs love it," he says.

Photo Credit | Tebby Otieno

Dabaso Creek Conservation member, Benjamin Karissa, at the crab cages at Mida Creek in Watamu, Kilifi County.

Dabaso Creek Conservation is one of the pioneer community groups that have embraced conservation and also developed self and sustainable enterprise based on the Blue Economy. The group has also started engaging youth in the venture as a succession plan.

Women here however still have difficulty in accessing the sea to catch fish or young crabs. "Before I joined this group, one of the Mijikenda cultures did not allow women to enter the sea or any conservation places. Women did not know the meaning of conservation. So we joined men who started this group because there was the question of gender consideration," Mercy Karissa said.

She told Sayansi there are now 15 women in the Dabaso Creek Conservation group who also participate in planting and protection of mangroves.

"If we did not participate in this conservation activity, our forests would by now be gone. Before we came here mangrove trees were being cut due to their value. Now there is security and when we see someone destroying our trees we report them to our male group members," she said.

Mercy, 49, and other Mijikenda women in the group are happy to have equal chances as men in the group. The mother of seven has been working here for at least seven years.

"When a visitor finds me at the farm I can tell them the sex of the crab they are looking at. Before I came here I used to sell fish and vegetables to earn a living. The income was little, as fishing also has its challenges," she says.

Meanwhile a Blue Empowerment Project is working on climate smart modalities to address barriers faced by fisherwomen in the country's coastal region.

The project aims to achieve this through adoption of climate-smart integrated multi-trophic aquaculture (IMTA) of seaweed and fish for improved livelihoods and resilience. The initiative brings together leading research organisations such as African Centre of Technology Studies (ACTS), Kenya Research and Development Institute and Kenya Marine Fisheries Research Institute (KMFRI).

According to Dr Linus Kosambo, a senior research scientist in the food technologies research centre from Kenya Industrial Research and Development Institute (KIRDI), the Blue Empowerment Project research will attempt to work with groups to see opportunities for women and the vulnerable, and the empowerment opportunities available.

"Through this new Blue Empowerment project we will look at the the barriers for further development and the opportunities. We'll also consider technological innovation on how we can improve their technologies for fish and crab farming to ensure they are much more productive and efficient in their production systems," says Dr Kosambo.

He says Dabaso Creek Conservation group members are self-sustaining and example of how communities can interact with key stakeholders. For instance, he says, the group is partnering with Kenya Wildlife Service, the Forestry Service, and the county government for sustainable conservation and utilisation of the Blue Economy resources.

"We'll also look at opportunities and business models that can enhance their productivity and profitability. Researchers will start a survey to see what is happening and determine the issues and then design the best intervention pathways to better the lives of this community.
They already own good trajectory in as far as conservation and enterprise development is concerned," he notes.

Mangrove trees are indigenous and only grow along the shoreline. KFS recognises coastal communities protecting mangroves. Mercelyne Khalumba, in charge of forest plantation management, says such programmes promote ecotourism and encourage conservationists, which earns them income.

"Mangrove trees are important because as they grow they also clean the water as they fix the carbon, also helping in tackling global warming. They grow very fast, which means they are fixing carbon quickly," she said in an exclusive interview with Sayansi during a science café organized by the Media for Environment, Science, Health and Agriculture at the Kenya Forest Service offices.

Photo Credit | MESHA

Margaret Wanjiru leads an excursion into Karura Forest, one of Kenya's iconic urban green spaces with a monthly visitors entry of nearly 16,000.

Race to protect urban green spaces on amid appetite for real estate profits

By Joyce Chimbi | j.chimbi@gmail.com

Conservationists are rushing against the tide in a bid to protect urban green spaces against encroachment.

This is a mid the increasing pressure to turn every open space, especially in towns, into a concrete jungle for short-term profits and economic growth.

Margaret Wanjiru, a County Forest Conservator at the Kenya Forestry Service (KFS) in Nairobi, says that with the rising urban population that has led to urban physical expansion, the role of green spaces as a healthy outlet for city dwellers cannot be overemphasised.

"We have many urban green spaces in Kenya as a whole and within Nairobi in particular. These spaces are very important to our environment and surrounding communities and they remain protected from external influences that could lead to their destruction," says Ms Wanjiru.

While it is documented that urban green spaces are a source of environmental, social and health benefits, providing inspirations and generating revenue through ecotourism, environmentalists and conservationists remain vigilant against their encroachment.

Wanjiru says urban green spaces are important because they also enable cities to contribute to the larger biodiversity agenda.

In Karura Forest, for instance, one of the green spaces in Nairobi, it is evident that urban biodiversity is under threat and efforts are in place for its protection.

Within the forest and along the cool picnic trails, visibly placed signs warn visitors against carrying any plants, animals or any other material from the forest into the outside world.

"Carrying any material outside the forest would be akin to biodiversity piracy and this is an offence. The forest and everything therein should remain within the protected fenced area," said James Mwang'ombe Mwamodenyi, Principal Conservator of Forests at KFS.

The Kenya Forest Service is a State Corporation established under the Forest Conservation and Management Act, 2016.

Its mandate and functions include to enhance development, conservation and management of Kenya's resource base in all public forests and assist county governments to develop and manage forest resources on community and private lands for equitable benefit of present and future generations.

Karura Forest remains tightly in the grip of KFS. The estimated size of the urban forest is 1,041 hectares, consisting of three parts separated by Limuru and Kiambu roads. It is the largest preserve in Nairobi and remains a shining example of green building and sustainability.

Records by the Kenya Forest Service show that the forest, located just two kilometres from Nairobi's Central Business District, is a biodiversity hotspot for 200 bird species and iconic mammals such as the colobus monkey.

Within the forest, visitors are treated to wetlands, a majestic waterfall, a variety of indigenous tree species, a water fall, birds, butterflies and wildlife habitats.

Besides its relaxing recreational value, as one of the remaining local indigenous forests, Karura is a critical carbon sink and is considered the lungs of an industrial powerhouse that is Nairobi.

Environmentalists at Kenya Forest Services therefore stress that the forest is instrumental in Kenya's agenda to bring harmful greenhouse gas emissions to below 1.5 degree Celsius.

In the Nationally Determined Contribution (NDC) to limit global warming under the Paris Agreement on Climate Change, Kenya has committed to abate greenhouse gas (GHG) emissions by 32 per cent by 2030.

In all, experts at KFS such as Mwang'ombe says urban areas can successfully reach ecological safety where environmental and ecological factors are prioritised alongside economic benefits.

Why we need PELIS programme in forest conservation and protection

Photo Credit | MESHA

Mercelyne Khalumba, forest plantation and management officer, during a biodiversity science cafe organised by MESHA and Kenya Forest Service in Nairobi.

By Clifford Akumu | akumu.clifford@gmail.com

In September 2022 when President William Ruto was in New York pleading for more support to tackle climate change, his deputy Rigathi Gachagua made announcements on lifting the ban on the Shamba System (which has been blamed for wanton destruction of the country's natural forests).

The debate would later take a new twist, with conservationists and communities depending on indigenous forests for livelihood weighing in on the matter, warning that the gains made in increasing forest cover would be lost.

However, it's not the first time the Shamba System has met heawinds. It was first banned in 1986 but the ban was lifted in 1994 before President Mwai Kibaki banned it again in 2003, citing abuse by Kenya Forest Service (KFS) officials and timber millers.

The Jubilee administration also outlawed the system in January 2021, citing environmental degradation, three years after imposing a moratorium on logging in public and community forests over the same concerns.

Our reporter Clifford Akumu had a chat with Mercelyne Khalumba, forest plantation and management officer, during a biodiversity science cafe organised by MESHA and KFS recently to demystify the misinformation surrounding the Shamba System or simply PELIS.

What exactly is PELIS approach?

It refers to Plantation Establishment and Livelihoods Improvement Scheme. Through the Forest Mangament Act of 2016, the Kenya Forest Services is allowed to collaborate with communities adjacent to forests through Community Forest Associations (CFAs).

Under this scheme, we invite the communities that live around the forests who have registered themselves into CFAs to come and work with Kenya Forest Service in the forest establishment plantation.

So, as we plant the trees, they also raise their food crops in the same unit of land.

Could you tell us about the origin of PELIS?

The PELIS system is not entirely a new concept as it was formerly known as the Shamba System before being re-branded.

PELIS traces its way back to 1902 when farmers were being allowed to cultivate crops within the forest settings. In Kenya, the colonial administration introduced the system in 1910 to provide raw materials for the timber industry and reduce pressure on natural forests. The name changed to Shamba System in the early 1990s.

In 2010 the name further changed to non-residential cultivation. But from 2010 to date the name changed to Plantation Establishment and Livelihoods Improvement Scheme(PELIS). Only five per cent of forests is under forest cultivation (with food crops) the rest of the 95 per cent is indigenous plantation.

How is PELIS conducted?

After signing agreements with the CFAs, our forest station managers work with their officials to designate certain areas as plantation areas.

Photo Credit | SMESHA

A worker prepares soil for seedlings at Karura Forest nursery in Nairobi.

The CFAs then allocate these plots to the communities, particularly giving preferences to the poor people who have no land before they move to the other groups of people. The rest are normally put through balloting. The size of the plot they receive is normally half an acre where the demand is high, but where it's low it can go up to between one and two acres.

The Kenya Forest Service (KFS) raises the seedlings in the nurseries, while the communities assist in planting and taking care of the trees until they reach a height where they cannot exist with other crops – roughly after three or four years.

In PELIS, we have the farmer and KFS working in the same unit of land. In this same unit of land people have different interests; the farmer wants food and KFS wants the trees to grow. KFS plant mainly exotic tree species.

How much land in the country is under PELIS?

Currently we have about 10,000 hectares under PELIS. The trees are in year one, two or three. Kenya's forest cover now stands at 8.83 per cent from 5.99 per cent in 2018 while tree cover is at 12.13 per cent, according to the newly released National Forest Resources Assessment Report 2021.

What are the impacts of PELIS scheme on forest conservation and protection?

When the farmer is taking care and cultivating the trees, the government is saving on the costs while the farmer is getting food and improving their livelihood (as they weed the food crops they also weed the trees, leading to a symbiotic relationship). It also leads to a high survival rate of trees compared to when they are planted in the grassland without any care.

Which type of crops can be grown under the PELIS programme?

Farmers are encouraged to grow low-cover crops such as kales, beans, carrots, Irish potatoes and garden peas. Growing of maize is banned because it slows down the survival of the trees. Studies conducted by KFS has shown how farmers are reaping and changing their livelihoods from the earnings they get from the PELIS programme.

There has been a raging debate about the reintroduction of Shamba System. What is the correct position in this cloud of misinformation?

PELIS is still on. Because of the policy directive from the government, we stopped cutting plantation trees. Farmers have planted crops in the spaces where the trees had been cut. We cannot allow them to go and plant their crops in the plots with indigenous tree species unless we cut them again.

We hope the logging ban will be lifted so that we harvest the trees then there will be space. But we have not stopped.

Where do the mature trees from PELIS programme go to?

When these trees mature, saw millers who are e-registered and pre-qualified bid to purchase them. Once the trees are harvested under the sustainable harvesting plan (contained in the forest plantation management plan), the area is available for cultivation by farmers as they raise another crop of trees.

What about your call to increase forest cover across the country?

I advise people to plant trees in their land. The government's gazetted forests are limited, even if we fill them we might not reach the target yet. But we now need to go to the rangeland and farmland to plant trees. For example, if your land is small, you can plant along the boundaries or shade trees in your compound.

Photo Credit | Joyce Chimbi

Through PELIS, farmers enter into an agreement with the Kenya Forestry Service to plant trees as they farm towards increasing forest cover.

Shamba system a critical tool to increase forest cover in Kenya, says forest service

By Joyce Chimbi | j.chimbi@gmail.com

When Kenya's Deputy President Rigathi Gachagua recently said citizens should be allowed to cultivate crops on public forest land in the now-popular shamba system, there was an uproar across the country.

Gachagua had to retract his statement days later, saying he was misquoted and misunderstood.

The Kenya Forest Service (KFS) now says the shamba system, officially known as the Plantation Establishment and Livelihood Improvement Scheme (PELIS), is a critical tool to help increase forest cover in Kenya.

"Kenyans have become increasingly aware of the benefits of protecting our forests and are suspicious of any activities in and around the forest. But there is nothing suspicious or underhand about PELIS, it is an above board and proven strategy to improve forest cover and its success is well documented," says James Mwang'ombe Mwamodenyi, Principal Conservator of Forests, Head Biodiversity at KFS.

Mercelyne Khaluruka, who specialises in Forest Plantation Management at KFS, says PELIS is a "non-residential and subsistence cultivation in forests that promotes food security for forest adjacent communities while establishing forest plantations."

PELIS is a scheme introduced by KFS after the enactment of the Forest Act, 2005 to help increase forest cover and restore degraded forests across the country.

Explaining how the scheme works, Khaluruka says communities adjacent to a particular forest or people who live at a 10-kilometre radius from the edge of a forest, enter into an agreement with KFS and are allocated plots.

Once allocated, they plant seedlings until the allocated area forms closed canopy while planting food crops on the same piece of land over a period of three years when the trees planted can thrive on their own.

Significant success has been noted in farming of potatoes and beans. On average, one hectare can produce 138 bags of potatoes and 17 bags of beans. Studies are still ongoing to find safe approaches to planting maize alongside trees due to the risk of accidentally chopping down trees while cutting down maize stalks during harvesting.

Photo Credit | MESHA

Inside Karura Forest's picnic site. The urban green space is crucial in protecting Nairobi's biodiversity and offering a cool ecosystem for wildlife and visitors.

A case study of Malava Forest in Western Kenya showed that there was tremendous success in the implementation of PELIS. In 2001, the forest cover was estimated at 366.9 hectares and this rose to 481.4 hectares in 2016. The increment was driven by increased areas under plantation. Eric Nahama, a partnership and linkages officer at KFS, says partnerships between KFS and forest adjacent communities are critical as they have a stake in the management of forest resources.

Within the context of attaining the new government target of 30 per cent forest cover by 2030, Beatrice Mbula, Deputy Chief Conservator of Forests, Forest Advisory and County Liaison at KFS, says PELIS will play a critical role.

She says currently, Kenya's forest cover stands at 8.3 per cent on 5.3 million hecatres and tree cover is currently at 12.13 per cent on 7.3 million hectares.

An estimated 2.6 million hectares out of an overall 5.3 million hecatres of forest cover are under KFS. The remainder is on areas such as private and community land.

An estimated 10,000 hectares of land are under PELIS and a farmer can make up to Ksh300,000 (about $2,500) per year depending on the food crops. Experts at KFS say there is no doubt that PELIS brings a lot to the table in terms of food and revenue, and contributes to the country's target of significantly improving forest cover.

Mbula says the Kenyan map is more brown than green. She says this is unfortunate because there are countries that have achieved 95 per cent forest cover and there is no reason why Kenya should be lagging behind.

Data on forest and tree cover was revealed during KFS's survey conducted in 2021 providing a most recent account on where the country stands on its journey towards attaining the 30 per cent forest cover. It is the first time that Kenya collected data on tree cover.

Forest cover is obtained from wall-to-wall mapping of the country using satellite data, while tree cover is estimated partly using high resolution data and partly from field inventory data of Trees Outside Forest (TOF).

KFS has been producing one billion tree seedlings per year to provide quality and certified seeds for its own use and to meet the demands of Kenyans planting trees outside public forests. KFS has 300 tree nurseries, many more are in the hands of schools and women's groups.

Today, Mbula says there is a need to increase seed production to 1.5 billion per year if the country is to meet the 30 per cent forest cover by 2030. She says technology is in place through the Smart Technology App to monitor, report and act on changes in forest cover in real time, although this is still in its pilot phase.

An estimated 10,000 hectares of land are under PELIS and a farmer can make up to Ksh300,000 (about $2,500) per year depending on the food crops.

Photo Credit | MESHA

David Njuguna waters indigenous tree seedlings at Karura Forest nursery.

Kenya Forest Service to raise 15 billion tree seedlings in 10 years

By George Juma | jumageorge10@gmail.com

The Kenya Forest Service (KFS) plans to raise 15 billion tree seedlings at a cost of Ksh500 billion ($4 billion) in the next 10 years in a bid to achieve a 30 per cent forest cover by 2032.

KFS Deputy Chief Conservator in charge of Advisory and County Liaison Beatrice Mbula said the service currently has about 300 seedling nurseries.

Speaking during a MESHA science café at the KFS headquarters in Nairobi, Mbula said they are going to work closely with individuals, groups and county governments to raise the 15 billion seedlings within the targeted timeline.

Merceline Alumba, an officer in charge of plantation management KFS said they are also using the Plantation Establishment and Livelihood Improvement Scheme (PELIS) – also known as the shamba system – where communities living around forests are given a section of the forest to plant food crops as they manage the trees to increase forest cover.

Alumba said this strategy has worked and they now have 10,000 hectares of land under PELIS across the country.

She said the country will be able to achieve the 30 per cent forest cover by 2032 if all the stakeholders, including the general public, work jointly with the government.

Alumba said the land under the government owned forests is small and therefore the only way to increase the forest cover is through individuals' parcels.

Currently Kenya has a forest cover of about 8.3 per cent that sits on 5.2 million hectares of land. Out of this, the government manages 2.6 million hectares while the remaining 2.6 million is under private land.

Even as the government is moving with speed to plant more trees in a bid to deal with the effects of climate change, encroachment of forests remains a major threat to these efforts. Many forests in the country have been degraded by human activities such as logging.

Mbula said KFS is planning to use a digital system to monitor activities in forests. She said the technology, which is still being piloted in Kwale, is going to help the Service to monitor all activities in forests, including poaching, logging and planting of trees.

She said the technology presents a new opportunity in the fight against poaching in the forests across the country.

Mbula said the Kenya Forest Service is also planning to hire additional 2,700 rangers as directed by President William Ruto during Mashujaa Day celebrations on October 20.

Construction technology uses renewable energy to give slum dwellers affordable housing

By Tebby Otieno|tebbyotieno62@gmail.com

Photo Credit | Tebby Otieno

Eng Lazarus Asewe, project manager at Start Somewhere, inspects an ongoing construction at Kibera Slum, Nairobi.

Victor Ochieng lives in a single-room block house in Kibera's Mashimoni estate with his family. He was once homeless so he's happy to have a roof over his head.

"Life is still difficult, but once I'm in this house, I feel happy and sleep well," says Ochieng.

Before this house was built, the 32-year-old lived in a tin-walled shack, which he once lost to a fire. Fires are common in Kibera.

"None of us saved any of our belongings. All of them burnt to ashes. The fire started in one house and spread to nearly 100 other houses, leaving us at the mercy of well-wishers," he recalls.

Ochieng, who has lived in this informal settlement for nearly two decades, says he now feels more secure and comfortable. His house and the 13 others in this apartment block are weatherproof and fireproof, thanks to twist block building technology.

Twist block building technology is a pilot programme in informal settlements where fire problems have been the most difficult to overcome. Given that a majority of the houses in these areas are constructed of sheet metal, the technology hopes to address all these gaps and make life more comfortable for the average citizen.

"On June 5 last year, we had a fire that destroyed all 34 of our houses. So when we heard about this building technology that would save us and our tenants from future losses, we agreed to give it a try," says Nation Mutua, a house agent.

He says they changed a lot of things with the technique to make their tenants more comfortable. The previous house tenants, for example, paid Ksh2,500 a month for rent and a separate electricity bill. The houses also lacked toilets, so tenants had to rely on public ones, which they had to pay for each time they used them. The new units have addressed some of these challenges.

"These houses may appear small, but they are larger than the ones we had previously. Our tenants now pay Ksh5,000 monthly for rent and their houses are legally wired for electricity. They also have their toilets and bathrooms," Mutua.

"The doors have locks, as opposed to the earlier houses where tenants used padlocks that could easily be broken."

Besides the 14 houses in Kibera, the technological project is in Kawangware, another Nairobi slum, where the engineers are building 18 classrooms, an office, and a kitchen. The classrooms have a capacity of 20-30 students each.

"This was a community school, and it was in such disrepair. So, after purchasing this land, we decided to build the school to make our students feel better. Before these, our classrooms were of iron sheets that were in poor condition," says Walter Olando, Principal of Bethany Joy School.

Twist block is a German technology that is slowly being adopted in Kenya.

Milka Achieng, born and raised in Kibera, is the workshop manager. The 30-year-old has learned the technique and trains other youth here how to make twist blocks.

Photo Credit | Tebby Otieno

Milka Achieng, workshop manager at Start Somewhere, with the twist blocks.

"We first heat river sand and fine aggregate and do a simple calculation to determine the percentage of water. Then we thoroughly mix it for about three-five minutes. We then put it on a vibrator for three minutes. We the leave the mixture in the workshop store for 18 hours. The next day, we mould and do curing for 28 days before the blocks are ready to use," explains Achieng.

Concrete twist block is a construction technique that would prevent fires in densely populated informal settlements from spreading to neighbouring houses. If a fire breaks out in one room, the construction materials prevent it from spreading to the next.

The project of Start Somewhere Kenya Limited was established to ensure needy families have fordable housing that is also sustainable.

“We are proud to say that we are around 40 per cent cheaper than the normal machine-cut blocks or any other blocks in the market,” says Lazarus Asewe, project manager at Start Somewhere.

One twist block costs Ksh125.

"There are significant gaps in quality building materials and labour costs. These are the issues that this twist block technology is attempting to solve. Our columns fit in between the blocks for those buildings with formwork. As a result, you save money and time on the formwork, says Asewe.

“You can begin construction and move into your new home within three weeks. So we are working on a game-changing technology."

He says twist blocks have no mortar between them. That means a landlord or an individual homeowner can demount them without causing damage if they want to redesign or demolish their structure. He says after demolition, the blocks will still be in good condition and can be used elsewhere.

With discussions about climate change continuing ahead of the COP-27 in Egypt, the engineers here say they are doing everything they can to reduce their carbon footprint. This is demonstrated by the solar panels installed, which they use to produce the twist blocks.

"Now we only use small amounts of cement, but we're working on other technologies with other partners around the world to ensure zero cement and zero carbon on the production by using locally available materials like sand to cut carbon use by 100 per cent," says Asewe.

According to studies, cement production is damaging attempts to protect biodiversity. Environmental scholars say the damage occurs during ground excavation and in the process of refining the cement, as a lot of energy primarily derived from carbon-based fuel is used.

“We need to move away from the use of fossil fuels in our manufacturing processes,” says Amos Wemanya, Senior Adviser, Renewable Energy and Just Transitions at Power Shift Africa.

Wemanya says cement manufacturing has both health and social consequences on people's lives. In this regard, he urges stakeholders to support and embrace technologies centred on using renewable energy in construction.

"I believe that would aid in decarbonising the cement industry by shifting cement production away from coal and toward solar and wind energy, which can be stored in more stable hydrogen. As a result, we must abandon coal in favour of renewable energy technology," he says.

Kenya was the first country to implement the twist block technique and fully commercialised it three years ago.

The programme has grown from Nairobi's slums to Kisumu's Ahero and other rural workshops throughout Africa, including Cape town, whose workshops are to begin operation at the end of this year. The Kenya Bureau of Standards has tested and certified it.

Start Somewhere technology was selected to join the Sheltertech Sub-Saharan Africa accelerator in August this year due to the innovation and impact of the twist blocks system for the construction of durable and adjustable homes while also creating know-how and jobs within slum areas.

"We are thrilled to partner with the next generation of housing change-makers and to assist them in further developing and growing their technologies," said Maurice Makoloo, Habitat for Humanity's Africa vice president.

Photo Credit | AATF

Prof Joel Onyango of the University of Nairobi assures the public that the National Biosafety Authority will not license any GM crop or tech that is unsafe.

Mixed reactions as Kenya lifts ban on genetically modified crops

By Omboki Monayo|omboki2725@gmail.com

Kenya's October 3, 2022 decision to lift the 2012 ban on GM crops has raised mixed reactions among advocates and critics of the technology.

In November 2012, then Public Health and Sanitation Minister Beth Mugo banned importation of all Genetically Modified Organisms (GMOs) into the country.

Ten years later, President William Ruto has now overseen the opening up of the country to GM crop cultivation in a move that promises to unlock a multi-billion-shilling market for researchers and firms involved in the development, sale and marketing of genetically engineered seed and other planting materials.

Soon after the president's announcement, the Media for Environment, Science, Health and Agriculture (MESHA) hosted a panel of scientists from both sides of the GM divide in a cafe on October 4, 2022.

Horticultural trade specialist Dr Sarah Olembo said the decision was taken in haste, without public participation and in violation of the 2000 Catargena Protocols that require buffer zones between GM and natural zones.

The Cartagena Protocol on Biosafety to the Convention on Biological Diversity is an international agreement that aims to ensure the safe handling, transport and use of living modified organisms (LMOs) resulting from modern biotechnology that may have adverse effects on biological diversity, taking also into account risks to human health.

It was signed by 103 countries in 2000 and came into effect in September 2003.

"The protocols provided for the cultivation of GM crops in specific zones while creating buffer zones between them and other natural zones. This has not yet been done in Kenya," said Dr Olembo.

She said the country's phytosanitary standards that regulate the movement of seed and plant materials had not been fine tuned to accommodate the changes, terming them "an ambush on Kenya Plant Health Inspectorate Services (KEPHIS), the country's phytosanitary regulation arm.

Photo Credit | Aghan Daniel

At the farm: Some experts say GM technology provides a way out of the pressing perennial food shortage crisis.

"I lack confidence in the current capacity of KEPHIS to handle the introduction of GM crops," said Dr Olembo.

She said lifting the ban will put pressure on Kenya's neighbours as it has now heightened the possibility of GM seeds and other planting materials crossing their borders.

"With the GM ban lifted, neighbouring countries will have to step up their surveillance protocols. Without that, they might as well allow the free movement of GM crops and related materials," said Dr Olembo.

She also warned that the capacity of communities to maintain stocks of indigenous seed varieties would be compromised by the ban.

"Lifting the ban will jeopardise the seed sovereignty, human rights, and the traditional role of women as the community custodians of seed," she said.

Seed expert and organic farming advocate Daniel Maingi said the introduction of GM food crops means that women will no longer be able to afford the seed varieties.

"The proposed punitive fine of Sh10 million or six months' jail term for those found planting unauthorised GM varieties will also discourage many from the uptake of the new varieties," Mr Maingi said.

He said the entry of GM crops would herald a new era of local seed market domination by agrochemical giants.

"Seed colonisation will strip communities of the ability to independently produce food, make them GM seed dependent and threaten food security," Mr Maingi said.

He lamented what he called Africa's disappointing move to adapt technology that the West was slowly abandoning.

"It is sad to see that we are going for industrial food, which requires lots of pesticides. This type of food, which Europe is abandoning in favour of organic crops we grow here in Africa, is also mostly tasteless," he said.

Dr Murenga Mwimali, who is the Principal Research Scientist and Maize Breeder at the Kenya Agricultural and Livestock Research Organisation (KALRO), said GM technology had provided a way out of the country's pressing perennial food shortage crisis by providing a platform to undertake product development through engineering.

"We must find solutions to the problems we face. We have to apply new thinking to solve them. We cannot be thinking in new ways but living and acting in the old ways," he said.

Prof Douglas Miano, an associate professor at the Department of Plant Science and Crop Protection at the University of Nairobi, reminded the audience that the GM crop introduction into the country would be on a case by case basis, and not a haphazard process without the required safeguards.

"The lifting of the ban is not a free for all kind of declaration that will open the floodgates to random and uncontrolled GM crop cultivation. This is because the National Biosafety Act and the National Biosafety Authority that oversees the process of development and release of GM technology in the country are both in force," said the lecturer and researcher.

"We have the laid down laws and regulation governing the development, assessment, release and follow up of GM crops and these have clearly not been done away with. They will still be followed," he added.

He lamented that the ban had stifled local efforts to develop food security solutions using the technology.

"Our work was previously disappearing into a dark hole due to government policy that had outlawed food imports that were grown using GM technology," said Prof Miano.

Photo Credit | AFSTA

Farmers are key during trials as they facilitate technology transfer.

JKUAT technology boosts Kenyan maize yield amid drought

By Tebby Otieno | tebbyotieno62@gmail.com

Agricultural researchers and scientists at Jomo Kenyatta University of Agriculture and Technology (JKUAT) couldn't contain their excitement as they witnessed a bountiful maize harvest.

The Kenyan maize variety, DKC90-89, was planted on June 2 in JKUAT's Modern Agriculture Demonstration Area (MADA) and yielded 50 per cent more harvest than those in surrounding farms.

"We have been doing research mainly on maize in the agricultural research farm here in JKUAT, focusing mainly on how to improve the yield per hectare of our main crop besides mitigating the climate change impacts," said lead researcher, Prof David Mburu.

The researchers and scientists said DKC90-89 is not genetically modified. The improvement in yield was simply an outcome of optimised agronomic practices such as proper spacing, mulching, irrigation and effective pest control.

Registering 2,700kg yield per acre in the demonstration area, the crop has shown potential to reverse maize shortage in Kenya and contribute to food security for the population.

As COP27 discussions concluded in Sharm El-Sheikh, Egypt, Prof Mburu said his team has been conducting agricultural experiments that can feed the masses while keeping a tab on climate change.

He said they have been monitoring greenhouse gas emissions in the agricultural production system and experimenting with different treatments to see which one emits the least. They have also conducted experiments outside the university in farmers' fields in some of the driest parts of the country.

"We have done trials with farmers in a way of transferring the technology that we develop here to the farming community so that they can also benefit from technologies that improve the maize yield while reducing carbon emissions," said Prof Mburu.

Prof Robert Gituru, the Kenyan Director of the Sino-Africa Joint Research Centre (SAJOREC), says food security is a prerequisite for development, comfort, and good life. He says the three cannot exist without agriculture.

"The harvest time has come and we are very glad to note that the productivity of the crop that we established inside this plot was very good. Actually it was extremely encouraging compared to the similar crop outside the demonstration area," said Prof Gituru, adding, "We realised 50 per cent more produce."

In 2019, the Wuhan Botanical Garden under the Chinese Academy of Sciences and JKUAT, signed a Memorandum of Understanding (MoU) on collaboration and the establishment of MADA at JKUAT.

According to Prof Yan Xue, Executive Director of the SAJOREC at the Chinese Academy of Sciences, the researchers have also worked on other cutting-edge agricultural produce that can adapt to local climate and have yielded successful results in the past three yields.

He added that in the upcoming months, they hope to introduce kiwi fruit from their Botanic Garden and support the expansion of numerous varieties, including high-yield peanuts, hybrid rice, and other crops.

"It's my high expectation that the existing collaboration between CAS and JKUAT will continue to grow from strength to strength for the mutual benefit of our research and capacity building. I hope that the achievement of MADA can be taken up and validated by the local people," said Prof Yan.

Zhou Pingjian, the Chinese Ambassador to Kenya, stated during the harvest ceremony at JKUAT that hard work is not enough. Instead, he added, it was necessary to merge it with science, technology, and education to increase the output of maize and other agricultural produce.

Photo Credit | Tebby Otieno

Zhou Pingjian, the Chinese Ambassador to Kenya, and lead researcher, Prof David Mburu, with other staff at the MADA area in JKUAT.

A maize farm. A new technology will significantly increase local production of the staple crop, say researchers from JKUAT, Kenya.

"Everybody values the importance of food adequacy. So as a policy we are willing to deepen cooperation with our friends particularly African friends who is Kenya, through our cooperation in this field," said Dr Zhou.

Prof Victoria Ngumi, Vice Chancellor of JKUAT, said witnessing the ceremony was one of the most fulfilling outcomes of JKUAT researchers and scientists from the Chinese Academy of Sciences on maize production.

She said the news of the 50 per cent more yields than crops in the surrounding area planted with the same cultivar revealed the importance of international research partnerships in solving cross-border problems.

"In this project, a Chinese technology was applied in Kenya and the outcome now promises to revolutionise maize production with potential impacts going beyond Kenya. As a university we are proud of this enviable outcome of our collaboration with Wuhan Botanical Garden Chinese Academy of Sciences," said Prof Ngumi.

Many farmers, especially those in water-scarce areas, can only feel hopeful with this agricultural technology that has increased maize production for Kenya when the nation is experiencing a food supply shortage due to the prolonged drought.

According to Prof Ngumi, the technology will significantly increase local production of the staple crop while also demonstrating the validity of research as the only viable solution to societal obstacles like those encountered in the agricultural sector.

Photo Credit | AFSTA

A seed expert from SeedCo West Africa, Dr Takemore Chagomba makes a presentation at a seed congress. The entry of GM crops may lead to domination by agrochemical giants.

"Now we are free to pursue our research knowing that it can be applied once the approvals are sought from the required regulatory agencies and secured," the scientists said.

According to Prof Justus Onguso of Jomo Kenyatta University of Agriculture and Technology (JKUAT), the lifting of the ban had revived interest in biotechnology countrywide.

"Students who had given up on biotech are calling us. They are interested in re-enrolling so that they can apply what they have learnt in developing solutions for the local market," he told Sayansi.

Prof Onguso clarified that GM research had not been banned, but the negative publicity around the technology had driven scientists in the sector out of the spotlight.

"We were doing some projects in secret but now we can share the findings for the benefit of Kenyans and the world at large," Prof Onguso said.

"The ban's lifting provides a massive opportunity for us to develop solutions tailored for the Kenyan market all the way from concept, development, performance testing, approval, release and post-release surveillance and follow up."

Among the ongoing research projects is a vaccine that can be taken as a banana.

"An edible banana vaccine is under development, for those people who do not find the idea of an injection appealing or palatable. It will be easier to dispense vaccines to children, for example, through such an innovation," he said.

Prof Joel Onyango of the University of Nairobi asked Kenyans to trust in the capacity and experience of local scientists in developing home grown solutions for the country.

"Not everything must come from the West for us to see it as good or high quality. Let us learn to appreciate and respect the education and scientific talent or capacity in our midst," said Prof Onyango.

"We do not need to see GM as a threat. It is also not a panacea to all our pressing food security challenges. But if it has been proven to work elsewhere, it will work here given the opportunity and following the laid down regulations."

He assured the public that the National Biosafety Authority will not license any GM crop or tech that is unsafe.

"NBA has been mandated to monitor the tech's use and carry out comprehensive surveillance of such varieties' release and cultivation," said the researcher.

He said the technology could be used to boost the country's production to cover the shortfall in cereal supply.

Kenya produces 2.4 million tonnes of cereal each year compared to a consumption level of 4.2 million tonnes.

Photo Credit | AFSTA

Delegates at the 2022 AFSTA Annual Congress at their trading tables. Next year's online registration is now open.

Premier African Seed Trade 2023 congress online registration open

By Aghan Daniel |aghandan09@gmail.com

The online registration for the AFSTA Congress 2023, which will be held in the capital city of Senegal, Dakar from 6th to 8th March 2023, is now open.

To register, please visit the AFSTA website (www.afsta.org) and click on the AFSTA Congress 2023 logo, which will redirect one to the various links on the AFSTA Congress 2023, including the online registration.

Once you finalize your registration, please book your room at King Fahd Palace, the Congress hotel, or in one of the surrounding hotels listed on the congress 2023 website under "information on accommodation" link.

"We are happy to welcome all the delegates from around the world to our country for what we know will be another magnificent forum for seed people", said Modou Thiam, President of the Senegalese National Organising Committee (NOC).

Thiam, who is also the President of the Senegalese Seed Association (UNIS) added that his committee, in conjunction with the AFSTA Secretariat, is already working hard to ensure all preparations are complete in time.

Palm fringed beaches, colourful cities and a reputation for world class hospitality, Senegal deserves a spot on everyone's travel list.

Located at the westernmost point of the Africa continent, Senegal is known as the "Gateway to Africa" and has been welcoming travelers from Europe and the Americas for centuries.

This peaceful sub-Saharan country has always flown beneath the tourism radar and that's everyone's loss.

Not only is it one of the continent's and most accessible countries, it is also blessed with a rich culture, dreamy beaches and some of the best wild-life spotting opportunities anywhere in Africa.

This peaceful sub-Saharan country has always flown beneath the tourism radar and that's everyone's loss.

Urgent action needed to prevent premature deaths from HIV/AIDS

By Joyce Chimbi | j.chimbi@gmail.com

Wangari Njau remembers well the 1980s and 90s when HIV spelled doom, stigma reigned supreme and those infected with the virus were ostracised from the community, abandoned and left alone to die.

Her sister, Catherine Wairimu, was diagnosed with HIV in 1994. Wairimu and a group of friends left their village at the foot of the Aberdare Ranges in Nyeri County and travelled to Mombasa in search of greener pastures.

"There were no mobile phones and she lost touch with the family. When she came back two years later, we could not recognise her. She had to introduce herself. She was very thin, very dark and could barely walk. We learnt that she had mukingo (the long-necked disease)," Njau recalls.

She says people infected with the virus lost a lot of weight and their necks became elongated. Faced with a mysterious disease that killed people within no time, communities struggled with terminologies and used descriptive words in line with physical symptoms of HIV/AIDS to define the disease.

"We were afraid of her. We had a room in the compound that we used as a store. That became her home until the day she died a few months later. We were extremely afraid of her. It is the first time we had come face to face with the disease," says Njau.

While the landscape is today significantly different and stigma levels have significantly decreased, it is still not yet dawn for people living with HIV.

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Ms Beatrice Anyiko has been a mentor mother since 2017. She sensitises communities on HIV.

Data released by Kenya's National Syndemic Diseases Control under the Ministry of Health to mark the Worlds AIDS Day on December 1, 2022, painted a most worrisome picture: AIDS-related deaths increased in 2021 for the first time in a decade.

The data shows a steady progression in reducing AIDS-related deaths from 2013 to 2020. In 2013, there was a 30.1 per cent reduction in AIDS-related deaths followed by a 5.4 per cent reduction in 2015.

There was a significant leap to 19.4 per cent and 25.6 per cent reduction in AIDS-related deaths in 2017 and 2019, respectively, followed by a 7.2 per cent drop in 2020. In 2021, there is a significant increase in AIDS-related deaths by14.9 per cent.

Overall, 8,291 men aged 30 and above died of AIDS-related illnesses compared to 6,923 women in the same age group.

Nelson Otwoma, National Coordinator at the Network of People Living with HIV in Kenya (NEPHAK), says, "Most of the AIDS-related deaths

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A woman fields questions from a journalist: Efforts are in progress towards having a generation that is free from HIV to reduce the number of children who are born with the virus.

in 2021 occurred among men who, compared to women, are less likely to be diagnosed. They are also less likely to start and stay on treatment and reach an undetectable viral load. We call on communities to support men's access to testing and retention care."

Early diagnosis and immediate entry into HIV treatment and care is critical to ending the AIDS pandemic by 2030. UNAIDS has outlined ambitious new targets to prevent an estimated 28 million new HIV infections globally and 21 million AIDS-related deaths.

To do so, research by UNAIDS shows there is an urgent need to provide additional investment and focused efforts to remove barriers to HIV diagnosis, treatment and retention in HIV care.

Speaking during the commemoration of Worlds AIDS Day in Bungoma County, Health Cabinet Secretary Nakhumicha Wafula, said, "In more than three decades, our collective efforts have restored dignity and hope to people living with HIV and affected families. We also know that along this journey, we have lost more than 2 million Kenyans; men, women, and children to AIDS-related deaths."

"The initial sense of powerlessness that acquiring HIV would undoubtedly lead to untimely death experienced 38 years ago has been replaced by a movement of strong actors, including the communities of people living with HIV, represented here today," she said.

Working together, Wafula added, "our HIV response yielded a 58 per cent decline in annual AIDS-related deaths from 52,964 in 2010 to 22,373 in 2021. This encouraging performance reflects a five-fold increase in the number of people living with HIV on life-saving antiretroviral treatment, from about 250,000 in 2010 to 1.12 million in 2021."

It is these gains that are now at the risk of being rolled back, with HIV experts, activists and families infected or affected by HIV/AIDS calling for urgent responses to bring the fight against the pandemic on track to reach the goal to end the epidemic in the next eight years.

Photo Credit | Joyce Chimbi

A community health educator sensitises communities on HIV using T-shirt messaging.

Wafula said investments in the HIV response had yielded impressive results, adding that people are more knowledgeable about the disease, with many of them adopting protective behaviour and practices. There is now increased use of scientific technologies and tools and empowered communities to access HIV services.

How efforts to counter resistance to COVID jabs have worked

By Omboki Monayo | omboki2725@gmail.com

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A participation in the Aids Vaccine Advocacy Coalition (AVAC) science symposium lands me in central Malawi's Salima District.

The date is November 14, 2020. At the Khombedza Health Centre, Miriam Khatumba arrives for a Covid-19 jab. She is quick to reaffirm that she won't listen to claims that the prevention measure is satanic.

Such claims spread like wildfire the moment Malawi's Health ministry introduced COVID vaccines in 2021.

Khatumba, 68, is here for the second dose. The first was in April at this same facility that has existed since 1970s.

"I came here for my first shot after authorities asked us to get vaccinated. I ignored the rampant fear-mongering," she tells Sayansi. Khomebdza Health Centre serves at least 85,955 people in Salima.

According to Cosmas Phiri, the facility's Expanded Programme on Immunisation (EPI) Coordinator, 6,838 (15 per cent) of Khombedza residents are fully vaccinated. Some came from as far as Chimphanga and Makanjira, 14km and 18km away respectively, incurring up to 6,000 Kwacha ($5.8) on transport alone in a country where the Ministry of Labor, Youth and Manpower Development data estimates the December 2022 average monthly wage at $48.77.

Khatumba, accompanied by her husband, says: "I want to protect myself and my family from severe COVID-19 infection and possible death."

Lucia Frankie, a traditional leader, also got vaccinated, with her first dose coming in January 2022. "It was for my sake and my family's," she says at the health centre that started as a dispensary in 1970s before it was upgraded in the 80s.

Temperature check at a roadblock for COVID19.

On the way to becoming a fully-fledged health centre, the facility has been expanded through construction of a theatre, male and female wards and a maternity wing. And now the construction of office blocks and additional housing for nurses and clinical officers is underway.

Thanks to the government and development partners' investments infrastructure and medical personnel, Khombedza Health Centre is now an established community bulwark against the spread of COVID-19 and other infectious diseases.

"We treat TB, COVID-19, malaria and other infectious diseases. In addition, we carry out deliveries as well as maternal and child health services. At least 130 deliveries are done here every month," says Mr Phiri, adding: "We have adult and child vaccination, as well as disease surveillance in the region."

Although infection rates have reduced globally, COVID-19 still exists, with World Health Organisation (WHO) data showing Malawi as cumulatively recording 88,123 cases and 2,685 deaths by December 16, 2022.

"We started the COVID-19 vaccination in 2021, with Astra Zeneca, Johnson & Johnson and Pfizer doses," says Phiri, adding: "Almost 4,000 people have since been vaccinated at the facility. Roughly half of them are fully vaccinated, with Chisamba area having the highest coverage rate of 41 per cent."

This despite the misinformation that seemed to be a hurdle in the drive to fully vaccinate locals.

Ministry of Health statistics shows only 31 per cent of Malawians have received at least one COVID-19 vaccine dose. "We have recorded a low rate partly due to vaccine hesitancy and the global reduction in infections. We are still engaging the public to get more people vaccinated," says Maureen Luba of the Health Ministry.

The interactive symposium that included representation from the Malawi Ministry of Health, medical experts, science journalists from Malawi, Kenya (by three members of Media for Environment, Science, Health and Agriculture (MESHA)), Zimbabwe, Uganda and Tanzania, unearths a lot of hesitancy stories.

For Rashid Manganda, a Health Surveillance Assistant (HAS) based in Palombe District on the Malawi-Mozambique border, vaccine hesitancy is a major challenge. Villagers once forced the community health worker to take the HPV vaccine meant to protect girls aged 10 to 14 against development of cervical cancer in their sexually active adult years.

Rashid agreed to take the jab, which is primarily meant for young girls and boys.

"I knew that the vaccine would cause me no harm, even though it was meant for female recipients for the purpose of preventing the development of cervical cancer during their sexually active phase of life," he said.

The move by the HSAs bore fruit. "After we took the jab, the villagers allowed us to proceed with the rest of the exercise. It is important for us to engage the community if we are to make headway against COVID-19 and other diseases," he says.

"Many people, including clerics, claimed the jab was a satanic method to control the black population. There were rumours that the vaccinated part of the body would be magnetic," says Phiri.

Researchers Qun Ao, Robert Egolet, Hui Yin and Fuqian Cui carried out a cross-sectional study in the country, covering 758 participants in 2021.

"Of these, 189 or 24.9 per cent were vaccinated. A further 271 or 35.8 percent were willing to be vaccinated but had not yet received the vaccine, and 298 (39.3 per cent) refused to be vaccinated," reads the report published in the May 2022 edition of the Swiss MDPI journal. Vaccine hesitancy is defined by WHO as "delay in acceptance or refusal of vaccines despite the availability of vaccination services".

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Media should intensify efforts to dispel the rumours around the safety and efficacy of COVID-19 vaccines.

WHO has highlighted hesitancy as one of the 10 threats to global health.

The Health ministry has countered the misinformation, with the help of faith and opinion leaders in awareness campaigns. The effort, says Phiri, has paid off. "We have recorded significant success in our faith-based vaccination campaigns. For instance Jehovah's Witness faithful were the first to be vaccinated following directions from their international leadership," he says.

The country plans to vaccinate 10.97 million people or 60 percent of the population as soon as possible, and Mr Phiri says the vaccine is still available in the facility.

Ms Luba says the ministry intensified the campaign at the grassroots by incorporating Health Surveillance Assistants (HSAs). "We brought community leaders and other stakeholders to the table to decide which policies to be implemented. Among them was the involvement of HSAs in the vaccination drive," she said.

In Khombedza region, some 41 HSAs serve communities under Mr Phiri's guidance and supervision. Khatumba and Frankie have both benefited from the awareness creation by the HSAs.

Clinical Officer Boniface Chisamba says the HSAs also targeted HIV positive, those with hypertension and diabetes. "People with diabetes, high blood pressure and HIV are at high risk of infection with COVID-19, so we encourage them to be vaccinated.

We did this for the people living with HIV by combining counselling and antiretroviral services with COVID-19 awareness," says Mr Chisamba.

Among the cases he handled at the facility was a pregnant woman admitted in May 2021. "We managed her health till the infection cleared. She delivered a baby girl free of COVID-19," he said.

The medic admits the facility lacks test kits, which are however available at the larger Salima District Hospital. "We refer suspected cases to Salima Hospital and once they are confirmed we manage them until the infection clears," he says.

At the end of the symposium, Ms Kay Marshall of AVAC urged media to help debunk the myths and misconceptions around vaccination.

"Media should intensify efforts to dispel the rumours around the safety and efficacy of COVID-19 vaccines. This includes misinformation being peddled by social media sites that lack scientific credibility," she said, adding that the problem was not unique to Africa.

"Vaccine hesitancy is an issue in the wealthier countries of the Global North, including the USA, due to the political and religious beliefs of many who opted not to get vaccinated," she told Sayansi.

"Accurate, timely and easily accessible knowledge will help the public to understand the importance of vaccines and the need to take them in large numbers to rapidly achieve herd immunity," she said.

Sayansi Magazine in figures

The MESHA board, the Secretariat and the editorial team hereby congratulate our Sayansi Magazine heavyweights for their sterling performance in the FIVE editions we produced this year with support from JRS Biodiversity Foundation, AVAC and Media Council of Kenya.

200 No. of pages published in 2022.

92 No. of stories published by Sayansi Magazine in 2022.

48 No. of stories contributed by our heavyweights.

Joyce Chimbi, Our champion

16 No. of stories by our top performer, Joyce Chimbi.

Tebby Otieno

11 No. of stories by our third best performer Tebby Otieno.

Clifford Akumu

8 No. of stories by our fourth best performer Clifford Akumu.

Aggrey Omboki

13 No. of stories by our second best performer Aggrey Omboki,

29 No. of editions published since establishment in 2014.

5 No. of editions published in 2022.