



**AFRICAN REGIONAL SCIENCE, TECHNOLOGY  
AND INNOVATION FORUM**

on

**2020-2030: A Decade to  
Deliver a Transformed and Prosperous Africa  
through the 2030 Agenda and Agenda 2063.**



**Victoria Falls  
Zimbabwe  
24 February, 2020**

# BACKGROUND



The 2030 Agenda for Sustainable Development established the collaborative Multi-Stakeholder Science, Technology, and Innovation Forum for the Sustainable Development Goals (SDGs) as part of the Technology Facilitation Mechanism (TFM). The second Forum, on 24 February 2020 in Victoria Falls, Zimbabwe, will be hosted by the Ministry of Higher Education, Science and Technology Development of Zimbabwe. The Forum is co-organized with the United Nations Educational, Scientific and Cultural Organization (UNESCO), in collaboration with the African Union Commission and the Department of Science and Innovation, South Africa.

The Forum is designed to meet both the global and continental mandates. As noted above, it will serve as a platform for exploring and facilitating interactions, matchmaking, cooperation and partnerships among the relevant stakeholders, in order to drive technology development and transfer, and create regional innovation networks for co-learning and co-creation, and for sharing of experiences between and among multi-stakeholders. Further, it will also provide a platform to identify and examine technology needs and institutional voids and gaps that should be addressed to enable African countries to fully harness and deploy science, technology and innovation to accelerate the achievement of the Sustainable Development Goals.

These include scientific cooperation, innovation and capacity-building, as well as facilitation of the development, transfer and dissemination of relevant technologies for the Sustainable Development Goals. The Forum will showcase efforts that the public, private sector and individuals deploy to accelerate the achievement of Sustainable Development Goals as well as how technologies, especially technologies developed in Africa, can contribute to the achievement of the Sustainable Development Goals and Agenda 2063.

# THEME

The theme of the second African Science, Technology and Innovation Forum is drawn from the theme of the sixth session of the Africa Regional Forum on Sustainable Development (2020 ARFSD): “2020–2030: A decade to deliver a transformed and prosperous Africa through the 2030 Agenda and Agenda 2063”.

To stimulate dialogue on possible accelerators of implementation, the deliberations of the 2020 ARFSD will be informed by keynote speakers as well as the Summary Report of the 2020 Africa Sustainable Development Report and background reports on the five subthemes crafted around the Ps – People, Prosperity, Planet, Peace and Partnerships – as shown in the table below.

<b>People</b>	Goal 1 No poverty; Goal 2 Zero hunger; Goal 3 Good health and wellbeing; Goal 4 Quality education; and Goal 5 Gender equality
<b>Prosperity</b>	Goal 7 Affordable and clean energy; Goal 8 Decent work and economic growth; Goal 9 Industry, Innovation and Infrastructure; Goal 10 Reduced inequalities; and Goal 11 Sustainable cities and communities
<b>Planet</b>	Goal 6 Clean water and sanitation; Goal 12 Responsible consumption and production; Goal 13 Climate action; Goal 14 Life below water; and Goal 15 Life on land
<b>Peace</b>	Goal 16 Peace, justice and strong institutions
<b>Partnerships</b>	Goal 17 Partnerships for the Goals

## ABOUT UNESCO



UNESCO is the United Nations Educational, Scientific and Cultural Organization. It seeks to build peace through international cooperation in Education, the Sciences and Culture. UNESCO's programmes contribute to the achievement of the Sustainable Development Goals defined in Agenda 2030, adopted by the UN General Assembly in 2015.

Political and economic arrangements of governments are not enough to secure the lasting and sincere support of the peoples. Peace must be founded upon dialogue and mutual understanding. Peace must be built upon the intellectual and moral solidarity of humanity.

In this spirit, UNESCO develops educational tools to help people live as global citizens free of hate and intolerance. UNESCO works so that each child and citizen has access to quality education. By promoting cultural heritage and the equal dignity of all cultures, UNESCO strengthens bonds among nations. UNESCO fosters scientific programmes and policies as platforms for development and cooperation. UNESCO stands up for freedom of expression, as a fundamental right and a key condition for democracy and development. Serving as a laboratory of ideas, UNESCO helps countries adopt international standards and manages programmes that foster the free flow of ideas and knowledge sharing.

UNESCO's founding vision was born in response to a world war that was marked by racist and anti-Semitic violence. Seventy years on and many liberation struggles later, UNESCO's mandate is as relevant as ever. Cultural diversity is under attack and new forms of intolerance, rejection of scientific facts and threats to freedom of expression challenge peace and human rights. In response, UNESCO's duty remains to reaffirm the humanist missions of education, science and culture.

# ABOUT UNECA



Established by the Economic and Social Council (ECOSOC) of the United Nations (UN) in 1958 as one of the UN's five regional commissions, ECA's mandate is to promote the economic and social development of its member States, foster intra-regional integration, and promote international cooperation for Africa's development. Made up of 54 member States, and playing a dual role as a regional arm of the UN and as a key component of the African institutional landscape, ECA is well positioned to make unique contributions to address the Continent's development challenges.

Our mission is to deliver ideas and actions for an empowered and transformed Africa; informed by the 2030 Agenda and Agenda 2063. The mission is guided by ECA's five new strategic directions which are:

- A. Advancing ECA's position as a premier knowledge institution that builds on its unique position and privilege to bring global solutions to the continent's problems and take local solution to the continent;
- B. Developing macroeconomic and structural policy options to accelerate economic diversification and job creation;
- C. Designing and implementing innovative financing models for infrastructure, and for human, physical and social assets for a transforming Africa;
- D. Contributing solutions to regional and transboundary challenges, with a focus on peace security and social inclusion as an important development nexus;
- E. Advocating Africa's position at the global level and developing regional responses as a contribution to global governance issues.

ECA's thematic areas of focus: Macroeconomic policy and governance

- A. Regional Integration and Trade
- B. Private sector development and finance
- C. Data and statistics
- D. Technology, climate change, and natural resource management
- E. Gender, Poverty and Social Policy
- F. Economic development and planning

## ABOUT DSI, SOUTH AFRICA



The Department of Science and Innovation (DSI) seeks to boost socio-economic development in South Africa through research and innovation. To achieve its goals, the Department provides leadership, an enabling environment and resources for science, technology and innovation. Through its Programmes and through several entities that work alongside it, the Department is accomplishing ground-breaking science and enhancing the well-being of all South Africans.

The fourth session of the Africa Regional Forum for Sustainable Development (AFRSD), held in Senegal in 2018, saw the DSI playing an instrumental role in leading the proposal for a resolution that mandated UNECA to host an annual multi-Stakeholder Forum on STI for the implementation of the SDGs. South Africa successfully lobbied the fifty-first session of the Economic Commission for Africa and the Conference of African Ministers of Finance, Planning and Economic Development to mandate the ECA to organize a Multi-Stakeholder STI Forum as an input into the AFRSD annually. As a champion of this resolution, South Africa in partnership with UNECA have been playing a leading role in ensuring that it is implemented. As such the first Africa STI Multi-stakeholder Forum was organised, and hosted in Morocco.

South Africa's 2019 White Paper in Science, Technology and Innovation, recognises the SDGs as the guiding multilateral policy framework for South Africa's international STI cooperation and recognises that STI plays three main roles in the achievement of the SDGs. First, STI is a goal in itself as a driver of economic growth and job creation. Second, STI is central to the implementation of other goals; e.g. new technological solutions can help address challenges around energy and food security. Third, scientific knowledge can help to both translate the targets associated with the SDGs into national policies and evaluate their impact. The White Paper also alludes that STI have a fundamental role to play in achieving the Sustainable Development Goals (SDGs). South Africa's future is inextricably linked to that of the rest of the African continent, and therefore the potential of STI for African development and continental integration needs to be fully exploited.

It is therefore, of interest to the DSI support the role STI plays in the attainment of the SDGs for Africa's development. The DSI therefore sends its wishes for a successful sixth Africa Regional Forum on Sustainable Development and a successful Africa Forum on STI Forum.

## MESSAGE

### FROM HON. PROF. DR. AMON MURWIRA, MINISTER OF HIGHER AND TERTIARY EDUCATION, INNOVATION, SCIENCE AND TECHNOLOGY DEVELOPMENT, ZIMBABWE



The Government of Zimbabwe is pleased to convene the 2nd African Regional Science, Technology and Innovation Forum, in collaboration with the United Nations Economic Commission for Africa (UNECA), The United Nations Educational, Scientific and Cultural Organisation (UNESCO), the Department of Science Innovation, South Africa and other partners. The forum which is being held back-to-back with the Africa Regional Forum on Sustainable Development will consider for the first time all the 17 SDGs under the theme “2020-2030: A Decade to Deliver a Transformed and Prosperous Africa through the 2030 Agenda and Agenda 2063”. The forum, which is from 24 to 27 February 2020 at Elephant Hills, Victoria Falls, will pave the way to a more focused decade of implementation towards attainment of the 2020 global Agenda. The gathering will enable us to apply our minds and discuss Science, Technology and Innovation cooperation, share best practices, identify and examine technology needs and gaps, and facilitate development, transfer and dissemination of relevant technologies for the successful implementation of the United Nations 2030 Agenda and the African Union Commission 2063 Agenda.

In the spirit of leaving no one behind, the African Regional Science, Technology and Innovation Forum has embraced a noble idea of preparing the youth for the 4th industrial revolution by organizing a 2-day STEM boot-camp for the youth drawn from all the provinces of Zimbabwe. It is envisaged that this platform will grow to include youth from all over the continent.

Zimbabwe is grateful for being given the opportunity to host the forum.

I wish you a fruitful deliberation.

### REGISTRATION

08:00-08:30

### OPENING SESSION

08:30-10:00

#### Director of Ceremony

**Oliver Chinganya**, Director, African Centre for Statistics, ECA

#### Welcome remarks

**Prof. F. Tagwira**, Permanent Secretary, Ministry of Higher and Tertiary Education, Science, Innovation and Technology Development, Zimbabwe

**His Worship, Somvelo Dhlamini** - Mayor, Victoria Falls, Zimbabwe

#### Remarks

**Prof. Hubert Gijzen**, Regional Director and Representative, UNESCO

#### Overview of the STI Forum

**Mr. Jean-Paul Adam**, Director for Technology, Climate Change and Natural Resources Management, UNECA

#### Message from

**H. E. Mukudzeiishe Madzivire**, Child President of the Republic of Zimbabwe

#### Keynote Address

**Hon. Prof. Amon Murwira**, Minister of Higher and Tertiary Education, Innovation, Science and Technology Development, Zimbabwe

#### Vote of thanks

**Mr Imraan Patel**, Deputy Director-General: Socio-Economic Partnerships, Department of Science and Innovation, South Africa

#### Rapporteur

**Prof. Martiale Gaetan Zebaze Kana**, Head of Science Unit, UNESCO Regional Office for Southern Africa

## HIGH-LEVEL POLICY DIALOGUE ON MAKING SCIENCE, TECHNOLOGY AND INNOVATION DELIVER THE 2030 AGENDA FOR AFRICA

10:00-11:00

Both the 2030 Agenda for Sustainable Development and Agenda 2063 recognize the importance of science, technology and innovation in advancing human wellbeing, economic transformation and achieving environmental targets. Some of the major priority areas of Agenda 2063 include 'well-educated citizens and skills revolution underpinned by science, technology and innovation; healthy and well-nourished citizens; transformed economies underpinned by STI driven manufacturing, industrialization and value addition; modern agriculture for increased productivity and production; and environmentally sustainable and climate resilient economies and communities', all of which underline the importance of STI. This high-level panel will address efforts to scale-up and accelerate actions to enable science, technology and innovation deliver the 2030 Agenda in the coming decade and on Agenda 2063 in the remaining four decades.

**Ms. Odette Bahati: Drycard to fight against aflatoxin, Rwanda (5 minutes)**

#### Panellists

**Prof. Joyce Ndalichako**, Minister of Education, Science, Technology, United Republic of Tanzania & Sector Chair of SADC

**Mr. Jemal Beker**, State Minister of Innovation and Technology, Ethiopia



**Extraordinary Prof. Mary Teuw Niane**, Former Minister of Higher Education, Scientific Research, Senegal and Professor, Université Gaston Berger de Saint-Louis, Senegal, Dakar

**Dr. Madaleine Tchuinte**, Minister of Scientific Research and Innovation, Cameroon

**Prof. Domingos da Silva Neto**, Secretary of State for Science, Technology and Innovation, Angola

[Moderator](#)

**Ms. Karima Bounemra Ben Soltane**, Director of IDEP, ECA

[Rapporteur](#)

**Ms. Karimanzira Rungano**, Director, Ministry of Higher and Tertiary Education, Science & Technology Development, Zimbabwe

## COFFEE BREAK

11:00-11:20

## HIGH-LEVEL POLICY DIALOGUE ON EMERGING TECHNOLOGIES AND THE FOURTH INDUSTRIAL REVOLUTION AS TOOLS FOR SCALING UP ACTION

11:20-12:20

Emerging technologies that underpin the fourth industrial revolution are transforming every aspect of society and redefining industrialization, education and development strategies. Countries are investing heavily in building new skills and new supply and value chains. While the advances in technologies promise to enhance efficiency and productivity, their contribution to economic and social development and environmental gains are not fully understood. The fourth industrial revolution may increase various forms of inequalities within and among countries, communities and different groups – creating winners and losers. Currently, only a handful of African countries has developed national strategies or began discussion on technologies that underpin the fourth industrial revolution.

Panellists will draw on the national, regional and international experiences to address among others: 1) How should African industrial strategies be tailored to ensure they are ready for emerging technologies and fourth industrial revolution? 2) How can Africa best build the human, industrial and governance capacities needed to harness emerging technologies? 3) What role should education, research and development institutions and private sector play? 4) Where are the best opportunities for Africa and how can African countries set their priorities? 5) In the face of multiple technologies and their interdependencies, and given limited capacity in national government departments, how can African countries design integrated national or regional strategies that address the needs of emerging technologies, that are inclusive?

**Henry Ngale Foretia: Smart Diagnostic for Food Security, Cameroon (5 minutes)**

[Panellists](#)

**Mr. Alexander Trepelkov**, Officer-in-Charge, Division for Sustainable Development Goals, United Nations Department for Economic and Social Affairs

**Joshua Setipa, Managing Director**, United Nations Technology Bank for Least Developed Countries

**Dr Sibongiseni Thotsejane**, Representative from the Fourth Industrial Revolution Presidential Commission, South Africa

**Prof. Cherkaoui El Moursli**, Vice-President, University Mohammed V, Rabat. Morocco

**Dr Moses Cho**, Council for Scientific and Industrial Research, South Africa

[Moderator](#)

**Mr Imraan Patel**, Deputy Director-General: Socio-Economic Partnerships, Department of Science and Innovation, South Africa

### Rapporteur

**Dr Sibongiseni Thotsejane**, Representative from the Fourth Industrial Revolution Presidential Commission, South Africa

### OPEN INNOVATION PLATFORMS TO ACCELERATE KNOWLEDGE SHARING, INNOVATION AND TECHNOLOGY DEVELOPMENT

12:20-13:00

**Prof. Darelle Van Greunen: Ncediso™ App, South Africa**

Presentation of the EU-Africa Ubora Open Innovation Infrastructure

**Ms. Philippa Makabore**, Head- Instrumentation Division, UIRI, Uganda and ABEC Secretariat

Presentation by World Association of Industrial and Technological Research Organizations (WAITRO)

Presentation of the Innovation Bridge, by CSIR- South Africa

### Moderators

**Mr. Victor Konde and Mmampei Chaba**

### Rapporteur

### LUNCH

13:00-14:00

## PARALLEL SESSIONS START

### PARALLEL SESSIONS A

14:00-15:30

#### SESSION 1: PEOPLE – POVERTY, HUNGER, HEALTH, EDUCATION AND EQUALITY (SDG 1, 2, 3, 4, 5)

By 2030, about 9 of 10 poor people in the world will be in Africa and life expectancy is likely to be lower than that in the rest of the world despite the progress made in recent years. Science, technology and innovation has been at the forefront of increasing access to food, health and education services, and in reducing gender inequality. All of which are important in improving the wellbeing of people.

This session will focus on the opportunities that science, technology and innovation offers to Africa to uplift the millions of the people out of poverty and hunger, offer quality, accessible and affordable health and education services as well as address all forms of gender inequality.

**Anthony Esabu: Scaling up conservation agriculture, Uganda (5 minutes)**

#### Panellists

**Prof. Sheila Dinotshe Tlou**, Former Minister of Health, Botswana; Co-Chair, Global HIV Prevention Coalition; Co-Chair, Nursing Now Global Campaign

**Mr Ghaith Fariz**, Director UNESCO Cairo Office

**Prof. Martin Oosthuizen**, Chief Executive, SARUA

**Mr Artwell Kadungure**, Training and Research Support Centre

**Prof. Romain Murenzi**, Executive Director, The World Academy of Sciences

**Dr Douglas Ncube** – Agricultural Specialist, Zimbabwe

#### Moderator

**Prof Muzvidziwa** , Vice Chancellor Midlands State University

### [Rapporteur](#)

**Mr. Moses Tapfumaneyi Mukabeta**, NPO - Education of UNESCO ROSA

### SESSION 2: PROSPERITY (SDG 7, 8, 9, 10, 11)

Science, technology and innovation are key in advancing access to affordable and clean energy (Goal 7), driving economic growth that delivers decent work (Goal 8), accelerating industrialization and infrastructure development (Goal 9), reducing inequality (Goal 10) and building sustainable cities and communities (Goal 11). All of which are needed to achieve broad-based and shared prosperity in Africa.

This session will focus on measure, approaches and mechanisms for accelerating the achievement of shared prosperity. It will identify actions and strategies countries need to undertake to meet the five goals.

**Shermar Stuart: Bringing the “Internet” to the people, South Africa (5 minutes)**

### [Panellists](#)

**Dr. Madaleine Tchuinte**, Minister of Scientific Research and Innovation, Cameroon

**Hon. Prof. dr. Amon Murwira**, Minister, Ministry of Higher and Tertiary Education, Science, Innovation and Technology Development, Zimbabwe

**Mr Ramesh Bheekho**, Deputy Permanent Secretary of the Ministry of Technology, Communication and Innovation, Mauritius

**Mr Imraan Patel**, Deputy Director-General: Socio-Economic Partnerships, Department of Science and Innovation, South Africa

**Mr Norman Moyo**, Group Chief Executive Officer, Distributed Power Africa, South Africa

**Prof. Eddie Mwenje**, Vice Chancellor, Bindura University of Science Education

### [Moderator](#)

**Ms. Mmampei Chaba**, Director Multilateral Cooperation and Africa, Department of Science and Innovation, South-Africa

### [Rapporteur](#)

### SESSION 3: PLANET (SDG 6, 12, 13, 14, 15)

Climate change is increasing the existing vulnerabilities and all forms of inequalities in Africa, and is likely to derail the achievement of all Sustainable Development Goals and national as well as regional development plans. Currently, the world is unlikely to meet any of the targets except that of clean air in cities. However, scientific and technological solutions to address most of the emissions (over 70%) exists today and innovative tools to improve resiliency are becoming accessible.

This session will look at steps and integrated approaches to mitigate the effects of and adapt to a changing climate; access to the necessary technological and non-technological tools; scientific and technological collaboration in climate change research, data sharing and information; and the development opportunities that climate change presents.

**Ms. Kutlwano Ngwarati: Amrui project Paperless receipts, South Africa (5 minutes)**

### [Panellists](#)

**Ms. Laylee Moshiri**, Country Representative, UNICEF (WASH)

**Dr. Juliette Biao Koudoukpo**, Regional Director, UN Environment Programme, Africa Office

**Eng. Dr. Mackay Okure**, Interim Executive, East African Centre of Excellence for Renewable Energy and Energy Efficiency (EACREEE)

**Dr Anitha Ramsuran**, Technology Innovation Agency

**Prof. Hubert Gijzen**, Regional Director and Representative to SADC UNESCO

**Eng. Martin Manuhwa**, President of FAEO

[Moderator](#)

**Prof P Mafumo**, Vice Chancellor, University of Zimbabwe

[Rapporteur](#)

**Dr. Mama Plea**, Program Specialist of Natural. Sciences, UNESCO

### COFFEE BREAK

15:30-15:50

### PARALLEL SESSIONS B

15:50-16:50

#### SESSION 4: PEACE (SDG 16)

- Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable and inclusive institutions at all levels.

Science, technology and innovation can be used to promote and build peaceful and inclusive societies, but they can also be used to seed discontent and divide peaceful societies.

Which legal and regulatory mechanisms, measures and initiatives can Africa pursue to ensure it harnesses science, technology and innovation to achieve the targets of Goal 16? Which technologies and processes are more likely to promote peaceful and inclusive societies? How can Africa ensure technological and innovations are accountable and inclusive?

**Emeka Joseph Nwagboso: Pink Blive, Nigeria (5 minutes)**

[Panellists](#)

**Dr. Monica Idinoba**, Principal Scientific Officer, African Union Commission

**Dr. Amr Safwat**, Manager of African organizations, Ministry of Communications and Information Technology, Egypt

**Mr. Fortunate Muyambi**, Principal Officer Innovation, Technology Development and Acquisition, EASTECO, East African Community

**Dr. Daniel Nyanganyura**, Regional Director, African Regional Office, International Science Council, South Africa

**Mr. Gilbert Sendugwa**, Executive Director, Africa Freedom of Information Centre, Kampala

**Ms. Zoe Titus**, Namibia Media Trust (NMT), Windhoek, Namibia

[Moderator](#)

**Ms. Karima Bounemra Ben Soltane**, Director of IDEP, ECA

[Rapporteur](#)

**Mr. Al Amin Yusuph**- Regional Advisor for Communication and Information, UNESCO

#### SESSION 5: PARTNERSHIPS (SDG 17)

- Strengthen the means of implementation and revitalize the global partnership for sustainable development.

Knowledge of economic, social and environmental importance is becoming more diverse. Countries such as China, Korea, Brazil and Thailand are becoming leaders in many areas. Therefore, North-South and South-South partnerships as well as intra-African partnerships are becoming increasing import. This session will assess current partnerships, their contribution to meeting the SDGs and building a sound scientific, technological and industrial base in African countries.

**Dr. Pulane Nkhabutlane: Superfoods sorghum, Lesotho (5 minutes)**

Opening Remarks (15 minutes)

**H.E. Mr. Jemal Beker**, State Minister of Innovation and Technology, Ethiopia

**Mr. Joshua Setipa**, Managing Director, UN Technology Bank for LDCs

Round table: Enhancing continental partnerships

**Dr. Maxwell Otim**, Director, Ministry of Science, Technology and Innovation, Uganda

**Prof. Mokhtar Sellami**, Director-General, Scientific Research and Technological Development, Ministry of Higher Education and Scientific Research, Algeria

**Ms. Anneline Morgan**, Senior Programme Officer for STI at the SADC Secretariat

Moderator

**Mr. Oliver Chinganya**, Director of African Centre for Statistics, ECA

Rapporteur

**Ms. Lindiwe Gama**, Deputy-Director, Department of Science and Innovation

### SESSION 6: OPEN SCIENCE (COORDINATED BY UNESCO)

Open Science is increasingly seen as “Science for the Future” and the “Future of Science”. Science is not necessarily accessible by all, inclusive and readily available. Science can contribute to achieving the United Nations Sustainable Development Goals (SDGs). UNESCO was tasked to lead a global dialogue on Open Science, to identify globally-agreed norms and practices in order to create a standard-setting instrument.

The session will address what open science means for Africa, the challenges and opportunities for making science accessible to all, assess the UNESCO Recommendation on Open Science, and identify concrete measures advance science in Africa.

**Mr. Uche Kenneth Udekwe: Natal Care promo, Nigeria**

Opening remarks (15 minutes)

**Mr. Jean-Paul Adam**, Director, Technology, Climate Change and Natural Resources Management, UN ECA.

**Dr. Peggy Oti-boateng**, Director, Science Policy and Capacity Building Division, UNESCO

Round Table “Towards a Global Consensus on Open Science”

**Dr. Molapo Qhobela**, Chief Executive Officer of the National Research Foundation, South Africa

**Dr. Wilhelmina Quaye**, Director Science and Technology Policy Research Institute of the Council for Scientific and industrial Research, Ghana

**Dr. Mahama Ouedraogo**, Director of Human Resources Science and Technology at African Union Commission

Moderator

**Dr. Peggy Oti-boateng**, Director, Science Policy and Capacity Building Division, UNESCO

Rapporteur

**Dr. Samuel Partey**, Programme Specialist, UNESCO ROEA

### REPORT BACK FROM THE AND DISCUSSION SESSION

16:50-17:40

Chair: Martiale Zebaze Kana, UNESCO

**Video - Ms. Roza Alemayehu - Walelgn (save life), Ethiopia**

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### SPECIAL SESSION ON ACCELERATING ATTAINMENT OF SDG4 AND CESA TARGETS TO LEAVE NO ONE BEHIND

#### OPENING

14:00-14:30

Welcome remarks (5 minutes, each)

**Ms. Ann Therese Ndong-Jatta**, Director, UNESCO Nairobi Regional Office

Opening Remarks (5 minutes, each)

**Dr. Kebede Tsegaye**, Senior Coordinator/Social Sector Intergovernmental Authority on Development (IGAD), Djibouti

**H.E. Prof. Sarah Anyang Agbor**, Commissioner, AUC

Keynote Address (10 minutes)

**Hon. Cain Mathema**, Minister of Primary & Secondary Education, Zimbabwe

CHAIR: Mr. Dimitri Sanga, Director, UNESCO Dakar Regional Office

#### TEA BREAK/ GROUP PHOTO

14:30-15:00

#### TECHNICAL SESSIONS/ PRESENTATIONS

15:00-15:50

##### PLENARY A

**UNICEF:** Leaving no one behind: the imperative of focusing on girls and other disadvantaged populations **BY Beifith K. Tiya**, UNICEF Regional

**UNHCR:** Emerging Issues and response to Education in Emergencies: refugees, IDPs, in Africa **BY Emily Lugano**, UNHCR Regional

CHAIR: Saidou Jallow, UNESCO, Nairobi

##### PLENARY B

**UIS:** Is Africa on track to leave no one behind by 2030 on selected SDG4-CESA Targets? **BY Georges Boade**, UIS, Dakar

**IIEP:** What key inputs are required to accelerate achievement of the quality imperative of SDG4-CESA targets in the next 10 years? **BY Polycarp Otieno**, IIEP-Pole de Dakar

**UNESCO:** What is the cost of getting there by 2030? **BY Hilaire Mputu**, UNESCO Yaounde

**IICBA :** Teacher Development in Africa for SDG4-CESA and Silencing the Guns **BY Yumiko Yokozeki**, Director IICBA

CHAIR: Claude Akpabie, UNESCO, Dakar

#### PLENARY DISCUSSION/ Q&A

15:50-16:30

#### GROUP WORK

16:30-17:00

**Group 1:** Girls/Gender

**Group 2:** Refugees/IDPs

**Group 3:** Rural populations

Groups to propose 3 - 5 recommendations each, to accelerate achievement of SDG4 and CESA targets within framework of Leaving No One behind

Chair & Rapporteur to be designated by each group session

## PRESENTATION OF RECOMMENDATIONS TO PLENARY & DISCUSSION

17:00-17:10

**CHAIR:** Ms. Ann Therese Ndong-Jatta, Director, UNESCO Nairobi Regional Office

Rapporteurs

## RE-CAP OF MEETING HIGHLIGHTS — CLOSING & WAY FORWARD

17:10-17:30

## PARALLEL SESSIONS END

## CLOSING CEREMONY

17:40-18:00

**Mr. Imraan Patel**, Deputy Director-General: Socio-Economic Partnerships, Department of Science and Innovation, South Africa

**Prof. Hubert Gijzen**, Regional Director and Representative, UNESCO

**Mr. Jean-Paul Adam**, Director, Technology, Climate Change and Natural Resources Management, UNECA

Closing Statement

**Hon. Prof. dr. Amon Murwira**, Minister, Ministry of Higher and Tertiary Education, Science, Innovation and Technology Development, Zimbabwe

Rapporteur

**Ms. Karimanzira Rungano**, Director, Ministry of Higher and Tertiary Education, Science & Technology Development, Zimbabwe

## NETWORKING AND SHOWCASING INNOVATIONS IN ACTION

18:30-21:00

Master of ceremony

**Guests of honour:** **Hon. Prof. dr. Amon Murwira (Sen)**, Minister, Ministry of Higher and Tertiary Education, Science, Innovation and Technology Development, Zimbabwe

Launch of the African Innovation Policy Advisory Group (AIPAG) – ECA

Remarks

**Representatives of AIPAG**

Showcasing and Pitching and Award giving ceremony: Celebrating Ingenuity

**Remarks by top 3 winners**

# BIOGRAPHIES

We would like to thank all the speakers for their participation in the 2nd African Regional Science, Technology And Innovation Forum. Brief biographies (partial) are listed below in alphabetical order.



**Mr. Al Amin Yusuph** | Regional Advisor for Communication and Information, UNESCO for Southern Africa

Mr. Al-Amin Yusuph joined UNESCO in 2006 as a UNESCO Specialist for the Communication and Information programme, covering the United Republic of Tanzania, Seychelles, Madagascar, Mauritius and Comoros up to 2015 when he relocated to the UNESCO New Delhi Office as an Advisor for Communication and Information for South Asia. Al-Amin joined the UNESCO ROSA in 2019. Prior to joining UNESCO, Al-Amin worked for the African Daily Newspaper in the United Republic of Tanzania (1997), and later the British Council in 1999, where he worked for eight years as Knowledge and

Learning Centre Manager and a Member of the East and West Africa Regional Leadership Team. As a member of the British Council's East and West African Regional Leadership Team, Al-Amin was involved in managing library automation projects, and conducted peer reviews of British Council operations in Sierra Leone and Ethiopia from 2002 - 2004. He also worked briefly with CIDA (Canada) in Tanzania in 2004, where he consulted on Information Management.



**Mr. Amr Safwat** | Manager of African Organizations Affairs of MCIT, Egypt

Mr. Amr Safwat serves the Ministry of Communications and Information Technology, Egypt as the Manager of African Organizations Affairs. He possesses more than 14 years of experience working for the government on establishing and managing partnerships with foreign governments, international and regional organizations in the ICT sector. His main expertise lies in formulating policy recommendations, program management, and setting initiatives to enhance cooperation with foreign governments and strategic development partners. He previously worked at the United Nations High Commissioner for Refugees (UNHCR) where he worked on interviewing asylum

seekers from different countries and determining their refugee status. Mr. Safwat holds a Master's degree in Public Administration from the Lee Kuan Yew School of Public Policy, National University of Singapore and a BA in Business Administration.



**Ms. Anneline Morgan** | Senior Programme Officer for STI at the SADC Secretariat

As of June 2019 Ms Morgan assumed the role of Senior Programme Officer responsible for Science, Technology and Innovation at the SADC Secretariat under the Directorate for Industrial Development and Trade. In 2014-2019, Ms Morgan was seconded to SADC Secretariat as the Senior Technical Advisor: STI, where she was responsible for facilitating and coordinating regional STI policies, strategies and programmes in support of SADC Member States. From 2007-2014, she held the position of Director: Africa Cooperation at the South African, Department of Science and Technology, where she was

responsible for managing international engagements and partnerships with African countries in the area of science and technology. She has also been instrumental in the coordination and development of regional STI policies and strategies such as the SADC Strategic Plan and Implementation Plan on STI, SADC STI Climate Change Framework, SADC Cyber-Infrastructure Framework SADC IPR Framework and Guidelines, and SADC Innovation and Technology Transfer Framework and Action Plan.



# BIOGRAPHIES



**Mr. Artwell Kadungure** | Coordinator of TARSC

Artwell Kadungure coordinates and leads the Community Based Research and Training Programme (CBRT) at the Training and Research Support Centre (TARSC), a not for profit organisation based in Harare, Zimbabwe. His work aims to develop and sustain community capacities for improved wellbeing and decent lives. He designs, implements and coordinates training, research and support services to state and civil society organisations and has worked on areas such as appropriate technologies in health, primary health care, public health, solid waste management and social security. His work also involves enabling development of platforms for inclusive and sustainable

dialogue on these areas.



**Mr. Beifith KOUAK TIYAB** | Statistician and Development Economist, UNICEF

Beifith KOUAK TIYAB is Statistician and Development Economist, specialized in the area of education with more than ten years of experience in the sector. Before joining recently UNICEF Regional Office for Eastern and Southern Africa as education specialist on data and resulted-based management, he worked with Africa-based office of UNESCO's International Institute for Educational Planning (formerly known as Pole de Dakar), where he supported African countries in the development of their education sector policy, from sector-wide analyses to evidence-based policy formulation, using different

sources of data. He particularly coordinated the technical support to the countries in the development of their education sector policy, and was involved in the policy dialogue with decision makers, as well as in the capacity development of Senior Staff of Ministries of Education in various areas of Education sector analysis and planning. He also led different analytical works, as well as knowledge productions and methodological tools development.



**Dr. Dimitri Sanga** | Director of the UNESCO MRO for West Africa-Sahel

Dr. Sanga is currently the Director of the UNESCO Multisectoral Regional Office for West Africa-Sahel. Prior to UNESCO, he served as Director of the Sub-regional Office for West Africa of the United Nations Economic Commission for Africa (ECA). In these capacities and formerly, he closely worked with the main regional economic communities (RECs), intergovernmental bodies, the private sector, and civil society organizations to foster economic and social development of West African member States towards regional integration. Before joining West Africa, he served the Commission as Director of the African Centre for Statistics. Prior to joining the United Nations, he was

Senior Economic Statistician at Statistics Canada occupying several posts in areas such as price statistics, national accounts and household surveys undertaking and analysis. He was also part time Professor of economics, econometrics, and statistics in a number of Canadian universities namely Laval, Sherbrooke and Ottawa. He has substantively published in refereed journals with special interest in index number theory and practices. An elected member of the International Statistical Institute, he currently serves on the Editorial Board of the African Statistical Journal. He holds a Ph.D. in Economics, Masters in Economics, and a Bachelor in Engineering from Laval University in Quebec, Canada.

## BIOGRAPHIES



**Dr. Douglas Ncube** | Research Fellow of UNISA

Douglas Ncube holds a PhD in Agricultural Business and Management (researched on the impact of Structural Adjustment Programmes on agricultural production and marketing strategies in Sub Sahara Africa: a case study on Zimbabwe) from the University of Derby in England. Currently is an Agricultural Consultant; Research Fellow with the University of South Africa (UNISA) and is presently contributing research for the African Union 2063 Agenda on UNISA's behalf.

PhD and master's degrees Supervisor (UNISA, University of the Free State and University for Peace) and part-time lecturer in Agribusiness Management. Formerly Chief of Crop Production (Ministry of Agriculture, Zimbabwe). Member of both the African and International Associations of Agricultural Economists.



**Professor Eddie Mwenje** | Vice Chancellor of Bindura University of Science Education (BUSE)

Professor Eddie Mwenje is the Vice Chancellor of Bindura University of Science Education (BUSE). He is a full Professor of Microbiology and Biotechnology. He Obtained his PhD in 1994 at the University of Birmingham in the United Kingdom. He holds an MBA from the National University of Science and Technology (NUST) and a Bachelor of Science honours degree in Biological Sciences from the University of Zimbabwe. Prof. Mwenje has worked at the Birmingham University (BU), University of Zimbabwe (UZ) and at the National University of Science and Technology (NUST). Professor Eddie

Mwenje serves on local, regional and International Boards. He serves on the Governing Council of the African Network of Scientific and Technological Institutions (ANSTI) where he represents Southern Africa. Prof. Mwenje is a Board member of the Centre of Excellence in Tree Health Biotechnology at the University of Pretoria in South Africa.



**Ms. Emily Lugano** | Senior Education Officer of UNHCR. Nairobi

Emily Lugano is a Senior Education Officer at UNHCR Regional Bureau Offices in Nairobi. Emily holds a Master of Arts Degree in Urban Geography and a Bachelor of Arts Degree in Education. Prior to Emily joining UNHCR, she worked with UNICEF in Ethiopia and with many other international organizations in Africa. Emily has immense experience in education and humanitarian work, spanning a period of over 20 years. She currently provides oversight technical support in education to eleven countries in the East, Horn and the Great Lakes Region.

## BIOGRAPHIES



**Prof. Fanuel Tagwira** | Permanent Secretary, Ministry of Higher and Tertiary Education, Innovation, Science and Technology Development (Zimbabwe)

Fanuel Tagwira is the Permanent Secretary in the Ministry of Higher and Tertiary Education, Science and Technology Development in Zimbabwe. Previously he was Professor of Agronomy, Dean of the Faculty of Agriculture and Natural Resources and then Vice Chancellor of Africa University. He served Africa University for a combined period of 26 yrs in academic and administrative capacity from 1992 to 2018. Prof Tagwira was a Sabbatical Professor at Purdue University in the United States from June 2014 to June 2015. Prior to joining Africa University in 1992, Fanuel Tagwira was an Agricultural Scientist and Head of Soil Fertility and Plant Nutrition. in the Ministry of Agriculture, Government of Zimbabwe. He served the Ministry of Agriculture for nearly 10 years.



**Mr. Ghaith Fariz** | Director of UNESCO Cairo Office

Mr. Ghaith Fariz has a Ph. D. in Planning from the University of Michigan, USA, specialized in socioeconomic development, socioeconomic-environment dynamics, and gaming and simulation. He is the Director of UNESCO Regional Bureau for Sciences in the Arab States; Cluster Office for Egypt and Sudan and UNESCO Representative to Egypt. Dr Fariz is a strategic planner with extended international experience in the Arab and Asia regions in providing policy advice; planning; programming; and managing large portfolios in the fields of “knowledge societies/economies”, education, cultural development, and socioeconomic development. Also, he is an expert in change management and in piloting UN reform. He has coordinated, directed and substantially contributed to several landmark publications as well as regional and international reports: “Arab Knowledge Reports: 2014 -Youth and Localization of Knowledge”; “2010/2011-Preparing Future Generation for the Knowledge Society”; “2009-Towards Productive Intercommunication for Knowledge”; “Water Governance in the Arab Region- Managing Scarcity and Securing the Future”.



**Prof. Hubert Gijzen** | UNESCO Regional Office for Southern Africa

Prof. Hubert Gijzen holds a PhD in Biotechnology, and has an established career of over 37 years in both academics and in international cooperation in various countries in Africa, Asia, Latin America, and Europe, in a range of senior functions as Full Professor and Chair in Universities, as a Diplomat, Team Leader, Regional Representative, and currently as UNESCO Regional Director and Representative.

Besides his current work for UNESCO, he continues to hold academic positions as full Professor at IHE-Delft Institute for Water Education (since 1995) and at Wageningen University. Hubert has published over 400 articles and books in the fields of water management, microbiology, environmental sciences, biotechnology, and sanitary and environmental engineering. He also covered topics on international cooperation, sustainable development, the MDGs, SDGs and climate change.

## BIOGRAPHIES



**Mr. Imraan Patel** | Deputy Director-General of DSI, South Africa

Employed since 2006 at the Department of Science and Technology, he is currently a Deputy Director-General and represents the department on the social and economic clusters of government. He is a current member of the board of the Water Research Commission, Trade and Industrial Policy Strategies (TIPS) and a past board member of MINTEK and SASSCAL. Prior to joining the DST, he worked at the Centre for Public Service Innovation, an agency of government supporting innovation in the delivery of public services and the Department of Public Service and Administration. He began his working life with a five-year stint at the Workplace Information Group (WIG), a non-governmental organisation supporting trade union followed by three years during the formative years of the National Labour and Economic Development Institute (NALEDI), a think tank to COSATU. At DST, he is responsible for strategically driving a portfolio of investments and policies that advance the social and economic development priorities of government through science and technology-based interventions. Particular areas of focus include science and technology for sustainable development, R&D-led industrial development, environmental technologies, and the Next Industrial Revolution.



**Mr. Jean-Paul Adam** | Director for Technology, Climate Change and Natural Resources Management, United Nations Economic Commission for Africa

Jean-Paul Adam is the Director for Technology, Climate Change and Natural Resources Management in the United Nations Economic Commission for Africa. Prior to taking on this role, he served in the Government of the Republic of Seychelles in several Cabinet positions. He was Minister of Health from 2016 to 2019. He served as Minister of Finance, Trade and the Blue Economy from 2015 to 2016 where he negotiated a debt for climate change adaptation swap and launched the process for Seychelles to become the first issuer of a Blue Bond. Between 2010 and 2014, he was Seychelles' Minister of Foreign Affairs, where he advocated for countries to embrace the concept of the Blue Economy, to improve sustainability for island and coastal countries. He started his career as a career diplomat in the Ministry of Foreign Affairs between 2001 and 2004. He is a holder of a Masters in International Political Economy from the University of Manchester (UK) and a BA in English Literature and French from the University of Sheffield (UK).



**Mr. Jemal Beker Abdula** | Director of CSIR

Mr. Jemal Beker Abdula, State Minister of Innovation and Technology of the Federal Democratic Republic of Ethiopia since 2018. Prior to that Mr. Abdula is Deputy head of Mission of Ethiopia Embassy in Australia in between 2014-2018. Moreover, he served in the Ministry of Foreign Affairs of the Federal Democratic Republic of Ethiopia for five years in different roles up to Director for the Middle East Department. Previous to my diplomatic career, he worked as Conflict Resolution and Community Participation Director of Somali & Oromia Regional State (2006-2008), Technical Vocational and Training Chief Consultant of Somali Regional State Technical and Vocational Institute (2005-2006) and Programme Coordinator for Somali Regional State Women Affairs (2004-2005).

Mr Abdula holds a Bachelor's Degree in English from Haramaya University of Ethiopia and a Master's Degree of Arts with Merit in Transformational Leadership and Change from University of Greenwich, United Kingdom.

## BIOGRAPHIES



**Ms. Laylee Moshiri** | Representative of UNICEF in Zimbabwe

Ms. Laylee Moshiri is the UNICEF Representative in Zimbabwe since March 2019, prior to which she served as UNICEF Representative in Armenia, Tajikistan, and Senegal, during the period 2008 to 2019. Her career with UNICEF began in Iran in 1993 as National Officer in various capacities before taking on an international posting with UNICEF Afghanistan in 2003 in Field Operations and Emergency.

Prior to joining UNICEF, she worked as Hospital Epidemiologist at the CIGNA Hospital in Los Angeles, and later as researcher and data management specialist at the Centre Hospitalier Universitaire Vaudois in Lausanne, Switzerland from 1987 to 1992. Laylee received her Bachelor's and Master's (Epidemiology) degrees from the School of Public Health at the University of California, Los Angeles.



**Mr. Mahama Ouedraogo** | Director of HRST, AUC

Mahama Ouedraogo holds a PhD in plant breeding from Texas A&M University. He served as acting Director of the Semi-Arid Food Grain Research and Development and Executive Secretary of the African Union Scientific Technical and Research Commission before heading the science and Technology division at the AUC. He is currently the director of the department Human resources science and Technology (HRST), of the African Union Commission. In these capacities, he oversees the implementation of various African Union decisions on Science and technology, including the Science Technology and Innovation strategy for Africa (STISA-2024) and the flagship programs.

For the past 6 years he has been contributing towards the African Space Policy and Strategy which were adopted by the African Head of States and Government in January 2016, and the current focus is on the development of the governance for the effective implementation of this continental space policy. Under his purview is the African Observatory for Science Technology and Innovation based in Malabo, Equatorial Guinea.



**Prof. Martiale Zebaze Kana** | Head of Science Unit, UNESCO Regional Office for Southern Africa

Martiale Zebaze Kana is an experimental physicist and researcher with extensive experience in STEM education and renewable energy. He is currently the head of science, UNESCO Regional Office for Southern Africa. He was previously the Chief of Section, Innovation and Capacity Building in Science and engineering at UNESCO Headquarters in Paris where he also served as executive secretary of the International Basic Science Programme. Prior to joining UNESCO, he was the Deputy Provost, College of engineering and Technology, Kwara state university, Nigeria. He was also the UNESCO

Chairholder in alternative energy in the same institution. Martiale Zebaze Kana has been a visiting professor in many universities and research laboratories. His research focuses on experimental studies of inorganic, organic and hybrid devices with special interest on devices on flexible or stretchable substrates in the field of renewable energy. He holds a PhD degree in experimental Solid State physics.



## BIOGRAPHIES



**Eng. Martin Manuhwa** | President of FAEO

He is the President of the Federation of African Engineering Organisations (FAEO). He is the Chairperson of the Chinhoyi University of Technology (CUT) Council. He is Managing Consultant of the Zimbabwe Africa Infrastructure Development Group (ZAIDG), a company that specializes in engineering procurement and construction project management (EPCM) and consulting engineering. ZAIDG works with Hatch Africa (Pty) Ltd in Zimbabwe to deliver infrastructure solutions in the power industry, mining and public arena. His company, ZAIDG are together with Hatch, the technical advisors on the Kariba Extension (now successfully commissioned) and the Hwange Power Station Expansion projects. He is currently a Doctoral Associate at the University of Cape Town where he is researching on the link of ICTs in the Industrial 4.0 Revolution and Productivity in Engineering Projects. He teaches Big Data Analytics and Software Project Management at the National Defence University, he has taught Management Information Systems for MBA graduate students at the University of Zimbabwe and at the Bindura University of Science Education.



**Prof. Martin Oosthuizen** | Chief Executive of SARUA

Martin is the Executive Director of the Southern African Regional Universities Association (SARUA), an association that promotes regional collaboration in the higher education sector in the SADC. He is also the Chief Executive Officer of the Cape Higher Education Consortium (CHEC), which promotes collaboration between the four universities in the Western Cape. Previously, Martin served as Deputy Vice Chancellor for Teaching and Learning at North West University. Martin has been extensively involved in national and institutional projects relating to standards setting, quality assurance and qualifications design in the South African higher education sector. He served on the South African Higher Education Quality Committee from 2012 to 2018 and chaired its Accreditation Committee from 2015 to 2018. He is an international reviewer for the Oman Academic Accreditation Council, and, as an international reviewer, has contributed to various institutional reviews for the Quality Assurance Agency in Scotland.



**Dr. Maxwell Otim Onapa** | Director Science, Research and Innovation at the Ministry of Science, Technology and Innovation (Uganda)

Dr. Maxwell Otim Onapa is the Director Science, Research and Innovation at the Ministry of Science, Technology and Innovation (MoSTI). He previously served as the Deputy Executive Secretary of Uganda National Council for Science and Technology (UNCST) for 13 year; from 2006 to 2019 during which period he provided leadership in the management of science, research and innovation.

He formerly worked as a biomedical researcher for over 14 years. Dr. Otim holds a Bachelor of Veterinary Medicine (Makerere University), a Masters of Science (Free University of Berlin) and a PhD (University of Copenhagen) in which he majored in molecular epidemiology and immunodiagnosics. He is also an MBA graduate (EASMI) and has a Diploma in ICT Leadership and Knowledge Society development (Dublin City University).

## BIOGRAPHIES



**Ms. Mmampei Chaba** | Chief Director for Multilateral and Africa engagements of DST, South Africa

Ms Mmampei Chaba's current responsibilities include strategic management of South Africa's partnerships with global multilateral and African Science, Technology and Innovation organisations and African bilateral partnerships. Before occupying this post, she served as a Director: Multilateral Cooperation from 2006 – 2010 within the DST and as a Deputy Director in Multilateral Cooperation from 2004 – 2006. She was also seconded to the United Kingdom in 2008 on DST's behalf to support the partnership between South Africa and the Seed Foundation, which support global innovations. Ms Chaba has also served as a Medical Scientists for a period of five years (1999 – 2004), for the national Department of Health of South Africa. She obtained her BSc degree in Chemistry and Biochemistry from the University of Cape Town, her honours degree in Genetic Epidemiology and her Masters in Business Management: Responsible Leadership, from University of Pretoria.



**Mr. Mokhtar Sellami** | Ministry of Higher Education and Scientific Research, Algeria

Prof. Mokhtar sellami, is in charge of STI Implementation in the Ministry of Higher Education and Scientific Research with recent experience of ten years in research programming and evaluation followed by five years in technological development and Innovation. He holds the doctorate in computer science at the university of Grenoble (France) in 1980 and investigate research areas in artificial intelligence and logic programming with more than one hundred of ranked publications. At continental level, he set up the Pan African institute of water science and energy (including climate change) in Algeria and initiated many international cooperation programs in the framework of bilateral cooperation and AU-EU partnership through the High-Level Policy Dialogue (HLPD Bureau). Recent tasks are on co-leading and coordinating H2020 AU-EU programmes on Climate Change and Sustainable Energy (CCSE) and FNSSA (Food and Nutrition Security and Sustainable Agriculture). Other activities of interest are supervising and facilitating incubators implementation, Laboratory of Fabrication (FabLabs) animation and the creation of startups.



**Prof. Moses A. Cho** | Research group leader of CSIR

Prof Moses A. Cho is the Precision Agriculture research group leader at the Council for Scientific and Industrial Research (CSIR) and a professor with the plant and soil science department, University of Pretoria. He holds a Ph.D. degree in remote sensing of vegetation from Wageningen University and the International Institute from Geoinformation Science and Earth Observation, The Netherlands. His research focus involves; Developing Earth Observation tools and applications that support planning and decision making for precision farming and biodiversity conservation. These include the use of satellite and drone remote sensing for assessing crop growth and stress, discriminating crop/vegetation types, mapping vegetation change (e.g. bush encroachment and alien species invasion) and understanding the impact of global change on vegetation systems e.g. drought. He is a National Research Foundation (NRF) rated researcher and an Associate editor for the International Journal of Applied Earth Observation and Geoinformation. He has published over 100 journal and conference articles.

# BIOGRAPHIES



**Mr. Moses Tapfumaneyi Mukabeta** | NPO - Education of UNESCO ROSA

Mr. Moses T Mukabeta is currently a National Professional Officer – Education, with the UNESCO Regional Office for Southern Africa (ROSA). My areas of work in UNESCO include TVET, Literacy, Inclusivity and am currently supporting work on Teachers and Higher Education. Prior to working with UNESCO, I worked in the education sector as a Teacher, Teacher Educator, policy development work with MoE Head Office and at university level. In addition, I worked with Save the Children International Education Unit in Zimbabwe and the region. I hold a M.Ed. (Leeds). I have a passion for teacher continuous professional development issues, and am finalising a PhD

thesis on this area.



**H.E. Mukudzeiishe Madzivire** | Incumbent Child President of the Republic of Zimbabwe

H.E. Mukudzeiishe Madzivire, the incumbent Child President of the Republic of Zimbabwe is a pianist, composer, poet, novelist and orator born and raised in Bulawayo, Zimbabwe. He was awarded a scholarship by the British Council to study at the Zimbabwe Academy of Music where he studied piano and trumpet. In 2019, he was voted the Overall Best Speaker of the NUST-Webb British Parliamentary Debate Championships. He is the author of 2 books: *By the Still Waters*, an anthology of poetry published online and *Inscriptions*, a collection of prose and poetry with a foreword by the Minister of Primary and

Secondary Education, Honourable Paul Mavima that was recognized amongst the Top 5 books of 2018 by Billionaire Publishers. He has been described as a "modern day Shakespeare" by Marshal Chiza, an author, entrepreneur and motivational speaker and as engaging issues "sometimes with a playfulness that is reflective of his age but most of the time with a deep philosophical understanding. His role models include Antonio-Guterres, Secretary-General of the United Nations, Nobel Prize for Literature laureate Wole Soyinka and Nobel Peace Prize laureate Malala Yousafzai.



**Mrs. Ndong-Jatta** | Director of UNESCO BRENDA in Dakar

Mrs. Ndong-Jatta holds a BA (Honours) in Education, English and History obtained from Bayero University (Nigeria) in 1980 and M.Sc. in Educational Leadership obtained from Vanderbilt University, Nashville, Tennessee (USA) in 1984. She also holds a certificate in Educational Policy Analysis, Development Studies and Evaluation from Harvard University, Boston (USA) in 1999. Mrs. Ndong-Jatta joined UNESCO in September 2004 as Director of the Division of Basic Education in the Education Sector at Headquarters where she was responsible for policy development, research and convening of experts on basic education related issues, literacy and early childhood development.

In July 2008, Mrs. Ndong-Jatta was appointed with promotion to the post of Director of the UNESCO Regional Bureau for Education in Africa (BRENDA in Dakar Senegal), which in November 2013 was transformed to the UNESCO Multisectoral Regional Office for West Africa (Sahel) within the context of the reform of the field network in Africa, and UNESCO Representative to Senegal, Burkina Faso, Cape Verde, Gambia, Guinea Bissau and Niger.



## BIOGRAPHIES



**Dr. Peggy Oti-Boateng** | Director of Science Policy and Capacity Building Division, UNESCO

Dr. Peggy Efua Oti-Boateng is the Director for the Division of Science Policy and Capacity Building at UNESCO Headquarters, in Paris, France, with the responsibility for providing leadership and foresight for the global agenda on science technology and innovation and capacity building in science and engineering for sustainable development. From 2010-2018 she served as Regional Africa Senior Programme Specialist for Science and Technology in the UNESCO Regional Office for Southern and Eastern Africa, in Zimbabwe and Kenya respectively. Until 2010, she was Director of TCC, College of Engineering, KN University of Science and Technology, Kumasi, Ghana, forging national and international strategic research and innovation alliances.



**Ms. Philippa Ngaju Makobore** | Department Head of the Instrumentation Division at the Uganda Industrial Research Institute

Philippa Ngaju Makobore is the Department Head of the Instrumentation Division at the Uganda Industrial Research Institute (UIRI). She received a BSc in Electrical Engineering from the University of Alberta, Canada in 2008 and a Professional Certificate in Embedded Systems Engineering from the University of California, Irvine in 2016. She is currently pursuing a Master of Science in Engineering (MSE) with a concentration in Biomedical Engineering at Purdue University, West Lafayette, USA.

Her core expertise is the design of electronic applications that are appropriate and affordable for low resource contexts in healthcare. She is the project lead for UIRI in the UBORA consortium that comprises of East African and European partners that have developed an e-infrastructure for the collaborative design and development of open source medical devices. Under the UBORA project the Instrumentation Division has designed a portable infant warmer for neonates with hypothermia.



**Mr Ramesh Bheekho** | Deputy Permanent Secretary, Ministry of Technology, Communication and Innovation (Mauritius)

Mr Ramesh Bheekho joined the Administrative Cadre in 2001 as Assistant Permanent Secretary and promoted Deputy Permanent Secretary in 2019. He has served in different Ministries and has, thus, acquired wide experience in the Government machinery, formulation and implementation of public policies as well as strategies in the ICT sector. He holds a MSc in Public Sector Management from the University of Technology, Mauritius.

# BIOGRAPHIES



**Hon. Raymore Machingura** | Deputy Minister of Higher and Tertiary Education, Innovation, Science and Technology Development (Zimbabwe)

Hon. Raymore Machingura, is the Deputy Minister of Higher and Tertiary Education, Innovation, Science and Technology Development. He is the Member of Parliament for Chipinge Central Constituency in Manicaland Province. Hon. Machingura holds a Diploma (D) in Telecommunications from the Posts and Telecommunications Corporation (PTC) in Zimbabwe, A diploma in telecommunications management from Cable and Wireless College (UK), Advanced Technical training certificate (Germany), Full Technological Certificate T1-T5 (City and Guilds Institute, London), Further Education

Teachers Certificate (Harare Polytechnic), Certificates in Finance for non-Financial managers, T5 organisation and Planning, GSM Siemens, and Project Planning. Before his appointment as Deputy Minister, Hon Machingura was Chief telecoms technician doing lecturing and operation duties from 1985 to 1991 after this he did national installations planning up to 1996. He was operations manager for Manicaland South until 2008.



**Prof. Robson Mafoti** | Chief Executive of SIRDC

Prof. Robson Mafoti is the Chief Executive Officer of SIRDC since July 2003. He is a renowned industrial scientist who holds several international patents. He holds a B.Sc. degree (Chemistry and Biology), M.Sc. degree (Analytical Chemistry), and M.Sc. and Ph.D. degrees (Organic Chemistry). He has published extensively in refereed journals and is a member of the American Chemical Society, Phi Lambda Epsilon Chemical Honour Society and the Polymeric Materials, Science and Engineering Society. Prof. Mafoti has had a distinguished career working in USA where he held various research leadership positions.

His global work experience covers research and development, patenting, intellectual property licensing and commercialisation of research outcomes. He made international impact in the automotive, aerospace, adhesives and sealants, decorative surfaces for household applications, and detergents areas. He is a Board member for several organisations including the 26-member Presidential Advisory Council (PAC).



**Dr. Romain Murenzi** | Executive Director of TWAS

Romain Murenzi serves as the executive director of TWAS ([twas.org](http://twas.org)) and oversees the administration of OWSD, the InterAcademy Partnership and GenderInSITE. Murenzi initially joined TWAS in 2011 for five years. He then spent 14 months at UNESCO, HQ, directing the Division of Science Policy and Capacity Building in the Natural Sciences sector.

He served as Rwanda's Minister of Education, S&T and Scientific Research (2001-2006), and as Minister in the President's Office in Charge of S&T, and Scientific Research, with responsibilities including ICT (March 2006 - July 2009). In 2009 he was a senior scholar at AAAS Center for Science, Technology and Sustainable Development; he served as director from 2010-2011. He holds a BSc from National University of Burundi in 1982, MSc (1986) and PhD from Catholic University of Louvain in Belgium (1990).

## BIOGRAPHIES



**Dr. Saidou Sireh Jallow** | Chief of Education, UNESCO Nairobi

Dr. Jallow started working with UNESCO as consultant in 2009 at the UNESCO Regional Bureau for Education in Africa (BREDA) in Dakar, Senegal before being appointed Education Programme Specialist and posted to the then UNESCO National Office in Abuja, Nigeria in 2012. He participated in the transformation of the National Office into a Regional Office covering 8 countries in West Africa. Saidou was in 2013 appointed to the position of Senior Programme Specialist & Head of Education Sector of the UNESCO Abuja Region where he served in that capacity until July 2018 advising Member State on education policy reforms and supporting the building of capacities in Teacher Education, Technical Vocational Education and Training (TVET) and Higher Education. In August 2018, Saidou was transferred to the UNESCO Regional Office for Eastern Africa and the Indian Ocean where he serves as the Senior Programme Specialist & Chief of Education for the region. Dr. Jallow has just completed serving as Officer-in-Charge (OIC) of the UNESCO Juba Office, South Sudan.



**Dr. Samuel Tetteh Partey** | Programme Specialist of UNESCO ROEA

Dr. Samuel Tetteh Partey works as a Programme Specialist for the United Nations Educational, Scientific and Cultural Organization (UNESCO). His primary role is to support Member States in Eastern Africa and the adjacent Indian Ocean Commission countries in developing effective Science, Technology and Innovation policies and building capacities of relevant institutions to address critical and major challenges ahead for achieving the 2030 Agenda and 2063 Agenda such as building resilient infrastructure, promoting inclusive and sustainable industrialization and fostering innovation. He holds a PhD in Environmental Biology from the University of Manchester, UK with multidisciplinary experiences in science-policy, agricultural and rural development and climate change.



**Prof. Sheila Dinotshe Tlou** | RN, FAAN.

Dr. Sheila D. Tlou has just made Avance Media's list of 100 Most Influential Women in Africa is the Co-Chair of the Global HIV Prevention Coalition and the Co-Chair of the Nursing Now Global Campaign. From 2010 to 2017 she was Director of the UNAIDS Regional Support Team for Eastern and Southern Africa. She is a former Member of Parliament and Minister of Health of the Republic of Botswana (2004-2008). She is also former Professor of Nursing at the University of Botswana and Director of the WHO Collaborating Centre for Nursing and Midwifery Development in Primary Health Care for Anglophone Africa. She has conducted research and taught courses to nursing, pre-medical and social science students on Gender issues relating to HIV/AIDS, Sexual and Reproductive Health and Rights, and Ageing and Older Persons. She has played a key role in the development of national nursing and medical education curricula, working to broaden the scope of Health Sciences education in her home country of Botswana.

## BIOGRAPHIES



**Dr. Sibongiseni Thotsejane** | South Africa Presidential Commission on 4IR

Dr. Sibongiseni Thotsejane completed her PhD in Information Systems at University of Cape Town in collaboration with Ryerson University, Canada. She is on the SA Presidential Commission on 4IR. She is one of the 2019 Mail & Guardian Women Changing South Africa in STEMI. She is the first and former CIO of V&A Waterfront. She was hosted by Institute of Directors and Scottish Business Network sharing insights on Big Data Analytics and opportunities in Aerospace, Maritime and Defense sectors in South Africa at the 2018 Scottish International Week. She did a program by Innovation Hub and Maxum in collaboration with University of Baltimore in USA for Women in ICT. She and her Team implemented Innovative Digital Analytics and innovative services for companies such as: PruHealth (UK), Santam, South African National Defense Force, ARM-SCOR, Rand & Bullion, Cape Town Activa and Standard Bank. She was a Programmer for Increase Network Solutions in Holland.



**Dr Solomon Benor** | Director General for Science and Research Affairs, Ethiopian Ministry of Science and Higher Education

Dr Solomon Benor is currently working at the Ethiopian Ministry of Science and Higher Education with a position of Director General for Science and Research Affairs. He is Plant Biotechnologist with an extensive research experiences on biodiversity management, plant breeding, food security, urban agriculture, and environmental sciences both at morphological and molecular levels. Before joining the Ethiopian Ministry of Science and Higher Education, Dr Solomon served as founding member, and lead researcher at the Department of Biotechnology, Addis Ababa Science and Technology University. Dr Solomon has over twenty two years of extensive national and

international research work experiences; namely he worked as a Post-Doctoral Scientist at Biosciences for Eastern and Central Africa (BeCA), Kenya; Research Fellow at Leibniz Institute of Plant Genetics and Crop Research, Germany; TWAS Research Fellow at Nanjing Agricultural University, China; Lecturer at Hawassa University, Ethiopia; Researcher at Norwegian Institute of Gene Ecology, Norway; and Plant Breeder at Sirinka Agricultural Research Center, Ethiopia.



**Mr. Toneo Tonderai Rutsito** | Founder and Editor in Chief of TechnoMag

Toneo Tonderai Rutsito is the founder and Editor in Chief of TechnoMag and TechMag.TV, which are Zimbabwe's leading online technology magazine and online broadcasting platform. He is also a co-founder of an association called ZOCC (Zimbabwe Online Content Creators) an association that represents more than 100 prominent online players in Zimbabwe towards ethical, responsible and credible content creation. He started his media career at the Herald, state owned media house, as a freelance Journalist and later on became a columnist for the first ever tech column in print media (TechSpot) whilst he increased the same footprint to Newsday, Zimbabwe's biggest private owned daily newspaper. Toneo is a multiple award winning tech journalist, under the Ministry of Information Communication and Technology (ICT Achievers Awards) and Zimbabwe Union of Journalist (ZUJ) as the Top national ICT journalist.

## BIOGRAPHIES



**Dr. WILHELMINA QUAYE** | Director of CSIR

Dr. Wilhelmina Quaye obtained her PhD in Rural Sociology from Wageningen University in the Netherlands in 2012. She had her MPil (2002) and BSc (1993) in Agricultural Economics from the University of Ghana, Legon. She has over 30 peer reviewed publications and has attended several international conferences. She is an African Women in Agricultural Research and Development (AWARD) fellow and Monitoring and Evaluation Specialist for Sustainable Development and Relief Associates (SUDRA). She has consulted for UNDP Ghana Cocoa Platform, African Forum for Agricultural Advisory Services (AFAAS) on Gender and Tradeline Consult on Household Dietary Diversity Scores. Her areas of specialization include

Socio-economic related research, Monitoring & Evaluation, Policy and Gender Issues. She has over 20 years working experience both in research and practice. Currently, she is the Director of CSIR-Science and Technology Policy Research Institute in Ghana.



**Dr. Yumiko Yokozeki** | Director of UNESCO International Institute for Capacity Building in Africa (IICBA).

Dr. Yumiko Yokozeki is the Director of UNESCO International Institute for Capacity Building in Africa (IICBA). Yumiko is a specialist in education. She started her career as science/mathematics teacher in Kenya and Zimbabwe. Then she joined UNICEF as an education officer, and moved to JICA where she played a leading role in Japan's educational cooperation. After 17 years with JICA, she moved back to UNICEF to work as Education Chief in two Africa Regional Offices. Since 2015, she has been the Director of UNESCO IICBA, based in Addis Ababa, Ethiopia. While her specialization remains in Africa, she has working experiences in Asia/Pacific, South Asia,

Middle East/North Africa, and Latin America. She has M.Ed. from Harvard Graduate School of Education and Ph.D. from Institute of Education, University of London.



**Zoe Titus** | Director of Namibia Media Trust (NMT)

Titus is presently the Director of the Namibia Media Trust (NMT) which, as of 2018, is the first African organisation to contribute financially to the sustainability of the Unesco Guillermo Cano World Press Freedom Prize. In understanding the potential of the media, she has contributed to groundbreaking initiatives to making a positive and profound change on the lives of people in the region. She serves in advisory capacities to several regional and international initiatives, including ARISA (the Advancing Rights in Southern Africa project), and is co-founder of the massive open online teaching platform on media policy in Africa, the Jeanette Minnie Memorial

Course in African Media Policy in the Digital Age, hosted by the Link Centre and Wits online platform, edX.

# WINNERS PROFILES

Below are the winners profiles on The African Science Technology And Innovation Forum 2020 Innovation In Action Competition.



**Name:** Mr. Shermar Stuart (South Africa)

**Project:** Prime Technologies

We have developed the Prime, which is the future of the way we connect to each other and the world around us but more important than that It is changing the way that we imagine and define what connection is. The device allows users to stream and access content for free - without the traditional use of ISP data - Dataless Streaming. It is our foundation for an African Internet, smart cities, digital education and the digital informal economy. We have developed this device through a need to solve African issues from an African

Context by creating markets and solutions, with an Africa first approach, that are catered to our environment and to address our challenges as opposed to the traditional approach of "Plagiarism" - Copying and pasting first world solutions or expertise while crossing our fingers. The Future is African.

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**Name:** Ms. Kutlwano Ngwarati (South Africa)

**Project:** Paper less receipt (UN Amrue)

Over 145 million trees are used every year to produce the global consumption of paper receipts and with over 85% of receipts being thrown in the bin, this produces 10 million tons of waste every year. Amrue is an intelligent receipt that combats this waste. Our technology allows customers to view their receipt directly in their banking app, thus doing away with paper. We partner with banks and retailers to integrate our solution to the customer's banking app and the retailer's point of sale devices. This way, when a customer

makes a purchase with their bank card their receipt is automatically delivered to their banking app, enabling opportunities for banks and retailers to gain insights and engage the consumer post purchase. Customers can stay organized with easy access to their receipts but more importantly, using our technology reduces the need for deforestation, protecting our planet from further global warming.

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## WINNERS PROFILE



**Names:** Ms. Odette Bahati (Rwanda)

**Project:** Drycard

DryCard is an affordable device that enables small scale farmers to measure the moisture content of their produce and therefore prevent mold growth and post-harvest losses. We have distributed more 10,000 Drycards to smallholder farmers in Rwanda.

Retailing at below \$1, DryCard is an inexpensive device, for determining if dried food is dry enough to prevent mold growth during storage. The tool is intended for smallholder farmers who cannot afford the expensive moisture meters in the market. The farmer simply places the DyCard and a sample of the dried product in an airtight contained such as a sealed plastic bag or jar and after a few minutes the card's indicator will display a measure of the equilibrium relative humidity. The farmer then matches the colour of the strip with the scale on the card. A pink colour on the strip means the product is too wet for safe storage, while blue or grey means it is adequately dried.

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**Name:** Dr. Pulane Nkhabutlane (Lesotho)

**Project:** Superfoods (Trade names *Bohlokoo* and *Bohlale*) Sorghum Production

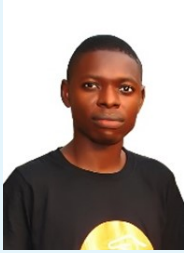
The potential of agro-processing in Lesotho, using sorghum, pumpkin and pumpkin seeds to produce sorghum muesli and sorghum baked products is not fully exploited. Bohlokoo and Bohlale are startups incubated in the Innovation Hub of the National University of Lesotho. Their mandate is to process sorghum to manufacture and market healthy, nutritious and convenient products for the health conscious and people on-the-go within and outside Lesotho. The project has final products or technology prototypes developed and tested over a period of time and has established a strong management team in place to execute on the plan. The team has experience with the manufacture, testing and optimization of quality and shelf life of Sorghum products and has identified market segments which already show signs of a good customer base and clear signs of revenue growth and obvious pathway to profitability. The female graduates seeking entrepreneurial opportunities in food manufacture and product research have been engaged.

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## WINNERS PROFILE



**Name:** Mr. Uche Kenneth Udekwe (Nigeria)

**Project:** NATAL CARES

According to the United Nations, Nigeria is one of the most dangerous countries in the world to give birth. The country accounts for 19% of all maternal deaths on the Planet. UNICEF makes it much clearer by stating that “Every single day, Nigeria loses about 2,300 children under five and 145 women of childbearing age. This makes the country the second largest contributor to the under-five and maternal mortality rate in the world.”

**NATAL CARES**

Natal Cares is a social enterprise which leverages on the power of mobile technology and low cost innovation to combat maternal and infant mortality in Nigeria. Primarily focusing on providing healthcare, medical monitoring and emergency services to at-risk pregnant women and nursing mothers reaching them in their hometowns and villages and advocating for better access to healthcare at primary healthcare centers especially in Under-served communities and IDP Camps.

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**Name:** Mr. Emeka Joseph Nwagboso (Nigeria)

**Project:** Project PINK BLUE

Nigeria is a major contributor to the overall cancer burden in Africa with 115,950 new cases of cancer and 70,327 cancer deaths in 2018. Breast cancer kills over 31 Nigerian women every day, cervical cancer is 99% preventable, but over 29 women die of cervical cancer every day and prostate cancer kill about 15 Nigerian men every day (WHO, 2019). This increasing deaths is as result of late detection of cancer.

To reduce these cancer deaths, **Project PINK BLUE** established a **Patient Navigation Programme**, using technology-driven web-based application, telephone and trained nurses to help women find cancer on time and have access to treatment.

Every month, we receive over 513 calls from people, looking for the best place to have cancer screenings, the working radiotherapy machine, the best cancer doctor, and where to find localized nutrition for cancer care. Over 2,000 women have benefitted from our innovation in 2018/2019.

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## WINNERS PROFILE



**Name:** Prof. Darelle Van Greunen (South Africa)

**Project:** Mobile App, Ncediso™

The mobile App, Ncediso™ originated from the need for community healthcare workers including nurses and clinic practitioners to be upskilled in locations where access to basic healthcare, First Aid skills and clinics are scarce. The application allows for the early detection of various disabilities and diseases among children, child nutrition, chronic disease management, information on infectious and non-infectious diseases, First Aid and various other conditions. The App is also used to assist the ordinary person who has limited access to healthcare facilities to make an easy assessment of specific symptoms. Health workers have information to more accurately diagnose chronic health conditions such as diabetes, tuberculosis and acute malnutrition in children. The App is unique as it contains ailments and medications relevant to the African continent only. Given the connectivity constraints, it can be used in offline mode, requiring no data whilst not storing any personal information.

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**Name:** Mr. Esabu Anthony (Uganda)

**Project:** Conservation agriculture for climate change mitigation and enhancement of food security in Uganda.

Climate change is impacting agriculture productivity in Uganda. Smallholder farmers, who supply 80% of the produce in the country, are among the most vulnerable to its effect. Conservation agriculture can offer smallholder farmers a way to better absorb climate shocks and suitably increase crop yield and income. However, lack of information and high costs of implementing CA practices limit smallholder farmers in Uganda from Adopting CA. our company addresses the main barriers preventing smallholders in Uganda from widely adopting CA practices by providing investment needed to implement CA practices in smallholdings through a partnership agreement, with production shared between the smallholder and the company. Secondly engaging smallholders in implementation, providing them with an additional inputs from the start, and as such train them in CA practices so they can expand such practices beyond the scope of the partnership and finally developing markets to sell the shared production.

The benefits from CA include; Storage of at least ten times more carbon over the next 15 years than the current vegetation in degraded pastures and lastly Increase in smallholders' income by at least 52% if implemented in 1 hectare, and by 156% if expanded in 3 hectares.

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## WINNERS PROFILE



**Name:** Mr. Henry Ngale Foretia (Cameroon)

**Project:** Mobile App, PFMS platform,

The current and future global population growth is driving up and our demands for protein required to feed humanity has to place livestock producers under pressure to increase production, yet accurate industry information, disease outbreaks and readily available markets devastate the economies of millions of farmers especially rural women and youths who are mostly small flock owners to remain poor despite being in farming for decades because no easy way existed in bringing together Livestock Producers, merchants (middlemen), Veterinary professionals and final consumers.

We are using (ICT) to bridge this necessity with our PFMS platform, an all in one-stop SMS, USSD, web and a mobile app build with the fourth industrial revolution technologies where users buy and sell livestock; instantly diagnosed Livestock on their phones or consult an expert Veterinarian in real-time to, increase farmers production plus revenue, connect consumers sustainably for Economic, social and environmental development.

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**Name:** Ms. Roza Alemayehu (Ethiopia)

**Project:** Walelgn (body electrolyte analyzer)

According to 2018 data, more than 40% of Ethiopian are affected by kidney failure, hypertension and different type of heart disease in every year and currently in Ethiopia, most health care facilities give treat and medication without considering the amount of body salt level. As result, it increases mortality patients come with kidney failure, diabetes, cardiovascular diseases, diarrhea, electrolyte abnormality and blood lose. For example, many research shows that more than 61% of hospitalized patients are affected by

kidney failure, neurological disorder up to death due to improper IV fluid management. But the reason behind those millions of life killer problems are lack of body electrolyte analyzer, even the existing device does not consider the economic potential of many health care facilities. But walelgn used to analyze and interpret the amount of body salt level. It can access with any health care facilities with affordable price and enough spare part.

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