



'Cultivating Future Innovators'

Presents...
The 2nd Annual Somali
STEM SUMMIT

**Nurturing and enhancing knowledge & skills in Science,
Technology, Engineering and Mathematics (STEM)**

Theme:
STEM Skills Development and Sustainability



Dates:
15th - 17th July 2019

Venue:
SAHAL TERMINAL HALL

“

*energise critical
thinking, raise &
promote science
literacy and plant
the seeds for the
next generation*

”



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Opening Remarks



State Minister of Education, Culture and Higher Education

Mr. Abdirahman Mohamed Abdule is the State Minister for the Ministry of Education, Culture and Higher Education of the Federal Republic of Somalia. Mr. Abdule is also a Member of Parliament of the Federal Republic of Somalia.

Before joining the Government, Mr. Abdule served as a Technical Advisor to the National Civil Service Commission. He also served as a Technical Advisor to the Ministry of Education of Puntland State of Somalia, to design the organisational structure and culture to support the achievement of the mission for the Education sector in Puntland. Mr. Abdule also served as an Academic Advisor to Puntland State University, where he provided leadership for curriculum development. State Minister Abdirahman Mohamed Abdule studied at the International Islamic University in Islamabad, Pakistan, where he obtained a BA in Religious Studies and an MA in Education.



Minister of Planning, Investment and Economic Development

Mr. Gamal M Hassan is the Minister of Planning, Investment and Economic Development of the Federal Government of Somalia. He currently serves as a member of the Federal Parliament of Somalia. Prior to this position, Mr. Hassan served as the Ambassador Extraordinary and Plenipotentiary of the Federal Republic of Somalia to the Republic of Kenya.

In 2016, Amb. Hassan was concurrently appointed as the Ambassador to the Republic of Seychelles, Union of the Comoros, and the Republic of Mauritius. He also served as Somalia's Permanent Representative to United Nations Environment Program and UN Habitat, and a Focal Point to Intergovernmental Authority on Development (IGAD), and International Civil Aviation Organization (ICAO).

Before joining the Government, he served as a Senior Political Advisor to the United States Special Representative for Somalia (SRS) on political affairs and related democracy, governance, and human rights issues. Amb. Hassan has also worked for the Government of Canada, Carleton University in Ottawa, and Canada in Ukraine.

Amb. Hassan has studied at Carleton and MOI Universities and obtained BA in Political Science and MA in Diplomacy and Foreign Policy respectively.



Welcome Message

I wish to take this opportunity, on behalf of the Somali STEM Summit organizing committee to welcome you all to the second Somali STEM Summit. It has been a long journey and a collaborative effort to make the summit a reality. The journey officially began in 2017 and we are hopeful it will end when the STEM tree bears fruits for Somalia. Again, I want to welcome you to Mogadishu, the City of resilience and enormous possibilities as we gather on this joyous occasion to lay the foundation for the scientific and economic future of our beloved

country.

As it is known to all of you, Science, Technology, Engineering and Mathematics (STEM) is crucial to educational, technological advancement and economic development in the 21st Century. Many countries continue to advance technologically as a result of the realization on the critical importance of STEM, thus establishing policies, strategies and action plans to secure needed investments in the STEM sector. Enhancing STEM requires partnership between government, private sector and international agencies supporting national development. Even though STEM is coming to Africa only lately, many African countries have embraced it and made it a national priority. Therefore, Somalia can't continue to lag behind and shouldn't be an exemption! The many innovations in the STEM sector, as the evidence shows in other countries, that are in use today have made life for their populations easier, transformed the way of life for their society and STEM contributed towards national development.

The situation in Somalia is quite different than the rest of Africa as Somalia is only now emerging from a prolonged civil war and protracted political instability. The civil strife that lasted more than two decades immensely affected many sectors in the economy and efforts to introduce STEM into the country is slowly taking off.

To provide you a context, the Somali STEM Society came as a result of the realization that Somalia lacked technically savvy labor force that can meet the industrial and economic development needs of the country. Somalia continues to import skilled and semi-skilled labor with reliable production capabilities from neighboring countries and local education entities were not equipped to produce graduates to fill the skill gap.

The Somali STEM Society was formed to provide a platform for advocating, cultivating and nurturing future Somali innovators, developers, thinkers and problem solvers and to raise awareness of public and private sector leaders to invest in the development of this critical need. STEM skilled labor force can only be realized if there is a strong partnership between the public and private sector investing in the future.

As we continue with our programs and activities, we are hoping to help create a new generation of STEM professionals that will harness the process of Somalia's social and economic transformation.

This year's summit will include a series of events aimed at empowering the youth, women and enhancing the quality of the teaching tools through ongoing professional development and seminars for educators. We will also have presentations from renowned local and international STEM experts in the different fields who will be presenting papers relevant to this year's summit theme. In addition, we will have hands-on series of activities planned for youth and all participants during the summit.

The theme for this year's summit is STEM Skills Development and Sustainability and our aim is to set the pace for sound STEM educational programs and practices, and envision long term sustainability by building necessary local capacity and the educational tools needed to maintain the programs. This being the second annual summit, despite regional activities and workshops, we expect to grow the summit more as the word gets out and more public and private entities and practitioners participate.

We understand that education is a lifelong endeavor and everyday provides a new opportunity for learning new things and that's the reason why we welcome you to this event and have the high expectation that we will definitely learn from one other.

Thank you so much for your attendance, participation, and for choosing to be part of this innovative and empowering journey.

Yours

Dr Sadia Siad, Ph.D.,

The Chair of Somali STEM Summit Organizing Committee

About Somali STEM Summit

About the Summit

The Somali STEM Summit seeks to bring together academics, researchers, professionals, entrepreneurs and students to participate actively in STEM activities. The Summit's standing slogan is 'Nurturing and Enhancing Knowledge and Skills in STEM', while this year's theme focuses on STEM Skills Development and Sustainability.

The participants will gain substantial knowledge and skills related to STEM, as well as how these can be applied to achieve economic development, empowerment and sustainability. This annual event marks an important day in the life of Somali innovators, inventors, scientists, entrepreneurs and critical thinkers, both in the public and private sectors.

This three-day Summit will be held from 15-17 July 2019. The goal of the Summit is to promote STEM culture through collaborative approaches between key stakeholders and beneficiaries, as well as to showcase scientific innovations and energize a generation of problem-solvers to stimulate many sectors in the Somali economy.

Programme Breakout:

- Day 1 (15 July) – STEM Skills Development (Youth Skills Day)
- Day 2 (16 July) – Quality STEM Education, Innovation and Economic Development (Keynote Speakers and Presentation of Papers)
- Day 3 (17 July) – Sustaining STEM Development in Somalia (STEM in Context of UN Sustainable Development Goals)

Who should attend the Summit?

People in the field of science, technology, engineering and mathematics and related scientific fields, including students, practitioners, faculty members, entrepreneurs, both local and international NGOs, private STEM companies, and government officials, are all expected to attend.

Why you should attend:

Network

Participants will have the opportunity to network and meet with peers from various STEM fields and make connections throughout the Summit. Participants will meet and converse with scientists, researchers, innovators, entrepreneurs and other professionals, as well as with students of STEM-related fields.

Gain knowledge

The Summit will provide participants with the opportunity to acquire meaningful knowledge in the STEM field through multiple presentations of STEM papers and discussions with presenters.

Delve deeper into the tech world

Participants will gain a deeper understanding of how the tech world works and its

importance in reviving the economy. Participants will also learn about ways of incorporating technology into their professions to achieve optimum results.

Learn how to become a STEM entrepreneur

Whether you have an innovative idea to share or are looking to receive technological tips for industry or investment, the Summit is a great chance to find out more about the many entrepreneurial opportunities in STEM and to learn how companies are profiting from investment in technology.

Market your products and services

The Summit will also provide booths and stands for participants to market products and services, offering a marketplace for sharing your ideas, work and products with others during interactive breakout sessions.

Aims and Objectives

Aim

STEM academic subjects constitute a strong knowledge-base that is critical in the effective performance of many jobs. Increasingly, professions require a strong understanding and competence in STEM subjects.



The aim of the Somali STEM Summit is to encourage and support the development of the next generation Somali scientists, technologists, engineers and mathematicians. By bringing such a wide range of experts from science and business together, the Summit aims to find a way forward to help young Somalis create, innovate and excel in their specialised fields of study and practice. These and other initiatives will improve the overall quality of STEM education, business and industry in the country and keep Somalia up to date and directly engaged with global trends in STEM.

Expected Outcomes

1. Mechanisms will be developed through which STEM skills and education will be implemented to enhance innovation, creativity and inventiveness.
2. National awareness will be raised about the importance of teaching STEM subjects in Elementary, Secondary and Higher Education.
3. Links and collaboration will be forged amongst stakeholders in commerce, industry and STEM education.
4. A platform to enhance knowledge and skills in STEM subjects will be created.
5. Links will be forged between youth and job creators, innovators and policymakers to help create employment opportunities.
6. A sustainable platform will be created to guide the training of STEM teachers, STEM education in schools, and collaboration between ministries and the Somali STEM Society in education, job creation and poverty alleviation.

Summary of Activities



**5+ Highlights - 2018
STEM Conference**



**15+ Paper
presentations**



**50+ Key
decision makers**



**10+ Interactive
breakout sessions**



**20+ Networking
activities**



**35+ STEM skills
exhibitions**



**05+ Plenary
sessions**



**05+ STEM elevator
pitch sessions**

The Approach

Main Conference

Be part of the Main Conference that brings together different professionals to share ideas about STEM, the potential impacts of STEM and how to tap into this potential to advance Somalia's sustainable development. The main event will cover several topics, including:

- Influencing economic growth through STEM skills
- Developing effective and high-quality STEM education and supporting sustainable STEM development and innovation
- Promoting socioeconomic systems and seeding entrepreneurial ecosystems through the application of STEM ideas and presentations of research from academics, innovators and entrepreneurs.



The Future Speaks

Come and hear from the Future at the Summit's session: 'The Future Speaks'. This session will have an interactive format, giving participants the chance to hear from students about their feelings and experiences of STEM, both inside and outside of school, and to reflect on the impact this has had on their academic journeys. Participants and students at this session will be able to discuss together the ways in which STEM education can be further enhanced.



Plenary Sessions

There will be a series of interactive plenary sessions through which youth, educators and other select professionals will meet for round table discussions on STEM.

There will be plentiful opportunities for participants to meet and talk with experts about the infrastructure developed to support students as they pursue industry-level certifications and employment in the field.

Coding Sessions

Students will get first-hand guidance and workshop training on coding, using simple but effective methods and approaches. Coding experts will introduce and guide learners through the interactive coding process.

STEM Skills Exhibitions

Exhibitions will be a major attraction throughout the Summit. Exhibitors will be allocated booths and stands to display their products and services. Participants will have the chance to interact with exhibitors during the breakout sessions as well as on the sidelines throughout the Summit.

Building Pathways to Employment and Economic Self-Sufficiency

The Somali STEM Summit will link students to organisations offering meaningful work experience in technology. These organisations will provide successful applicants with six months of intensive professional development and technology training, leading to a year-long internship or apprenticeship. The Somali STEM Society team will provide a demonstration of the training programme and students will describe their experiences of working with local companies.

Presentations of Papers:

STEM Entrepreneurship, Skills, Innovators and Academia

Leading figures in STEM will give a number of lectures and presentations on STEM-related topics, including talks outlining best practices for improving STEM careers, seeking out entrepreneurial opportunities and making valuable connections.



Changing the Game for Women/Girls in STEM

This session will provide practical strategies for creating more women/girl-friendly STEM environments. The participants will discuss biases and gender inequities in STEM and explore gender and culturally responsive practices that encourage young women to remain interested in training for STEM careers. The session will provide hands-on experience of how to implement these gender-sensitive strategies.

Networking Sessions

Participants will have multiple opportunities to meet with professionals and experts at the Summit, as well as the chance to schedule short meetings and exchange contact information for further collaboration. This session will be open for all participants to mingle freely and discuss important issues concerning their experiences and professional engagements. Participants will also be able to interact directly with potential employers during the session.

Evening Celebration and Gala

The first night of the Summit will be marked with a welcoming celebration and a gala dinner for invited guests and selected participants.

About the Organiser

The Somali STEM Society (also registered as the Somali STEM Association) is an umbrella association for Science, Technology, Engineering and Mathematics (STEM) in all Somali regions. The Society brings together students, researchers, academics, entrepreneurs and other professionals interested and involved in STEM education, innovation and enterprises to create a platform for learning about, contributing, sharing and exchanging STEM knowledge, skills and expertise.

The Somali STEM Society recognises that achieving success in the modern field of technology and science requires the cultivation of transformative, innovative and creative thinking skills necessary for a developing economy. For education to achieve its maximum potential, urgent changes are needed, including steps to eliminate persistent disparities in access to education and achievement, to improve the quality of education and provide learners with the knowledge, skills, attitudes and behaviours necessary for effective lifelong learning.

STEM skills and education have a vital role to play in this transformation and these skills are key for preparing students to meet the high demand for STEM skills in the careers of tomorrow.

The Somali STEM Society believes that improving STEM skills and education is critical in preparing the nation for scientific revolution and advancement.

COMPLETED PROJECTS AND ACTIVITIES, 2017-2018

- ✔ **Built STEM Lab - Centre of Excellence (Nov 2018)**
- ✔ **African Science Week in 7 Somali Cities in 7 Days (7-13 Oct 2018)**
- ✔ **STEM Awareness Week (Aug 26-30 2018)**
- ✔ **Annual Somali STEM Summit (July 10-13 2018)**
- ✔ **Launch of the Somali STEM Society (2017)**

CURRENT AND UPCOMING PROJECTS AND ACTIVITIES IN 2019

- » **Women/Girls in STEM**
- » **Inter-state STEM Competition**
- » **STEM Teacher Training Courses**
- » **Annual Somali STEM Summit (July 2019)**
- » **Launch of STEM Lab - Centre of Excellence**
- » **Africa Science Week in 7 Somali Cities in 7 Days**
- » **Fellowship for Somali Youth in STEM Leadership**

Programme Layout – Science, Technology, Engineering and Mathematics (STEM)

Day One 15 July 2019 – STEM Skills Development (Youth Skills Day)
Venue: Sahal Terminal, KM4, Mogadishu, Somalia

08.30 – 09.00: Registration, Coffee and Networking

09.00 – 10.00: Opening Programme

1) Quranic Recitation

2) Welcoming Remark and Overview of STEM Skills and Education: A Catalyst for National Development and Economic Sustainability –Dr. Sadiyo Siad

3) Opening Ceremony - Embracing Somali STEM Skills and Education

- Head of the Italian Agency for Development Cooperation: Mr. Guglielmo Giordano
- UNIDO - Head of Somalia Programme: Mr. Ygor Scarcia
- Minister of Education, Culture and Higher Education – state minister
- Minister of Planning, Investments, and Economic Development - H.E. Amb. Gamal Hassan

10.00 – 10.25: STEM Demonstration and Presentation

10.25 – 11:15: Plenary Session: Nuts and Bolts of Desired STEM Skills – Ahmed E. Muhumad

11.15 – 11:30: Keynote Speech – UNDP Somalia Accelerator Lab – Sherif Eltokali

11.35 – 13:00: Youth Skills Day - Booths exhibiting STEM skills, innovation, talent and passion

I. Walk-Through Display Booths: Programmes and activities include:

- a. Food Science
- b. Solar Energy and Electrification
- c. Chemistry and Biology Lab
- d. 3D Printing, Computer Lab and Digital Creative Media
- e. Coding, Programing and Robot Technology
- f. eCo-Construction
- g. Early Childhood Learning on STEM through creative play
- h. Maternal and Reproductive Health
- i. Telecommunications
- j. Innovative Solutions on Banking
- k. Agricultural Tools, made locally

10.00 – 12.00: Hour of code (Microsoft – UNDP team)
12.00 – 13.00: Prayers, Lunch, Networking, and Walk-Through Display Booths
13.00 – 14.00: Plenary Session: Identifying the Gap in STEM Skillsets - Prof. Yasin Barqadle
14.00 – 14.30: STEM Demonstration and Presentation
14.30 – 15.30: Plenary Session: Women in STEM – Dr. Mariam Dahir
15.30 – 16.30: Plenary Session: Innovative Solution on STEM Skills Gap – Engineer Abdihalim Adam Abdirahaman
16.30 – 17.00: Adjournment

Day Two: 16 July 2019 Quality STEM Education, Innovation and Economic Development

Venue: Sahal Terminal, KM4, Mogadishu, Somalia

08.30 – 09.30: Registration, Coffee Break and Networking
09.30 – 11.30: Paper Presentations and Symposiums - Engineer Ahmed
11.30 – 11.40: Keynote Speech – Dr. Abdigani Diriye
11.40 – 12.30: Plenary Session on Quality STEM Education – Ibrahim S. Ahmed
12.30 – 13.30: Prayers, Lunch, Networking, and Walk-Through Booths
13.30 – 15.00: Paper Presentations and Symposiums – Dr. Abdinur S. Mohamud
15.00 – 15.30: STEM Demonstration and Presentation
15.30 – 16.30: Paper Presentations and Symposiums – Dr. Hodan Isse
16.30 – 17.00: Adjournment

Day Three: 17 July 2019 – Sustaining STEM Development in Somalia (STEM in the context of UN Sustainable Development Goals)

Venue: Sahal Terminal, KM4, Mogadishu, Somalia

08.30 – 09.30: Registration, Coffee and Networking
09.30 – 10.30: Plenary Session – Overview of the NDP and 2030 Agenda for Sustainable Development Goals - Abdullahi S. Muse (Janagale)
10.30 – 10.40: Keynote Speaker - Engineer Abdulaziz
10.40 – 11.30: Plenary Session – STEM in Agricultural Development - Prof. Abdi Ahmed Mohamed (Baffo)
11.30 – 12.10: Presentations – Banking Institutions
12.10 – 13.10: Prayers, Lunch, Networking, and Walk-Through Booths
13.10 – 13.50: Plenary Session-Creativity, Innovation and Quality of Education in STEM
13.50 – 14.30: Hour of code (Microsoft – UNDP team)
14.30 – 15.00: STEM Elevator Page Session Announcement of the STEM Elevator Pitch Sessions Winner
15.00 – 15.10: Closing Ceremony- State Minister, Ministry of Education, Culture and Higher Education

Abstracts and Biography



Ali Said Faqi, DVM, PhD, DABT, Fellow ATS

Dr. Ali S. Faqi is the Ambassador of Somalia to Belgium, Netherlands, Luxembourg (Benelux) and EU since June, 2013. He served as a non-resident Ambassador to France and was the Representative of Somalia to UNESCO from 2014 to November 2016. He is the Representative of Somalia to ACP in Belgium, and the Organization for the Prevention of Chemical Weapons (OPCW) in the Hague-Netherlands.

Dr. Ali served as an Interim Chief of Staff for President Farmaajo during the transition period (February- Early April, 2017).

He is the special envoy of the Somali President on Somali migrants stranded in Libya and a member of High-Level Joint Committee of Somalia, Eritrea, and Ethiopia which was recently established.

Moreover, Dr. Ali is an Adjunct Associate Professor at Wayne State University, School of medicine, Department of OBGYN in Detroit, Michigan (USA) and an Associate Editor of the Journal of Reproductive Toxicology.

Dr. Ali was a Director and/or Sr. Director of the Department of Developmental and Reproductive Toxicology at MPI Research from June 2003- April 2017. He is the Founder and President of ASF Scientific Solutions-A Toxicology Consulting firm. He holds a doctor's degree in Veterinary Medicine from the Somali National University, Diploma of Specialization in Experimental Pharmacology from the University of Milan (Italy) and a PhD in Toxicology from the University of Leipzig.

Dr. Ali is a Diplomate of American Board of Toxicology (DABT) and a Fellow Academy of Toxicological Sciences (FATS).

Birth Defects, Causes, Prevention and Surveillance in Somalia

Ali Said Faqi

Paper Presented at the Second Annual Somali STEM Summit

Mogadishu, Somalia

July 15-17, 2019

Around 8 million children are born every year and an estimated 6% of them are born with serious birth defects. Some of these defects are treatable, but others are not. Birth Defects are one of the leading causes of death in children worldwide. Some birth defects are inherited, others are caused by drugs/or chemicals, but that vast majority of birth cases are of unknown origin.

Raising awareness in birth defect is very common in most developed countries, but in Somalia, the issues is very little known and debated. People still believe that some

of the external malformations are of Satan origin. The objective of this presentation is to raise awareness, discuss causes, prevention and most importantly surveillance to better understand the biological background of single defects.



Dr. Abdinur Mohamud is a former Minister of Education, Culture and Higher Education of the Transitional Government of Somalia in 2010-2011. Dr. Mohamud is a former educational consultant with the Ohio Department of Education and is now with the Institute for Education and Development. Dr. Mohamud earned a bachelor's of Science degree in Mathematics and a minor in Physics at College of Education of the Somali National University before pursuing a doctorate in Education Administration at the Ohio University, in the United States.

Infusion of STEM Content in the Academic Curricula

Improving quality of education is a priority for any developing nation. Highly qualified and well trained staff, an aligned set of standards, curriculum and assessments, as well as delivery of instruction that meets the needs of all students are some of the critical ingredients of a quality system of education. Moreover, improving the rigor of the curriculum requires constant reviews of what students know and are able to do at different grades compared to students in other countries. Gradual infusion of higher level content and application to arouse student creativity and productivity will help improve STEM skills and knowledge of students.

This presentation will highlight education improvement process with STEM knowledge and skills in mind.



Dr. Hodan S. Isse is a Central Bank of Somalia Board member and a former clinical Assistant Professor Emeritus of Finance in the School of Management at the University at Buffalo. Dr. Hodan has extensive background in monetary and fiscal policy, financial modeling, and forecasting. Her area of expertise include concentration and knowledge of the role of government in setting fiscal and monetary policies to achieve economic growth, full employment, and stable price levels and functioning financial institutions. Dr. Isse's research focuses on the

problems and the potential of effective federal, regional and commercial banks of Somalia. She outlined the important characteristics of a working fiscal federalism in Somalia.

Mathematical Skills and Financial Literacy

Dr. Hodan S. Isse

Paper Presented at the Second Annual Somali STEM Summit
Mogadishu, Somalia
July 15-17, 2019

Financial Literacy: The Crucial Role of Mathematical Skills in Improving Business and the Economy.

The lecture provides a roadmap of what an effective manager does, its roles and responsibilities, aptitudes and skills as well as incentives he or she confronts. It elucidates the separation of ownership and control and the managerial tools needed to align the interest of owners and managers. It also provides a mechanism that ensures successful executions of the entity's roles or responsibilities are abided and followed'.



Dr Shahid Yamin is an Executive Chairman and Cofounder of Global Opportunities Commercialisation Pty Ltd, Melbourne, Australia www.globalcommercialisation.com.

He has 40 years of diverse international experience in industry, academia, and management consulting. He is a leader in forging business concepts to new technologies and developing innovative products for new markets across the globe. He has helped clients to create, develop, and execute successful new start-up businesses in South

East Asia, South Asia, Europe, Middle East and MENA regions. Through his association with global universities he has led the development of entrepreneurial capacity among the youth and young executives.

Pathways to Develop Creativity and Innovation using STEM Skills: A Global Perspective

Dr. Shaid Yamin (PhD)

Paper Presented at the Second Annual Somali STEM Summit
Mogadishu, Somalia
July 15-17, 2019

The presentation is in three parts:

Part A identifies and discusses in detail the nature and implications of entrepreneurial attributes and how it can be sparked within Stem skilled individual and how

coalignment with STEM skills can enhance socio-economic benefits from the project. Fundamentally, to have a strategic vision for any STEM project the question “WHY?” needs to be explored deeply. An in-depth understanding of “WHY?” is an excellent way to determine the right “HOW?” and “WHAT?” for STEM enabled projects. The implication of this process is to expand the horizon of STEM projects which enables far greater sustainable global socio-economic benefits. Case examples will be used to engage the audience to stimulate reflection and discussion, and a deeper understanding of the entrepreneurial attributes.

Part B of this presentation is on Creativity and Innovation in Pre-Assessment of the Stem Projects. Creativity and Innovation is an integral part of the entrepreneurial skills and starts at the very beginning of ideation process and continues for the life of the project. Ideation is the creative process of generating, developing, and communication of new ideas, a basic element of thought that can be either visual, concrete, or abstract. Ideation comprises all stages of a thought cycle, from innovation to development, to actualisation. Creative visualisation of STEM projects design, commercial and social impact, and creative innovation.

Part C focuses on implementation issues, such as planning and scheduling, potential risk factors including cost over runs and delays and mitigating strategies to avoid or reduce the impact on the project. It also focuses on an operational and marketing plan to ascertain that the project meets both commercial and social needs. A business plan is prepared to guide the execution of the STEM project. In all the three stages the “WHY”? “HOW”? and “WHAT”? with different question pertinent to various stages is continuously asked to get a deeper understanding of the internal and external dynamics of the STEM project.

Evaluating the project in an entrepreneurial framework provides the benefit of unveiling the hidden opportunities that may otherwise be ignored to be evaluated and clarified with a commercial and social perspective to create a sustainable business that continuously increase economic and social values.

Dr Shahid Yamin

Executive Chairman and Cofounder

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Dr Sadiyo Siad is the founder of Hano Group, a network of educational and entrepreneurial institutes and the chancellor of Hano Academy, an academic progression and polytechnic academy in Mogadishu, Somalia.

Dr Sadiyo Siad has a Ph.D. in Tuberculosis and Immunology a Master's Degree in Infectious Diseases and Immunology and another Master's Degree in Medical Diagnostics, in addition to a PGD in Medical Pathology, and an Honours Degree in her Undergraduate Course at the University of Leicester and Cranfield University, UK.

Producing STEM Practitioners with Innovative Skills - Where will Somalia be in the next decade?

By Dr. Sadiyo Siad, Ph.D. – Hano Academy,

vc@hanoacademy.com

and Somali STEM Society

Paper Presented at the Second Annual Somali STEM Summit

Mogadishu, Somalia

July 15-17, 2019

Somalia, just like most African nations, requires a clear strategic plan that is designed to help in the promotion of rigorous STEM subjects in the academic curriculum. The country currently doesn't have clear policies or strategies to inculcate STEM in the elementary, secondary and tertiary education. There is a shortage of qualified professionals in the field of STEM to lead STEM programs across the curriculum. This may also explain why there is a shortage of skilled workers in the workforce to help in the country's rapid industrialization process. The mismatch between available labor skills and what's required in the modern workplace continues to widen as the country struggles to attain social, economic and political stability.

The problem of youth unemployment is rampant in the country, with over 60% of the youth being unemployed. However, with a robust national strategic policy and plan on the infusion of STEM subjects in the academic curriculum and its strict implementation, Somalia may be able to revamp the quality of the national workforce which will in turn help spur economic development. In the absence of national policy and strategic plan to foresee long term educational and developmental goals, the question remains, where will Somalia be in the next decade?

The paper will review the state of STEM education in Somalia and challenges in the public and private sectors for STEM trained qualified workforce. The paper will argue that current trends and shortages in qualified labor force can only change with the development of clear national policies and priorities to improve the academic curriculum throughout the education system and particularly TVET and traditional higher education programs.



My name **Ahmed Abdi**. I am the Founder and Programme Manager of Africa Space Workshops and the Africa Regional Partnerships Manager of the Space Generation Advisory Council (SGAC).

I created Africa Space Workshops because I am passionate about democratizing the access to space for African nations. I am particularly passionate about space entrepreneurship and creating African space start-ups. The reasons for this include but are not limited to:

- Tackle the high unemployment among the youth here,
- Create high skilled jobs
- Improve lives by lifting people out of poverty

Africa has the highest percentage of youth worldwide. If it is utilized then this will be a blessing for the continent. If it is not utilized then it will be a curse. This goes also for Somalia.

Therefore, I want to contribute to the development of space capabilities in Somalia to utilize our blessings: our youth and our people in general!

Space exploration

Ahmed Abdi

Paper Presented at the Second Annual Somali STEM Summit
Mogadishu, Somalia
July 15-17, 2019

Space exploration has resulted in the further advancement and improvements of quality of lives for the nations that has managed to successfully pursue it. Furthermore, space exploration has contributed in the job creation, particularly in high skilled jobs which have helped such nations lift their citizens out of poverty. Many of today's technologies would not have been possible without space exploration and the acquiring of space technologies. From the internet, smartphones, financial transactions, navigation systems, etc. Even future technologies such as 5G have space technologies contributing to their roll out.

Somalia is facing many challenges (e.g. deforestation, urbanization, climate change, resource management, etc) where space technologies such as satellites and big data can contribute into tackling these challenges, help improve lives of Somalis and stabilize the country.

Innovative technologies have had multiplying affects in terms of benefitting for the nations that managed to acquire them and further advance such technologies capabilities. Whereas, countries that did not manage to acquire such technologies, the multiplying affects were in the disadvantage of such countries.

Somalia is recovering from decades of conflict and instabilities, interestingly enough the world is at a time where technology is advancing immensely and many nations like Somalia can leapfrog technologies as they do not need to deal with replacing the infrastructure of old technologies that many developed nations are dealing

with. Furthermore, Somalia is in some ways pretty advanced with many big cities having high speed internet and mobile phone-based money transfer; these two can contribute into further accelerating the technological advancement of the nation, especially with the utilization of space technologies.

Therefore, it is imperative for Somalia to develop indigenous space capabilities in order for the nation to tackle with its challenges, stabilize the country and improve lives for its citizen.



Dr. Abdirahim Mohamed Ahmed a veterinarian and holds Master's of Science in Veterinary Public Health from the University of Nairobi. He began his Bachelor of Veterinary Medicine (BVM) from Makerere University located in Kampala, Uganda in 2011, and completed it in 2015. In 2009, Abdirahim completed a diploma in Livestock Health Sciences (DLH); a three-year advanced diploma course from IGAD Sheikh Technical Veterinary School (ISTVS). In addition, he completed a diploma in community development in 2010. Abdirahim was employed at IGAD ISTVS and Reference Centre in 2009

and have been working there since February, 2019. Initially, he was employed as a Tutorial Assistant and later became a junior tutor and tutor.

For the past ten years, Abdirahim has been actively involved in a slew of researches and community veterinary extension services. He partook in research on Trypanosomiasis and its vectors tick and tick borne diseases, milk value chain, and some zoonotic diseases, such as anthrax and Brucellosis.

Abdirahim won the ABCF Fellowship from BeCA/ILRI Hub in 2017 and he is also one of the grant winners of Anthrax surveillance in East Africa project sponsored by Horn project. Abdirahim is one of the STEM Team in Somalia and he is currently a PhD aspirant.

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Revival of Somalia livestock sector: The magic work of local veterinary associations

Dr. Abdirahim Mohamed

Paper Presented at the Second Annual Somali STEM Summit

Mogadishu, Somalia

July 15-17, 2019

It is stipulated that livestock contribute about 65% of Somalia's Growth Domestic Product (GDP) where livestock and its products account about 80% of the country's export. Somalia had centrally controlled veterinary services where the

federal governmental managed all the veterinary activities. In 1991 however, the livestock sector collapsed and infrastructures were destroyed. The country has had strides of draughts and man-made calamities which hampered the sector. This paper looks at the roles and the challenges met by the local veterinary non-governmental organizations in Somalia. Local veterinary associations emerged after the collapse of Somalia Government to fill the gap. The main local veterinary associations are BENALPA (Benadir Livestock Professional Association), ULPA (United Livestock Professional Association), PULPA (Puntland Livestock Professionals Association), CERELPA (Central Regions Livestock Professional Association), SOWELPA (South West Livestock Professional Association). The main aim of these associations is contribute to the wellbeing of the Somali community through improving the quality of livestock services. They played a crucial role in lifting the Somali livestock export bans imposed by Suadi Arabia and were successful in reaching the remote and insecure areas of the country. The challenges that veterinary Associations met however included security threats, shortage of technical expertise and political issues.

Local veterinary Associations are surely the revivers of the Somali Livestock Sector and deserve praise for their tireless efforts in the sector. It is recommended that they should be empowered and given continues training.

Keywords: Veterinary Association, Livestock sector.



Mike Compton is a consultant and educator with 25+ years of senior level industry experience, working with recognizable fortune 500 consumer and B2B brands. He has contributed to brands for companies such as P&G, Oral -B, Kroger, Mattel, Disney, Hasbro, Kraft, Big Lots, and many other category leaders, while presenting mixed methods design research at conferences internationally. Additionally, Mike has been an action researcher in sustainable human development for immigrants and refugees in the United States, and more recently for new entrepreneurs in Rwanda. For the past

two years he contributed to HANO Academy as a curriculum developer, lecturer, and advisor. Title: A One Winged Bird: STEM Skills Without Non-Routine Skills is Insufficient for the 21st Century

Mike Compton

Paper Presented at the Second Annual Somali STEM Summit
Mogadishu, Somalia
July 15-17, 2019

Despite security challenges, Somalia must continue to strive for integration into the global market. Standardized STEM education certainly educates young engineers

with important skills for joining international value chains involving science, engineering, and math. Yet, there is a dramatic increase in market scenarios that can not be standardized, or even predicted. This paper discusses the rise of Non-Routine skills being practiced in 21st century markets that should be taught with as much emphasis as STEM skills. These include Empathy Mapping, Journey Mapping, Foresight, Service Blueprinting, Value Proposing, and Business Modeling. Accordingly, this paper proposes a framework for teaching these non-routine skills.



Abdihalim Adam Abdirahman is a Lecturer in different institutions in Somalia, where he teaches different Technological courses. He has taken his first degree of Computer Science from Nugaal University in 2011, and his Masters degree from Sakarya University, Turkey. After his higher education he went back to Somalia and recently works in Nugaal, Ilays and Gollis Universities, he is also an active member and trainer in Somali STEM society. Limitations and Obstacles of STEM implementations in Somalia.

Abdihalim Adam Abdirahman

Paper Presented at the Second Annual Somali STEM Summit

Mogadishu, Somalia

July 15-17, 2019

This paper exposes some of the barriers which prevents STEM (Science, Technology, Engineering and Mathematics) to implement in Somalia. Though, Somalia's civil war and conflicts affected lots of resources including schools and curriculum. However, applying STEM needs strong mathematical disciplines that needs to follow and well-prepared educational program. Recently, STEM is quite new to many African countries and Somalia is not exceptional, Somalis commenced to enhance this field in the last three years particularly by private sectors. In this research the hindrances and the limitations of STEM field in Somalia will be demonstrated. The paper gathers almost all the obstacles that the schools encounter by using various methods like interviewing teachers, students and administration, also by focusing the STEM materials that schools operate to teach the students. Although there are many constrains which halts the Schools and Universities to implement STEM education such as curriculum, equipment, trainers (teachers), seminars, motivation, educational fairs, innovations, Internet, libraries, lack of monitoring and guidance. After all, the paper will suggest solutions which will help the Ministry of Education, Schools, Universities and other educational institutions to bring all the needed equipment and resources to apply them and make the students, trainees adopt the STEM Education.



Eng. Ahmed Abdishakur was born in Hargeisa, Som, in 1988. He received the B.Sc. degree in Chemistry and Chemical Technology from the AL-Neelain University, Khartoum, Sudan, in 2013. and M.Sc. degrees in Petrochemical Engineering from the Karary University Khartoum, Sudan, in 2016.

In 2017, he joined the Department of Science, University of Hargeisa (UOH) and Edna Adan University (EAU), as a Lecturer. In 2018, he was a consultant of Berbera Oil Group. Since in 2018 has been a Member of the

Academic Commission of EAU, Hargeisa. His current research interests include Science chemistry, Chemical Engineering. He is a Life Member of the Somali STEM Society of Somalia. He has experience in chemical technology laboratory techniques both for science and petrochemical.

A kinetic Model of Trans-esterification of Jatropha oil to Biodiesel

Eng. Ahmed Abdishakur

Paper Presented at the Second Annual Somali STEM Summit

Mogadishu, Somalia

July 15-17, 2019

Jatropha tree has seeds that we can extract oil then can easily convert in to fuel by esterification. The esterification process need accurate chemical reaction so the kinetic modeling help how to design a compatible reactor so that we can test pilot industry to resize real one which produces commercial quantities to keep the equilibrium of carbon dioxide were Plants take the carbon dioxide and produce the oxygen which necessary for life in the earth, for this type of fuel will be environmental friend because of the more oxygen needed the more we plant. There are some technical problems to using jatropha oil directly in diesel engines that have yet to be completely overcome. Moreover, the cost of producing jatropha oil as a diesel substitute is currently higher. When jatropha seeds are crushed, the resulting jatropha oil can be processed to produce a high quality biodiesel that can be used in a standard diesel car, while the residue (press cake) can also be processed and used as biomass feedstock to power electricity plants or used as fertilizer (it contains nitrogen, phosphorus, and potassium).



My name is **Jamila Ahmed Aden**. I am a professor at Faculty of Medicine and Health Sciences, East Africa University, Puntland State, Somalia. I worked in the Bosaso campus since 2012. I teach Chemistry, Biochemistry and Medical terminology. I have post graduate degrees from chemistry and pharmacology from Melbourne University, Australia. In addition, I have postgrad.diploma in health research and epidemiology from Umea University, Sweden. I am researcher in public health in the area of maternal and child health. I am research coordinator for

the university and I head the research center and I am PhD candidate in Umea, Sweden.

Research Administration and Management at East Africa University (EAU)

Jamila Ahmed Aden

Paper Presented at the Second Annual Somali STEM Summit
Mogadishu, Somalia
July 15-17, 2019

Objectives: To develop a new generation of Somali academic researchers in the university. **Material and Methods:** A research centre that accommodates all research work done by the university, its research institutions and its individual researchers were established. A budget of 2.5 % of university income was allocated. In addition, EAU Medical Research Committee was established to oversee the research implementation at the university. EAU Ethical Review Board (ERB) along with written ethical guidelines were established. Three Demographic Health Surveillance Sites were selected for the university. Furthermore, I have conducted workshops on research methodology, quality assurance and teaching methodology, training the EAU staff. Every lecturer was advised to select relevant research topics of their interest that are based on the 13 targets set for SDG3. The committee has discussed then prioritized the research questions which then EAU lecturers initiated a research work on one of the identified priority research questions. **Results and Discussion:** The Research Centre has ensured the coordination and necessary oversight and follow up of the research work being carried out by the university and its faculty staff. **Conclusion:** Finally, a successful implementation of research priority projects and producing findings and their dissemination at the university were achieved.



Eng. Abdiasis Farah Said received bachelor of Telecommunications Engineering in 2014 at University of Malaya and Master of Management in 2015 at International Islamic University of Malaysia. He has been teaching a wide range of Telecommunications Engineering courses at East Africa University since February 2017. He received teaching award from East Africa University. Prior to joining East Africa University he worked for the International Organization for Migration (IOM) as a consultant and delivered soft skills training for fresh graduates from universities in Puntland.

Dynamic Channel Allocation in Cellular Networks

Eng. Abdiasis Farah Said

Paper Presented at the Second Annual Somali STEM Summit
Mogadishu, Somalia
July 15-17, 2019

The wireless technology and its application growing faster and faster in last decades. Mobile network is one of the fastest growing technologies in wireless network. This headed to some challenges that face mobile network such as how to serve the big number of users, efficiently of frequencies is scarce and interferes with each other. One of the solutions to deal with such challenges is Cellular Networks which is used to divide a geographical area in to cells so that we can reuse the scarce frequencies in order to support more users and also to decrease interference. This research introduces the importance of dynamic channel allocation in cellular networks and how much gain could be utilized by this technique. The Methodology depend on an intensive reading of what other research has been done in the field, then the model factors and the goal was built according to the main importance issues in this field. In order to realize the complications and limitations of the topic and to have comprehensive understanding many work in the literature have been revised. The mechanism was tested in two different scenarios, with uniform and non-uniform load distribution. For the findings: A new mechanism was introduced to overcome the previous limitations and to gain more efficient results. Also the new mechanism depends on four factors cell size, coordination, frequency reuse, and hand over to make the allocation process efficient and reliable.



Dr Mariam Dahir is a medical doctor graduated from University of Hargeisa in Somaliland, and pursues the further professional development outside her country. Mariam has more than 7 years' experience in managing medical education and health sector regulations in Somaliland. Passionate about gender issues and rights, joined the ending FGM efforts and the advocacy since 2012 in Somaliland, she volunteered to be a champion to educate and empower girls and women, also treated many victims with FGM complications like fistula. She is a dedicated champion for "Health for all" reaching out the marginalized/neglected groups like people with

HIV and advocate SRHR and to deliver quality health services.

Mobile Health for Women and Youth; Accessing Information

Dr. Mariam A Dahir

Paper Presented at the Second Annual Somali STEM Summit

Mogadishu, Somalia

July 15-17, 2019

Somalia is ranking among the countries with highest maternal death and under 5 children according WHO, "The health situation is one of the worst in the world" therefore The country will be unable to achieve its SDGs related to health and nutrition if concerted, coordinated and consolidated efforts are not made to revitalize the health system, Further factors contributing to poor health outcomes and inequalities include low investment in the health sector, insecurity, lack of a transport infrastructure, low education levels, poor access to potable water and safe sanitation, poor nutrition, high population density (making provision of static health services costly), and limited health promotion combined with challenging lifestyle factors, also the lack of youth friendly health facilities makes the youth marginalized group in health care services.

The good news the telecommunication sector In Somalia is well developed and the number of people having access to mobile are estimated to 60% while those who have internet connections are closer to that, Driving around in both congested cities and sparsely-populated rural towns you will see that most people carry a mobile phone in plain sight, countless signs for mobile providers can be seen at nearly every turn, therefore the mobile health is a solution to reach more people in terms of health educations, and promotion it's the best tool to use, people accessing mobile money and using it is also spreading so fast in the country, delivering messages through short messages it will be effective, although the illiteracy is high among women and this will be a difficult to read messages but voice message can be a solution, the companies are delivering messages every day to the public and its easy access but they charge the other companies that owning the information, using health promotion and education through mobile service text or voice can be costing initiatives but philanthropy can be the solution.

The is another solution for reaching population through internet is creating mobile apps, there is Nigerian youth who created app to help the pregnant mothers to

reach good services and many more that tested within the continent and the region that effectively helping mothers and adolescents to access health information in order to link them to health services

In Somalia the estimated number of youth is above 70% without youth friendly health facilities in the place, we are losing many youth because they don't have access to information and health services are not designed to receive them, the good news mostly youth are accessing internet connection or carrying a smart phones, the mobile app delivering an information and giving direction in order to access health services effectively is what it needed, in worldwide the results shows its effective way to reach more left behind minorities like youth, youth have unique conditions that they don't want to disclose with others face to face but currently they Google and some of them they deny their condition and they come to facilities very late like contracting HIV or other sexual transmitted disease because they never access correct information in order to protect themselves from these conditions.

Maternal health mobile apps are one way the tech sector is hoping to reduce the number of maternal deaths in sub-Saharan Africa where the maternal mortality ratios are the highest. Here are five mobile apps that saving mothers' lives in Africa" as the Social Good Moms mentioned in their website; this includes couple of mobile apps that helping mothers reaching health care in some countries in Africa like Nigeria, Cameroon, South Africa, Ethiopia and others

This includes these names who are doing great work in saving mothers around Africa with minimum cost and time, are; Abiye Safe Motherhood Initiative (Nigeria), Gifted Mom (Cameroon), Zero Mothers Die (Ghana, Gabon, Mali, Nigeria and Zambia), and Safe Delivery App (Ethiopia), this mobile apps saved thousands of lives and it's in record also it increased the acceptance of the population by accessing easy information from their mobiles.

Mobile technology becomes more effective in reaching out people and accessing information it's in the hand of everyone or close to entire population, using mobile technology will save the lives of countless women and youth across the country, this is an area needs an investment and attentions from public and private sector.

References

Health systems strategy 2016-2021 for Somalia
Social Good moms blog- Africa



Dr. Mohamed Abubakar, born in Mogadishu, Somalia, on 14th April 1986. He obtained his B.Sc. in Mathematics-Physics from Mogadishu University, Somalia in 2009, M. Sc. in Pure Mathematics from the School of Mathematics National University of Malaysia in 2012, and Ph.D. in Pure Mathematics from Universiti Putra Malaysia in 2016. His main research interests are Topology, Structural theory and Commutative algebra . He has been Lecturer at college basic education (Paaet) in Kuwait and overseas. He attended a lot of conferences and published more than 10 articles. He is a reviewer of ISI and Scopus Journals.

SOME RESULTS ON GENERALISED CLOSED SETS

Dr. Mohamed Abubakar

Paper Presented at the Second Annual Somali STEM Summit

Mogadishu, Somalia

July 15-17, 2019

The aim of this study is to discuss the well-known concepts of closed and -closed sets in generalized topological space and to find some new results for these notion. These concepts are modified to define the new notions of semi -closed and semi-closed sets. Some interesting results with appropriate examples are then given to prove the importance of these newly defined closed sets.



Building code

Hafza Testar

Paper Presented at the Second Annual Somali STEM Summit

Mogadishu, Somalia

July 15-17, 2019

Building code is a set of regulations adopted by a city or a country that stipulate minimum standards for the design, construction and modification of buildings and non-building structures. Architects, engineers and constructors are expected to implement and apply the necessary building codes in their jurisdiction in order to ensure safe and durable structures. Consequent to the fact that local governmental regulative agencies are turning a blind eye to the scourge of un-standardized building structures and construction materials within the country, this investigation acts as study of the impact of lack of building codes on the quality of building constructions in Mogadishu. Thus, in order to successfully complete this analysis a series of steps were undertaken including interviews and questionnaires that were distributed among site engineers, local construction agencies, engineering students, government employed Banadir region engineers and the federal ministry of public works. Conjointly to the questionnaire, several interviews were conducted with expert senior engineers. After conscientiously analyzing the extensive data collected, it was concluded that the lack of standard building codes impact the quality of building structures in many ways including creating unsafe construction environment and poor construction quality control.

Profiles of Other Speakers



Prof. Mohamed Ahmed Jimale is a professor in Animal physiology and the Rector of Somalia National University. Professor Jimale has Ph.D in Physiology and Biology of Animal Reproduction from University of Bologna associated with the University of Milan, Sassari and Perugia, Italy, Non degree specialization in Biology of Animal Physiology and related Laboratory Techniques at the Faculty of Agriculture, University of Udine, Italy and Degree in Veterinary Medicine (D.V.M.) from the Faculty of Veterinary Medicine and Animal Husbandry, Somali National University.

He has an extensive experience in Management, community service and education. He has been active in the research field and has about 18 published papers.



Mr. Dotrus Wilstic is an educationist with more than ten years' experience teaching in challenging environments. He is a certified international facilitator, mentor and administrator. Mr. Dotrus is currently serving as part of the Hano Academy management team. He is more concerned with youth empowerment projects. Dotrus is a YALI (Young African Leadership Initiative) Alumni and holds a master's degree in educational administration. He is representing Hano Academy which is a key contributor to the STEM Summit



Sahra Ahmed Koshin is a PhD Candidate researching women, peace and conflict in Somalia. She has an MA degree in Advanced Development Studies and a MA degree in Cultural Anthropology both in the Netherlands.

She is a Senior Gender and Social Development Researcher who has led and published a number of Somalia-wide research studies focusing on gender and women's participation in higher education, social and political life.

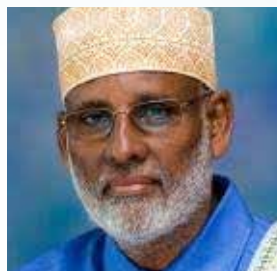
She has over 18 years of professional work experience with Somali government, local and INGOS on research & policy analysis & knowledge management. She has worked in Somalia, Kenya, the Netherlands, South Sudan, Sierra Leone and Zambia, to mention but a few. Sahra is an author and a blogger and she has published several books including the bestselling 'Sounds of Laughter: An Anthology of Poems from the Soul of the Somali Women'. She is the recipient of several awards for her work such as the Dutch ECHO Award and Rabobank Poetry Award for Literature for her poetry.



Mr. Ali Omar is a member of the Somali Parliament and a chief of staff for former president of Somalia Mr. Hassan Sheikh Mohamud. Mr Omar has a Master's of Business Administration from California State University, Fresno in collaboration with Somali Institute of Development Administration and Management (SIDAM) and Bsc in Electrical Engineering from Somali National University, Mogadishu-Somalia. He has worked in the information technology field for over 30 years. Starting as teaching assistant and progressing to lecturer at SIDAM. Ali Omar

briefly relocated to Jeddah, Kingdom of Saudi Arabia and worked IKEA as an Accounting Information Technology specialist in 1992 before Ali Omar moved to Raleigh, NC USA in 1995. Ali Omar has worked for International Business Machines (IBM) at Research Triangle Park, NC 1995 to 2014 and retired from IBM in 2014. In 2014 Ali Omar returned to Somalia and joined FGS to support the recovery process and become chief of staff of President Hassan Sheikh Mohamed. Ali Omar is currently a member of Somali Federal Parliament and likes to do volunteer work in the community.

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Mr. Abdi Ahmed Mohamed (Baffo) is Director of DAXALREEB, Centre for Leadership Development which aims at promoting inter-generational linkages through research and capacity development initiatives. Mohamed has a vast working experience that spreads almost forty years of engagement in humanitarian, recovery and development issues. He is a former Minister of Agriculture, and held also the position of National Resilience Focal Point in the Office of the Prime Minister from 2015 to 2017. He recently spent a year in the University of California Davis as a 2017-2018

Humphrey Fellow. He served in UN peacekeeping missions in Darfur and South Sudan, respectively. His areas of interest include agriculture, resilience, peacebuilding, state-building, capacity-building and programme evaluations. Mohamed has received his BSc in Agricultural Sciences from the Somali National University in 1979, and his MSc in the same field from the University of Reading, UK, in 1986.

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Prof. Yasin M. Barqadle

Professor Barqadle is a Computer and Electronics Engineer by training and worked in the field Information Technology (IT) for decades. He taught Information Technology and Information Security courses at universities in the US. Professor Barqadle served as a senior Patent Examiner for the U.S. Patent and Trademark Office (USPTO). He has examined over thousand patents and issued several hundred patents belonging to well known tech companies.

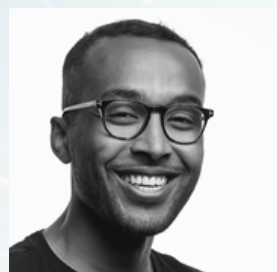


Mohiadin Abdulahi is the vice president of Galkayo University (GU), Somalia. He has Master's in Information communication technology and management from Asia University-Malaysia and a Bachelor's degree in Computer Science & IT from Mogadishu University, Somalia. In addition, Mohiadin took intensive English course, hardware and software programs and web 2.0 and Social Media Learning opportunity.



Mohamed Khadar is the co-founder and Business Strategist in iRiseHub, Mogadishu Innovation Hub and the CEO of Bright future LTD. He has a Master's degree in Business Studies/Administration/Finance/Banking from the University of Malaya in Malaysia and a Bachelor's degree in Computer Science/Information Technology from University of Science and Technology, Sana'a in Yemen.

Mohamed has an enormous experience in online banking, networking, strategic and operational marketing and computer science. During his student hood, Khadar became the president of Somali Students Society in Malaysia and the General Secretary of Somali Students Association in Yemen.



Dr. Abdigani Diriye is a research scientist and a manager for at IBM Research and the co-founder of Innovate Ventures, the leading startup accelerator and technology fund in Somalia.

Dr. Diriye established Innovate Ventures to support and invest in Somali startups. They have been running the first incubators and accelerators in the country and have had over 20 startups graduate from their programme.

Dr. Diriye has published over 40 papers and patents in leading scientific outlets, and holds a Bachelors, Masters and PhD in Computer Science from the University of London. Dr. Diriye is a TED Fellow, Next Einstein Forum Fellow, and has been listed as one of 35 innovators under 35 by MIT Technology Review in 2017.



A/Aziz has MSc in Bridge Engineering; University of Surrey, Guildford (UK 2009) and BEng (Honours) in Civil Engineering from City University, London (UK 1999). He has specialized in structural analysis and Design to BS & Euro codes, Building Design and Construction, Highway Structures Design and Construction Supervision, Contract Preparation and Procurement and Project Management & Planning; WLC Assessments

Synopsis:

Currently I am the general manager of Amaana Engineering & Construction undertaking the construction of Liido Hotel, the tallest building in Mogadishu, Somalia.

In the Middle East I was working as the deputy resident engineer (RE) for Oriental Consultants Global Company Ltd (Oriconsul) for RA/212 Construction, Completion & Maintenance of Roads & Interchanges on the Central part of Jahra Road, Kuwait, and before that at AECOM consulting in Croydon, UK for Transport for London (TfL) LoHAC Contract.

I have over twenty years' experience, fifteen with Mouchel and then Enterprise Mouchel (EM) in various roles and my experience has encompassed from inspections and assessments to the new design as well as refurbishment works of existing highway structures.

In Oriconsul I was responsible in assisting the Resident Engineer for the supervision of RA/212 and at EM I was responsible for structural assessments as well as the management of Abnormal Indivisible Load (AIL) movement within Area 3 Network.

I carry out feasibility studies including cost comparisons, safety and environmental considerations as well as design and supervision of individual projects. I also routinely carry out preparation of tender documents, management of tendering process and site supervision of schemes. I am proficient with a range of general office applications such as Microsoft Word, Excel and PowerPoint as well as other specialist engineering software packages such as SuperStress, LUSAS, SCALE and AutoCAD.



Deeq Mohamed Afrika is the Co-Founder of Gulivery, an online delivery platform. Deeq is the former Executive Director of Fursad Fund. Through Fursad Fund, he has created hundreds of jobs in Somalia by facilitating, enabling and investing in social entrepreneurs. Deeq is a serial entrepreneur and is also the co-founder of DagDag, an online marketplace for remittances, Abaara.org a system that assist relief responders connect with drought victims in Somalia. Deeq is passionate about tech-startups and technology in general. Deeq sees technology as one of

the key drivers of the 'New Somalia'



Dr Deqo Aden Mohamed is a Somali-born doctor who grew up feeding the refugees her mother was harboring. She earned an MD in Moscow in 2000 and was an OB-GYN resident in Russia until 2003. Deqo continually traveled back to Somalia during work holidays to serve internally displaced people in Mogadishu. She came to America as a refugee in 2003 and gained extensive experience working in health care. She became a naturalized American citizen in 2008. Dr. Mohamed worked with MSF (Doctors Without Borders) from 2008 to 2010 in Somalia during the measles

outbreak in the country, she also led the MSF team for vaccination over 14,000 children under 5. Today, she works full time on the ground in Somalia. She leads all operations in the Hawa Abdi Village in Lower Shabelle, while ensuring the safety of the 300 families who have found permanent shelter in the community. She leads the 400-bed Dr. Hawa Abdi General Hospital.



Guglielmo Giordano is the Head of the Italian Cooperation (AICS) in Somalia since February 2015.

He started his career as a volunteer working 3 years with an Andean rural community, in Peru and Bolivia.

Then, he worked about 10 years with FAO. Later on, he was working almost 17 years in the Directorate General for Development Cooperation, Ministry of Foreign Affairs and International Cooperation, and then at the Italian Cooperation Agency for Development, as Regional Desk Officer in the Middle East, having in his portfolio Lebanon,

Syria, Jordan, Iran and Iraq. During the last three years in Rome, before coming to Somalia, he was also responsible for Tunisia, Libya, Nepal, Pakistan and Afghanistan.



Abdifatah Nur Mohamud

Date of Birth:

1993.10.08

POB: Somalia ,Kismayo

Nationality: Somali

Gender: male

Email add.: Macruuf2014@gmail

Marital Status: single

Phone No. 0615035234

Personal profile

I am skilled in program development, innovator. I am an excellent writer, trainer, mentor, speaker and motivator, and a proven team builder and self.



Fatuma Kuno Muhumed leads UNFPA Youth Programme.

She is a public health specialist and has worked with UNFPA Somalia for the last nine years. She is the manager of the Youth Programme of UNFPA Somalia since December 2013. She is responsible for ensuring that youth perspectives are encompassed in all of UNFPA work through the organization's thematic units.

Fatuma is also responsible for youth empowerment initiatives which include development of road maps, policies

and guidelines for encouraging youth including young women empowerment sensitive programming, one-stop youth centres, capacity building of young people and partners, advocacy and engaging youth through peacebuilding and governance.

Prior to this assignment, Fatuma worked as humanitarian associate supporting UNFPA humanitarian response and reaching those furthest in need. Before joining the UN, Fatuma worked with GIZ Dadaab as a public health professional.



Brief cv of

Mohamed Dayib Abubakar

Date of Birth: 1981

Education background

» 1998 – 2001 Ahmed Gurey Secondary school, Mogadishu-Somalia

» 2001 – 2005 Bachelor Science degree in Agriculture at Sudan University of Science and Technology in Khartoum North, Sudan

» 2005 – 2007 Master Science Degree in Department of Plant Protection at Sudan University of Science and Technology in Khartoum North, Sudan

Work experience

» 2007 – 2008: Laboratory assistant at Sudan University of Science and Technology, Collage of Agricultural Studies Department of Plant Protection, Khartoum North, Sudan

» 2010 – 2013: Lecturer of General Entomology, Economic Entomology and Pesticide Application at Benadir University Faculty of Agriculture

» 2014 – 2019 –Present: Lecturer of General Entomology, Economic Entomology and Pesticide Application at Jazeera University Faculty of Agriculture, also dean of this faculty

» 2016 – 2019 - Present: Director General and the Founder of Somali Natural Resource Research Center (SONRREC)

Publications

» Effects of NeemAzal-T/S and Malathion57 on the Rust-Red Flour Beetle *Tribolium castaneum* (Herbst) (Coleoptera:Tenebrionidae). Published in science journal of Sudan University of Science and Technology

» The impact of internal displacement on crop production in south west state, Somalia

» Author of a Text-book of Economic Entomology M. Dayi



Brief CV of
Abdul Qadir Omar
Born Jan 1969

Education background

- » Osman Gedi Rage Secondary School in Mogadishu
- » Bachelor of Engineering (Mechanical) at NED University of Engineering and Technology in Karachi, Pakistan
- » MBA in Project management at Preston Institute of Management of Science and Technology in Islamabad,

Pakistan

Working experience

- » Worked at Zeshan Engineering Design Co. in Karachi as Design Engineer for processing industry
- » Worked at UNDP Afghanistan as project manager in Energy conservation
- » Worked at World Banks as Zonal coordinator in Somalia
- » Worked at UN-Habitat as a Programme Manager in Somalia
- » Worked at DRC as Area Manager in Somalia
- » Established Somfarm greenhouse for vegetable production in Somalia
- » Established Aragsan decoration factory in Mogadishu
- » Established HB engineering Research Center for innovation in technology



Brief cv of
Sowda Mire Osman
Date of Birth: 1st January 1992

Education background

- » 2007 – 2010: Ahmed Gurey Secondary School, Mogadishu-Somalia, Leaving certificate
- » 2010 – 2014: Bachelor Science degree in Agriculture at Benadir University

Work Experience

- » 2013 – 2014: Member of Somali agriculture girls' assosiazation (SAGA)
- » Oct.2014 – 2016: Ministry of Agriculture and Irrigation, Head Unit of Extension services in lower Shebelle, Republic of Somalia
- » Sep. 2015- Present: Technical Field Extension focal person at the Ministry of Agriculture & Somali Agriculture Technical Group (SATG)
- » 2015 – 2017 Focal point of environment in State minister of environment
- » 2017 – 2019: head section of agricultural extension services
- » May, 2019 – up to now: acting director department of plant production
- » Operational manager for green life landscape service Mogadishu Somalia



Fouzia Warsame is currently the Dean of Faculty of Education & Social Sciences at the Somali National University (SNU). As one of the first academics to join SNU after it was re-instated in 2013, Fouzia has since made significant contributions with her leadership and commitment. She is a motivated educationalist with more than 10 years in the field of education, and has expansive academic as well as practical experiences in educational programs and policies that incorporate instruction, research, curriculum development, managerial, administrative, and advocacy roles.

Fouzia is a staunch advocate for inclusive and equitable higher education. She believes that access to and provision of quality higher education is indispensable for Somalia in order to accelerate national development goals and to foster citizenship. Fouzia has worked very closely with the Federal Ministry of Education, Culture and Higher Education since 2012 in various capacities including as a senior advisor to the Minister (2014) and as advisor for Teacher Education Policy (2015). In particular, she has contributed to two Education Sector Plans, the National Work Plan, the National Teacher Education Policy and the National Curriculum Committee.

Additionally, Fouzia is an active member of Borderless Higher Education for Refugees (BHER) project; the Connected Learning in Crisis Consortium (CLCC) as well as the Inter-Agency Network for Education in Emergencies (INEE). Both her academic and professional work focus on the nexus between education, community and global connections, and how such connections can play a critical role towards systemic change, social justice and sustainable nation building in Somalia. Fouzia has M.Ed. from University of Alberta, Canada. Her Ph.D., at OISE – University of Toronto, is currently on hold while she is working in Somalia



Mr. Ibrahim Sh Ahmed Mohamed

Ibrahim Sh. Ahmed Mohamed is an Organizational Change Management expert currently working for the Ministry of Education, Culture and Higher Education. Mr. Mohamed specializes in organizational cultures, governance, management systems and improvement.

He was formerly a Senior technical advisor to the comprehensive project status review project as part of Somalia Capacity Injection project. Senior Technical Advisor, Civil Society Capacity Development, Gaziantep, Turkey. Mr. Mohamed holds Master of Public and International Affairs (MPIA), with focus on Global Security from Virginia Tech University.



Yusuf Mohamud was born and raised in Mogadishu. He is currently serving as the managing director of Hano Academy. He holds a Bachelors degree in Medical Laboratory and has actively participated in STEM related activities. He was key in the formation of the Hano Academy Social Innovation Hub based at Hano Academy in 2016. The Hub serves as an incubator and accelerator for the youth projects. Through the hub Mr. Mohamud leads groups of young Somalis in developing creative ideas in Science Technology Engineering and Mathematics. The Hub also provides a knowledge

exchange platform where the youth engage and discuss important innovations required for making life easier in Somalia. As a medical laboratory Professional, Yusuf hopes to establish a Scientific research Centre that shall provide cures for dangerous diseases such as Ebola. Mr. Mohamud believes in the power of STEM in offering solutions to daily challenges.



Ifrah Ali awl. Community activist, educator, motivational speaker, actress, lover of all things science and learning. Teaches science by day and helps in empowering the community through advocating for education, self determination. Education is so important to her that she did not give up her dreams of higher education after becoming a single mother at 20. She obtained a bachelors degree in biological sciences and chemistry as well as a masters degree in education with a concentration in curriculum and instruction. She is a mother of one who in her spare time

enjoys reading, writing, being with her family as well enjoying nature.

An avid supporter of the performing arts, she is an actor in hit Somali web series Jahwareer.

She enjoys combining arts and education to engage and inspire the public.



Prof Mohamed Ali Clay is the Founder and President of University of Southern Somalia, he became The Minister of Culture and Higher Education (TNG) Transitional National Government at the time of President Abdiqasim, now he is the Representative of AGA for Southern Somalia.



Ygor Scarcia

UNIDO Head of Somalia Programme
Industrial Development Expert & CTA

Since beginning his career with UNIDO in 2011 Mr Scarcia has gained a great deal of expertise in developing and operating technical cooperation programmes in fragile and post-crisis environments such as Iraq, Lebanon, and Syria. In Iraq his work focused on developing small and medium enterprises, promoting investment, and enhancing

livelihood opportunities in sustainable entrepreneurship activities for women and youth. As a UNIDO Programme Advisor in Lebanon Mr. Scarcia was responsible for UNIDO Lebanon and Syria programme development, and also focused on partnerships with other UN agencies and MFIs to promote Inclusive and Sustainable Industrial Development.

He first came to work on STEM in Syria Damascus, running a pilot initiative with other UN partners and engaging with LEGO Foundation. He also worked in the technology start-up sector in San Francisco, California. He holds an MBA from the University of San Francisco, California, and a BA and MA in political science and international relations from LUISS University in Rome, Italy.



Ahmed ElmiMuhumad, MBA

Ahmed ElmiMuhumad has more than 20 years of experience in leadership, management, planning and systems integration. Ahmed is a graduate of Franklin University in Columbus, Ohio with Masters of Business Administration (MBA) and Bachelor of Science in Information Technology. As a leader and specialist with strong business management and information technology background, Ahmed worked in the private and public sectors in the United States and in Somalia.

He worked with the Federal Government of Somalia as a Senior Advisor on Leadership and Management to the Ministry of Commerce and Industry, Senior Advisor on Statistics to the Ministry of Planning and International Cooperation, Director General of Statistics, consultant in Aid Coordination and Management, and as capacity Building and Training. He also worked with international organizations including but not limited to Mannion Daniels of UK as a Health Advisor and as Immigration Management Capacity Building consultant with IOM in Somalia.



Abdulahi Muuse Hassan

An entrepreneur and expert in publishing, library development and the printing press sectors. Educated in the UK; holding MA in International Publishing, Oxford Brooks University, Degree in International Relation and History, De Montfort University, and Higher Diploma in Social Enterprise, University of Leicester, Leicester; UK.

Has run a number of successful businesses and charitable organizations in the UK, including Zaylai Books; a publisher and books supplier to schools and libraries in UK.

Accomplished a number of significant projects in Mogadishu

including the opening of a public library with 50,000 books (2006), health care centre (2007) among others.

Established a leading printing press business in 2014, (SomPrint Ltd), which employs of over 70 people and provides backbone services to the government, the education institutions and to the public at large.

Currently resides in Mogadishu with his family and manages SomPrint Ltd, and teaches Publishing Studies at Somali National University.



Ahmed Adem Hussein was born in beledwein, Hirran region, Somalia. He obtained his degree in an Education, department Maths and Physics at Beledwein University. He is also co-founder Himilo Institute for Research and Studies at Beledwein. 2012 – 2016 served as teacher for physics at Horseed Primary and Secondary School and Sigma Institute for Scientific subjects. With more than 10 years of teaching experience. Mr. Ahmed Adem is Education activist so as to get educated community and prosperity country. He worked another official projects for Education with international agencies and local Ngo's to promote education

sector. Now Mr. Ahmed is Dean Faculty of education at Beledwein University as well as lecturer. And likes to do volunteers work in the community.



Bile Hussein Ali is currently working in ALShacab Primary & Secondary school in Galkio as a teacher. He has a Bachelor's degree in Education from Mugadishu University and diploma in English from Express School.

Bile has a wide experience in teaching primary and Secondary schools and worked in Mujtamac Primary & Secondary school, in Mogadishu, Marwan primary & secondary school, Xikma Primary and Secondary School & AlKowthar Primary & Secondary school in Mogadishu and AlMuharam Primary and Secondary School in Mogadishu.

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Joining Somali STEM Society

Somali STEM Society (also known as Somali STEM Association) welcomes members from across the country including academics, students, researchers and all other science and technology-oriented professionals. Members are encouraged to participate fully in all activities of the association in order to maintain membership status. The Somali STEM Society seeks to empower students, professionals and all interested people and help them become the next generation innovators.

To join the association one must be aged 16 years and above and must have a burning desire and interest in STEM education. The association will hold summits, seminars and workshops periodically to nurture the talents of upcoming and existing scientists, engineers, technocrats, and mathematicians.

To become a member, please talk to our protocol team at the summit or register on our website: <http://www.somalistemsociety.org>

For more information, please visit: <http://www.somalistemsociety.org>

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If you are interested in becoming a member of our Society, sponsoring our efforts, partnering or collaborating with us, please email us at: info@somalistemsociety.org

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