

# 1<sup>st</sup> APU Research Conference

Jointly Organized by:

The APU and the MoEHE

## Book of ABSTRACT

**Date:**

**05<sup>th</sup> – 06<sup>th</sup>  
May 2025**

**Venue:**

**Martisoor Hotel  
Garowe Puntland**



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# Conference Program

# AGENDA

Day One

MONDAY 5, MAY 2025

Moderators

**BIN-DIRIYE / KILWE**

Time	Activity Description	Responsible
8:00 to 9:00 am	Welcoming and Registration	Protocol team
8:00 to 9:00 am	Holly Quran	Sh. Mohamud H. Yusuf
9:00 to 9:50 am	<b>Opening Remarks</b> <ul style="list-style-type: none"><li>• Director Abdirahman J. daacad</li><li>• APU Executive - Dr Mohamed Ali Farah</li><li>• Abdiaziz Dahar, (MP)</li><li>• Remarks from Puntland state ministries</li><li>• Minister of Education Hon. Fuad Abshir Ahmed</li><li>• Vice President of Puntland H.E Ilyas Osman Lugatoor</li></ul>	
9:50 to 10:00 am	Importance of Research in Developing Countries and Introduction to Conference Papers	Abdirahman Sheikhdon(BoG APU)
10:00 to 10:40	<b>Presenting Research Papers on Local Government, Service Delivery, and Conflict Resolution.</b> <p><b>Paper 1:</b> Ahmed Shire, T. Advisor, Dowlad-Wanaag Program Revisiting Puntland's Decentralization Journey: Institutions, Reforms, and Realities</p> <p><b>Paper 2:</b> Abdinur Abdirizak, Admas University Delivering quality higher education in Puntland</p> <p><b>Paper 3:</b> Abdirahman Mohamud Said, UOB Exploring the Challenges and Opportunities in Local Government Social Service Delivery: A Case Study of Bosaso Municipality.</p>	MC
10:40 to 11:00 am	Tea break and networking	Protocol Team

11:00 to 11:50 am	<b>Research paper presentations</b> <b>Paper 4:</b> Adam Bihi Conciliation Barometer: Key Preliminary Findings <b>Paper 5:</b> Abdullahi Ilyas Osman, JUST The Role of Local Governments in Addressing Rural-Urban Migration Through Service Provision in Somalia <b>Paper 6:</b> Hassan Mohamed Olad, AAIU Public-Private Collaboration in Social Services: A Pathway to Sustainable Development in Somalia <b>Paper 7:</b> Ahmed Adam Mohamed Examining Clan Conflict Dynamics and their Role in Driving Displacement: Insights from Somalia.	Bin-Diriye
11:50 to 12:25 am	<b>Presentation:</b> Local Government: Challenges and Opportunities <ul style="list-style-type: none"> <li>• Mohamed Abdi Mohamud (ALGAPL ED)</li> <li>• Mohamed Adow - Local Government Expert</li> <li>• Ahmed Abdullahi Adam Local Government Expert</li> </ul>	MC
12:25 - 1:40 pm	<b>Prayer and Lunch Break</b>	<b>Protocol Team</b>
1:40 to 2:15 pm	<b>Panel Discussion:</b> Enabling Environment and Challenges for Effective Local Governance <ul style="list-style-type: none"> <li>• Abdullahi Awil</li> <li>• Mohamed Abdi Mohamud (ALGAPL ED)</li> <li>• Mohamed Adow - Local Government Expert</li> <li>• Ahmed Abdullahi Adam Local Government Expert</li> </ul>	Ahmed Shire
2:15 to 2:45 pm	<b>Remarks for Sponsors</b> • Amal Bank • Amal Real Estate • Golis • Salam Bank	MC
2:45 to 3:00 pm	Remarks by Paul, an expert on local government	MC
3:00 to 3:15 pm	<b>Presentaion:</b> Rebuilding Hope: Community Engagement	Mustafe Osman Re-searcher IRIS Institue
3:05 to 3:20 pm	<b>Day 1 wrap-up and closing</b>	TBD

Day Two  
**TUESDAY 6, MAY 2025**  
**Moderators BIN-DIRIYE**

Time	Activity Description	Responsible
7:30 to 7:50 am	Registration and seating	Protocol team
7:50 to 8:00 am	Recap	Abdullahi N. Salad
8:00 to 8:10	Welcoming and Remarks	State minister Abdisalam Ali Farah
8:10 to 9:05 am	<p><b>Presenting Research Papers on Education, health, energy, and technology.</b></p> <p><b>Paper 8:</b> Abdisalam Mohamed, RSU Exploring the Root Causes of Declining Student Enrollment in Teacher Training Colleges and Education Faculties: Challenges and Solutions</p> <p><b>Paper 9:</b> Abdirahman Sheikhdon, GTEC The Impact of a Lack of Language Policy on Students' Achievements in Primary School: The Case of Primary Schools in Garowe.</p> <p><b>Paper 10:</b> Ibrahim, PUST Factors Contributing to Students' Low Performance in Mathematics in the Puntland Centralized Exam.</p> <p><b>Paper 11:</b> John Samanya &amp; Abdirazak Farah Mohamed, PSU The Role of Parents in Promoting Education Access of Children in Emergency Settings of Garowe, Puntland, Somalia.</p> <p><b>Paper 12:</b> Mohamed Musse Mohamed Kalakaan Homegrown Initiative Solution for Scholarship Challenges in Higher Education in Puntland</p>	Bin-Diriye
9:05 to 9:30 am	<p><b>Keynote Speaker:</b> Dr. Ali Sheikh The role of education for social coherence</p>	Dr. Ali Sheikh
9:05 to 9:30 am	<p><b>Panel Discussion:</b> Teacher Training and Recruitment: Challenges and Solutions (Abdirahman Adaani, MOEHE ,Nuradin Mohamed, Dr. Ayan Mohamed)</p>	Abdirasak Farah
10:35 to 10:55 am	<b>Tea break and networking</b>	Protocol Team
10:55 to 11:25 am	<p><b>Research paper presentations</b></p> <p><b>Paper 13:</b> Ahmed A. Abdille, GSU Prevalence of Hypertension and Associated Risk Factors among Patients Attending Galkacyo Medical Center, Galkacyo- Somalia: A cross-sectional study</p>	Bin-diriye



	<p><b>Paper 14:</b> Ahmed Nur Hersi, UoHS, Examining the Drug Disposal Practices of Pharmacists in Puntland, Somalia: A Call for Improved Standards and Accountability</p> <p><b>Paper 15:</b> Abdisalam M Issa-Salwe, EAU The Need for Somalia's Future Energy: How Can Somalia Move to Sustainable Renewable Energy?</p>	
10:55 to 12:20 pm	Concurrent Session: Sharing Experience and Networking: Strengthening Local Governance Through Collaboration and Learning)	A. Shire Badio hall
10:55 to 11:25 am	<p><b>Research paper presentations</b></p> <p><b>Paper 16:</b> Ahmed Mohamud Osman, UoHS An insightful Commentary on the Transformative Role of Artificial Intelligence in Scientific Discovery, exemplified by the Protein Folding Problem</p> <p><b>Paper 17:</b> Hassan Mohamud Adem Spatial Variation and Factors Affecting Enhancing Health Institutional Delivery Access in Somalia: Spatial and Multilevel Analysis Using Nationwide Survey Data 2020.</p>	MC
11:25 – 12:10 pm	<p><b>Keynote Speaker:</b> Ali Haji Warsame Theme: The Impact of Private Bank Investment on Economic Growth and Self-Employability in Puntland</p>	MC
12:10 to 12: 25	Remarks by Dr. Khadar	MC
12:25- 1:40 pm	Prayer and Lunch Break	Protocol Team
1:40 to 2:10 pm	<p><b>Panel Discussion:</b> The Impact of Private Bank Investment on Economic Growth and Self-Employability in Puntland (Ali Hajji, Dr. Ahmed-Khadar, Ugas, Salam)</p>	Luqman Diiriye
2:10 to 2:20 pm	<b>Contributors Speech:</b> Arafat International Hospital	MC
2:20 to 2:35 pm	<p><b>Presentation:</b> Challenges and Opportunities: TVET in Puntland,</p>	Maylun Hussein, TVET director
2:35 to 3:20	<p><b>Closing Remarks</b></p> <ul style="list-style-type: none"> <li>• Participants</li> <li>• APU</li> <li>• Ministry of Education Horn: Fu'ad Abshir</li> </ul>	MC

# ILYAS OSMAN LUGATOOR

Vice President, Puntland State



## Opening remarks in the 1st APU research conference

5<sup>th</sup> to 6<sup>th</sup> May 2025, Garowe

It is an honor for me to join you at the first research conference organized by the Ministry of Education and Higher Education and the Association of Puntland Universities and to welcome you all to the first research conference. I would like to extend a special welcome to the Ministry of Education and Higher Education, other ministers, members of parliament, the Association of Puntland University (APU), and all distinguished guests. It is important to organize a research conference to investigate barriers to social services for setting up policies and strategies that address all the issues hampering social services.

It motivated me by the theme of the conference, which is “enhancing the responsibilities of social services,” and it came at the right time to address issues around social services. So, this is an opportunity to come together to identify gaps in social services and sketch a clear map for addressing gaps and realizing good governance.

As a result of the conference, the Puntland state can find a new way to realize good governance and social services. Concrete research findings and recommendations can play a big role in policy setting that can drive change in governance, social, technology, and economic. Puntland is always ready to engage and take advantage of research conference outcomes.

Finally, I wish to thank all individuals and organizations for making this conference possible, and the conference is officially open. I wish the conference proceeds well.

*I thank you all.*



## *Preamble*

H.E., the vice president, hon. Ministries and distinguished guests,

I am delighted to participate in the first research conference that is jointly organized by the Ministry of Education and Higher Education and the Association of Puntland Universities (APU). It is the first research conference in Puntland that will provide valuable recommendations as a result of research findings and discussion among the participants and keynote speakers' remarks.

The Research Conference is the foundation of our state building for the future; thus, it is our duty to promote research and innovation to solve issues in education and other social services aspects to improve the quality of education, employment skills, and living standards. The theme of this conference is to improve social services. I feel this occasion is an appropriate platform from which to offer challenges and solutions, policy guidelines for effective social delivery, such as education, health, local government services, and other issues.

I, therefore, wish to appreciate everyone who contributed to this conference, and higher education must be brought to spread research and innovation to address different problems that hinder quality education, particularly and generally, in social services.

Lastly, I would like to formally announce that the vice president to open the inaugural research conference.

*Best Regards.*

**Hon. Fu'ad Abshir Ahmed (Adeer)**

The Minister, MoEHE





## *Preface*

The 1st Association of Puntland Universities (APU) research conference on enhancing the responsibilities of social services will be held from 5th to 6th May 2025 at Garowe in cooperation with the Ministry of Education and Higher Education (MoEHE). The main aim was to establish a forum for disseminating research papers and facilitating discussion on challenges and solutions to social services in Puntland, as well as bringing together researchers, government officers, scholars, and experts from various academic disciplines and universities to exchange ideas and experiences. The conference included 15 oral paper presentations and other poster presentations that focus on three main areas: (i) Local governance and conflict resolution, (ii) Education and Health, and (iii) Technology and energy. Three keynote speakers, three panel discussions, and other participants' remarks were also included in the conference program. It is a valuable event that will have remarkable impacts, and it provides a variety of policy actions and recommendations toward enhancing social services.

We must sincerely thank the vice president, the ministers, the keynote speakers, researchers, organizers, APU, government officers, university staff, sponsors, and others who contributed to the success of this research conference. We worked very hard to make the conference well-organized and lasting positive impact on enhancing social services. We wish to meet our expectations or exceed them.

*Best Regards.*

**Mr. Abdirahman Sheikhdon**

Chief Organizing Committee  
Chairperson of APU BoG



### *Acknowledgment*

I would like to begin by thanking H.E. Ilyas Osman, Hon. Fu'ad Abshir, the Minister of Education and Higher Education (MoEHE), for leading this research conference, which produced a list of impressive papers. I am also thankful to the organizing committee, APU member universities, and researchers for their time and efforts in this research conference. I extend a warm welcome to all our scholars and guests, particularly those who have traveled to be here in person and those of you who have joined us virtually.

I also take this occasion to recognize our keynote speakers, including Dr. Ali Sheikh Ahmed and Hon. Ali Haji Warsame, Dr. Khadar Ahmed, Mr. Paul Crook and to thank conference sponsors, including Salam Bank, Amal Bank, Golis, Kaalo, Amal Real Estate, and Arafat International Hospital.

This research conference is aimed at organizing a forum for research and bringing together scholars, researchers, experts, senior government officials, business organizations, and international organizations to disseminate research papers and facilitate debates to address challenges hampering social services and to create equality and inclusiveness in social services. The APU and MoEHE are committed to conduct a research conference as an annual event to establish an opportunity to connect researchers, experts, and other contributors around the globe.

*Thank you, and enjoy the research conference.*

### **Dr. Mohamed Ali Farah**

Chief Executive Officer  
Association of Puntland Universities

## Keynote Speakers

We welcome the following keynote speakers contributing to the 2025 APU Research Conference program.



*Dr. Ali Abubakar*

Researcher and he is currently the Director of the East Africa Association for Development and Research (DAD) and co-founder, former President of Mogadishu University. He published books on topics related to education, volunteerism, and Islamic history in the Horn of Africa, in addition to a collection of poems. He has been involved in numerous academic and political activities in Somalia.



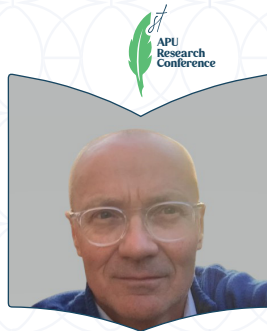
*Hon. Ali Haji Warsame*

Public finance expert, lecturer, and academic. He holds a bachelor's degree in accounting (1990), an MBA in Finance (2003), and an MA in Peace and Governance (2025). Previously, he served as the Puntland Minister of Education from 2014 to 2015 and as the CEO of Golis Telecom Somalia from 2012 to 2013. He is a member of the American Institute of Certified Public Accountants (AICPA) and the UK Chartered Institute of Public Finance and Accountancy (CIPFA).



*Dr. Ahmed Khadar A. Jama*

Economic Analyst, researcher, business consultant, guest lecturer, and academic. He is currently the chief executive officer at the Somali Bankers Association (SBA). He served as the rector of the University of Somalia (UNISO)(2022-2025), and he worked with UN agencies and international organizations as a consultant. His recent research publications include the policy paper he presented at the Heritage conference in 2024, and that paper titled “Households’ economic perceptions and expectations of post-HIPC Somalia”. On 4th February 2025, he published his book on Somalia’s economy, “Dhaqaalaha Soomaaliya: Taariikhda, Isbedellada iyo Arrimaha Hortabinta Leh”.



*Paul Crook*

Expert in local economic development and good governance. He is currently a part of the VNG-I team. He used to work as the chief technical advisor for the ILO’s Somali Program. He led the strategic setup of the Sudan Trust Fund Management Unit for over US\$300 million of programming while supporting other countries in building this approach. He holds a BSc in Geography and Social Anthropology, an MBA, and other disciplines.

## **The APU Research Review Committee (RRC)**

1. Dr. Mohamoud A. Mohamoud (Chairperson)
2. Dr. Maye Omar
3. Dr. Abdirshid A. Warsame
4. Dr. Ahmed Osman
5. Dr. Mohamed Ali Farah
6. Mr. Salim Said Salim
7. Mr. Abdirahman Sheikhdon



## **Organizing Committee**

1. Abdirahman Sheikhdon(Chairperson)

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2. Dr. Mohamed Ali Farah

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3. Abdirahman Jama Da'ad

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4. Dr. Mohamed Abdi

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5. Dr. Abdirizak Takar

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6. Abdullahi Noor Salad

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7. Fowsiya Abdullahi Elmi

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8. Abdirizak Farah Mohamed

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9. Abdirahman Ma'alın Ibrahim

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## Purpose of Research Conference

The purpose of the conference is to organize a research conference on enhancing the responsibilities of social service, bringing together scholars, researchers, experts, senior government officials, business organizations, and international organizations to disseminate research papers and facilitate debates to address challenges hampering social services in creating equality and inclusiveness in social services.

### Objectives

**The key objectives of the Conference are to:**

1. Establish a research conference to discuss emerging issues in social services and unify social service sectors to work together to bring lasting change and success.
2. Hold a forum for disseminating research papers/findings, facilitating debates on challenges and solutions to social service in Puntland, and engaging the community, private sectors, and international community to accelerate social service, particularly in rural and hard-to-reach areas.
3. Bring together researchers, scholars, and experts from various academic disciplines and universities to exchange ideas and experiences. This also includes creating networking opportunities for the researchers to establish connections beyond institutional boundaries.
4. Record and recognize the work of the local universities toward social responsibilities and strengthen collaboration and networking among APU members and others through organizing research conferences, initiating innovations, and building research capacity.
5. Facilitate policy briefing and capacity-building sessions to enhance decision-making and utilize up-to-date information that assists in making evidence-based and inclusive decisions on matters about social services and addressing community needs.



# Local Government, Service Delivery & Conflict Resolution



## Revisiting Puntland's Decentralization Journey: Institutions, Reforms, and Realities

**Ahmed Shire Ahmed**

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### *Abstract*

Over the past two decades, Puntland has anchored decentralization in its governance framework as a tool for democratization, improved service delivery, and local empowerment. However, the reality of implementation reflects a mixed path marked by partial achievements and enduring challenges. This paper aimed at evaluating Puntland's decentralization across three key dimensions: political, administrative, and fiscal. It explores the current status of devolved functions, the role of public-private partnerships, and the legacy of JPLG program reforms and other capacity-building efforts. The paper utilized document analysis to draw valid conclusions on the extent of implementation of decentralization in Puntland. Drawing from field experiences, fiscal assessments, and recent reforms, it highlights why the agenda is underperforming and what structural, political, and financial factors are holding it back. The paper argues that revitalizing decentralization requires a new political commitment, institutional clarity, and genuine local ownership. Concrete recommendations are provided to unlock the full potential of decentralization through harmonized policy frameworks, political commitment, equitable financing, and renewed partnerships with local governments. The paper is intended to influence policy direction and spark critical dialogue at the national and sub-national levels. It calls on champions of decentralization—inside and outside government—to step forward and lead the next phase of reforms with ambition, unity, and urgency.

*Keywords:* Decentralization, Service delivery, Reform.

## Exploring The Challenges and Opportunities in Local Government Social Service Delivery: A Case Study of Bosaso Municipality.

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**Mohamud Sheikh Mohamed**

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**Abdirisak Ismail Adur**

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### *Abstract*

Local government service delivery plays a crucial role in ensuring the well-being and quality of life for residents. However, various challenges hinder access to these services, impacting public satisfaction and governance. This study aims to explore the existing obstacles in the delivery of quality services and examine the benchmarks in ensuring transparency and accessibility of social services in Bosaso Municipality, in Puntland, Somalia. The paper used a cross-sectional survey through a structured questionnaire. Participants were selected through a simple random sampling technique. Key challenges identified included poor infrastructure (55.2%), unreliable electricity supply (16.2%), and inadequate education services (10.9%). Social media (66.0%) was the dominant source of information about local government services. The findings highlight significant gaps in transparent service delivery, with poor infrastructure being the most pressing issue. While digital platforms are widely used for communication. Community engagement remains a crucial factor in improving service delivery. Thus, the study recommended Strengthening capacity-building initiatives, increasing local government funding, and enhancing transparency could improve public trust and service efficiency.

*Keywords:* Local government, Social service delivery, Governance, Municipality, Challenges.





# The Role of Local Governments in Addressing Rural Urban Migration Through Service Provision in Somalia

**Abdullahi Ilyas Osman**

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## *Abstract*

This study investigates the role of local governments in addressing rural-urban migration in Somalia through the provision of essential services. It aims to assess how effective service delivery in rural areas can reduce migration pressures by improving living conditions and opportunities. The study employed a quantitative research method, utilizing structured surveys administered to households in both rural and urban areas. Data were collected from three regions in Somalia (Lower shabeele, Baay, and Hiiraan regions) to ensure geographic representation and a diverse sample. The survey focused on access to and satisfaction with services such as healthcare, education, water, and sanitation, as well as migration intentions and experiences. The results indicate that inadequate access to basic services in rural areas is a significant push factor for migration. Households in rural regions reported lower satisfaction with service provision compared to urban areas, highlighting the need for improved local government capacity and resource allocation. Local governments play a pivotal role in mitigating rural-urban migration by enhancing service delivery. Strengthening their ability to provide essential services can reduce migration pressures and promote balanced regional development. The study recommends increased investment in rural infrastructure, capacity building for local governments, and targeted policies to improve access to services in underserved areas.

**Keywords:** *Rural-urban migration, local governments, service provision, somalia, push-pull theory, governance.*

# Public-Private Collaboration in Social Services: A Pathway to Sustainable Development in Somalia

Hassan Mohamed Olad

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## *Abstract*

This study explores the role of public-private collaboration in social services as a pathway to sustainable development in Somalia. It aims to assess how such partnerships can address critical gaps in healthcare, education, water, and sanitation while fostering economic resilience and social cohesion in a fragile state. The study employed a quantitative method with key stakeholders (government officials, private sector representatives, and NGOs) and a quantitative analysis of existing public-private initiatives in Somalia. Case studies of successful collaborations in similar contexts have also been examined. The findings reveal that public-private partnerships (PPPs) can significantly improve service delivery in Somalia by leveraging the strengths of both sectors. However, challenges such as weak governance, lack of trust, and limited private sector engagement hinder their effectiveness. Successful cases highlight the importance of transparency, accountability, and community involvement. Public-private collaboration holds immense potential for driving sustainable development in Somalia. By addressing systemic challenges and fostering inclusive partnerships, these initiatives can contribute to long-term economic growth, social inclusion, and environmental sustainability. To enhance the effectiveness of PPPs, the study recommends strengthening regulatory frameworks, building capacity within public institutions, and incentivizing private sector participation through risk-sharing mechanisms and tax incentives.

**Keywords:** *Public-private partnerships, sustainable development, social services, Somalia, collaborative governance, SDGs, fragile states.*

## Examining Clan Conflict Dynamics and their Role in Driving Displacement: Insights from Somalia.

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**Ahmed Adam Mohamed**

kowtamo2015@gmail.com

**Dr. Abdisamad Omar**

### *Abstract*

This study examined the clan conflict dynamics and their role in driving displacement in Somalia. The study aimed to identify specific regional variations in clan conflict-driven displacement in affected regions in Somalia and analyse the correlation between the frequency of clan conflicts and the scale of displacements across selected regions in Somalia. The study used a quantitative research approach to make inferential statistical tests of correlation and linear regression analysis to examine the association between clan conflict frequency and displacement. The study found a strong positive correlation (Pearson's  $r = 0.705$ ,  $p < 0.05$ ) between clan-based conflict and displacement. Moreover, the study examines the relationship between clan-based conflicts and population displacement in Somalia using Linear Regression Analysis. The results indicate a robust positive association between these two variables, with a correlation coefficient ( $R$ ) 0.705. The statistical significance of the regression model is confirmed by the ANOVA results, which show an F-statistic of 8.891 and a p-value of 0.015, demonstrating that clan conflict serves as a significant predictor of displacement. The coefficients table further corroborates this finding, revealing a standardized coefficient (Beta) of 0.705 and a p-value of 0.015, which suggests a strong and statistically significant link between clan conflict and displacement. Finally, the study proposes several recommendations to address these issues, including community-level resilience initiatives, early conflict warning systems, data-driven decision-making, sustainable income generation programs, and multi-stakeholder collaboration. The study emphasizes the significance of targeted interventions in conflict-prone areas, such as Gedo, to mitigate displacement and support affected communities. The findings underscore the necessity of comprehensive approaches to mitigate the impacts of clan-based conflicts and enhance livelihood stability in Somalia.

**Keywords:** *Clan conflict, displacement, conflict dynamics, conflict-induced displacement, Somali communities.*

# Education and Health

# Exploring the Root Causes of Declining Student Enrolment in Teacher Training Colleges and Education Faculties: Challenges and Solutions

Abdusalam Mohamed Osman

Red Sea University

## Abstract

Exploring the Root Causes of Declining Student Enrolment in Teacher Training Colleges and Education Faculties: Challenges and Solutions Abdusalam Mohamed Osman, Researcher at Red Sea University

Abstract The decline in student enrolments into teacher education programs remains a challenge worldwide; however, in Somalia, particularly in Puntland, the prevailing socio-economic and institutional factors exacerbate the problem. This research has investigated the root causes of the declining enrolment in teacher training colleges from the standpoint of high school students, education faculty students, and key informants comprising teachers and policy makers. The results show that widespread beliefs about the low social status of teachers, poverty, and structural constraints such as lack of exposure and experience, and old-fashioned curricula are considered major deterrents to enrolling. Such pessimistic views are also responsible for a bleak projection of the teaching profession, owing to poor working conditions as well as a lack of opportunities for professional growth. High school students identified some of the major deterrents as financial barriers and societal undervaluation of teaching, while education faculty students identified other deterrents, such as inadequate resources and limited practical training opportunities. Key informants identified critical factors that included structural inefficiencies: lack of institutional support and ineffective policy interventions. The research emphasizes basic motivators such as self-inspiration and community encouragement that have the ability to positively affect learners in following the career path. It recommends methods to aid and promote intake, such as attaching grants and financial incentives, updating teacher preparation syllabi, and elevating working states. The study further calls for public awareness to raise the status of teaching in society and for policies targeting systemic challenges. In so doing, Puntland will be assured of attracting and retaining a motivated teaching workforce that can help meet both the educational and developmental needs of the region. It also fills an important literature gap on teacher education in Somalia and offers useful insights for actionable steps that policy and educational stakeholders could consider.

**Keywords:** *Student enrolment, education faculties, decline in enrolment*



## The Impact of a Lack of Language Policy on Students' Achievements in Primary School: The Case of Primary Schools in Garowe.

Abdirahman Sheikhdon Ali

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### *Abstract*

The quality of primary schools in Somalia remains poor as a result of various factors. Non-native teaching language is one of the key factors that creates a barrier to understanding instruction and content, low achievement, and students struggling to learn in a language they are unable to comprehend well. There is an increasing concern about barriers to literacy, cognitive, and cultural development created by the non-native medium of instruction at primary school, particularly in the early grades, as the students lack functional literacy in teaching language and their mother language. In Puntland, the primary school uses three medium languages. The absence of enriching existing policies and reinforcing policies delayed the renovation of education. In this article, the author explores the impact of a lack of language policy on students' achievement. It outlines various ways in which a language policy affects students' achievement. The study employed a descriptive research design to explore insight into the impact of a lack of language policy on the quality of education. Primary and secondary data will be used to identify gaps in language policy and the impact of non-native teaching language. The study found that schools shift from Somali or Arabic teaching language to English as a medium of instruction, with proper transformation and a lack of recruiting new teachers or training old teachers. In addition, it was found that most English primary teachers are untrained teachers.

The study results provide recommendations on how to enact a well-defined teaching language policy in primary schools to ensure the quality of learning and implement it effectively in all primary schools to mitigate its hostile effects. Finally, the study argues that the policymaker should take a leadership role in transforming language policy to be suited to the context where people have only one mother tongue.

**Keywords:** *Language, literacy, policy, students' achievement.*

# Factors Contributing to Students' Low Performance in Mathematics in the Centralized Exam in Puntland

Ibrahim Abdi Sharmarke

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## *Abstract*

This study investigates the reasons behind poor mathematics performance in Puntland's centralized exams, recognizing mathematics as a major force behind scientific and technological advancement. Employing a mixed-methods approach of analysis of examination records and surveying key stakeholders, the study reveals several interconnected issues. The findings reveal that curriculum planning appears too demanding and poorly sequenced, and overcrowded classrooms hinder effective teaching. Additionally, differences in teacher training and qualifications impact the quality of teaching, while student motivation levels are strongly correlated with attainment. Although mathematics plays a critical role in academic progress, the performance of students in exams shows recurring differentials across schools. Accordingly, the study recommends curriculum reform, teacher support, improved learning environments, and equitable resource allocation. These evidence-driven solutions address the issues of the system and improve mathematics results towards realizing Puntland's education and national development goals.

**Keywords:** *Mathematics performance, Education policy, Puntland, Student achievement, Quantitative analysis*



## **The Role of Parents in Promoting Education Access of Children in Emergency Settings of Garowe, Puntland, Somalia.**

**John Samanya**

Puntland State University

**Abdirizak Farah Mohamed**

Puntland State University

### *Abstract*

There is no community that can sustain long-term economic growth without making serious investments in the education of its citizens. The purpose of this study was to explore the roles of parents in promoting the educational access of their children in emergency settings. The study was conducted in 23 internally displaced people's camps in Garowe, Puntland, Somalia. The researchers engaged a sample of 364 households, specifically parents from 6,980 households. To reach the respondents, the researchers adopted both clustered and simple random sampling techniques. Questionnaires were administered to parents, and interviews were administered to camp leaders and teachers. Data was analysed using frequencies and percentages, means, and standard deviations. As a result, the study discovered that 22% of households had children who did not access education at the time study. It was also discovered that the parents in the IDPs had higher aspirations for their children's education, and children were supported with their school activities and assignments at home. The study also discovered that most households lacked adequate space and modern technological devices like smartphones to facilitate learning. It is recommended that study centres be established in camps to provide children with adequate learning space. Parents should be encouraged and motivated to regularly attend school meetings to understand the issues at schools. The government and other key stakeholders should urgently set up secondary schools in the camp to enhance access at the secondary level.

**Keywords:** Parent, access, promotion, and Emergency Settings.



## Homegrown Initiative Solution for Scholarship Challenges in Higher Education in Puntland

**Dr. Kerosi J. Bosire**

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### *Abstract*

An increase in higher education demand is emerging as a result of growing secondary graduates in Puntland. This creates a need for a scholarship program, as most of the students cannot afford university costs. This issue has put additional pressure on universities in Puntland, many of which struggle to balance affordability for students with the need to generate sufficient revenue from tuition fees. This study investigates the scope of the governance of scholarship programs in Puntland, Somalia, using the University of Bosaso, Garowe (UOB), as a case study. The aim of this study is to explore how contextually grounded strategies improve scholarship governance and enhance the quality of Puntland's higher education. The study employed an explanatory research design to examine how institutional scholarships are administered. The study used both primary and secondary data to draw effective conclusions. The findings reveal a lack of formalized scholarship frameworks, with awards typically granted through discretionary processes rather than structured criteria. Based on the results, the study recommends the establishment of comprehensive scholarship policies, diversification of funding sources through alumni and public-private partnerships, and strategic investment that aligns with the needs and capacity of the universities. The homegrown initiatives are intended to cut off the burden of academic cost and support equitable access to higher education, improve institutional performance, and foster sustainable development within Somalia's evolving academic landscape.

**Keywords:** *Scholarship governance, homegrown solutions, experiential learning, higher education, institutional capacity.*



## **Delivering quality higher education in Puntland: Multimethod qualitative analysis**

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### *Abstract*

Quality in higher education is an essential element in attaining successful learning, personal growth, career progression, and developing competent citizens for national development. Given the importance of this, a multimethod qualitative analysis was conducted to identify the pressing challenges and success factors for delivering quality higher education in Puntland. This study utilized a snapshot study design using qualitative data collected from both primary and secondary sources to explore various aspects of higher education quality. Primary data were gathered through interviews and focus group discussions with university staff, students, graduates, and relevant government bodies, while secondary data were collected through reviewing documents such as policy frameworks and reports. The findings revealed significant challenges in higher education, including the absence of a higher education commission, inadequate governance structures, weak regulatory frameworks, limited funding sources, disparate Curricula, and a lack of higher education Program accreditation. Moreover, the study found the effects of declining secondary education and the absence of merit-based employment as additional challenges. Based on these findings, the paper recommends establishing a higher education commission, improving corporate governance, enhancing internal quality assurance mechanisms, harmonizing higher education curricula, and enhancing secondary education quality. The need for merit-based employment practices and diversified funding sources for universities is also found necessary.

*Keywords:* Parent, access, promotion, and Emergency Settings.



# Prevalence of Hypertension and Associated Risk Factors among Patients Attending Galkacyo Medical Center, Galkacyo- Somalia: A cross-sectional study

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## Abstract

Hypertension is a significant global public health concern, yet research on its prevalence and associated risk factors in understudied regions in Somalia, like Galkayo is very limited. This study aimed to investigate the prevalence of hypertension and its determinants among patients attending the Galkayo Medical Center (GMC). A cross-sectional study was conducted from June to August 2023 at GMC. Participants (N=382) were selected using systematic sampling and completed a questionnaire assessing demographics, clinical history, and lifestyle factors. Blood pressure measurements were obtained to confirm the hypertension diagnosis. Data were analyzed using descriptive statistics, binary logistic regression, and multiple logistic regression. The study found a prevalence of 13.6% among participants. Older age, unemployment, and comorbidities are significantly associated with hypertension ( $p < 0.05$ ). Multiple logistic regression identified younger age, employment status, and comorbidity as independent predictors of hypertension. These findings underscore a considerable burden of hypertension among GMC Hospital attendees in Galkayo, Somalia. Efforts to address modifiable risk factors and enhance access to hypertension management services are crucial to mitigating the impact of this chronic condition on public health in the region. This study contributes valuable insights into the epidemiology of hypertension in a previously understudied area, informing targeted interventions to improve health outcomes and reduce the burden of hypertension in Galkayo and similar settings.

**Keywords:** Hypertension, high blood pressure, risk factors, and cardiovascular diseases.

# Examining the Drug Disposal Practices of Pharmacists in Puntland, Somalia: A Call for Improved Standards and Accountability

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## Abstract

Drug disposal refers to discarding unused and expired medications to prevent improper use and protect the environment. Improper disposal poses significant risks to public health and the environment, particularly in low- and middle-income countries. Thus, this study was intended to investigate the drug disposal practices among pharmacists in major cities of Puntland, Somalia. A descriptive cross-sectional study was conducted between July and October 2024, involving a conveniently selected sample of 81 registered pharmacies across four major cities in Puntland. Data were collected using a structured questionnaire and analyzed using Microsoft Excel and R programming. Descriptive statistics, including frequency tables, were used to identify disposal methods. Results: Most respondents were male (54.3%), of whom 38.3% belonged to the age group of 17–26 years. About 51.9% of the pharmacists held a Bachelor's degree. A significant proportion (93.8%) of the pharmacists had no prior training on proper disposal methods. The most common drug disposal methods were discarding into general garbage (65.4%) and open burning (23.5%). Circa 44.4% of the respondents identified the lack of designated disposal areas as a primary barrier, followed by a lack of knowledge on the issue. Of the disposed drugs, antibiotics represented the majority (38.3%), followed by antifungals (26%). Further, 97.5% of the respondents emphasized establishing a state agency for the drug disposal system, and 90.1% recommended training pharmacists and healthcare workers on proper disposal practices. Based on the results of this study, we found that pharmacists in Puntland engage in inappropriate disposal practices, underscoring the urgent need for authority interventions. Furthermore, there is a significant association between drug disposal methods and pharmacists' educational level, which makes it indispensable for workshops and training for healthcare workers, including pharmacists. We propose establishing a state agency responsible for drug disposal procedures, conducting training programs for pharmacists and waste collectors, and enforcing standardized disposal guidelines necessary to enhance pharmaceutical waste management in Puntland, Somalia.

**Keywords:** *Drug disposal methods, Barriers of Drug Disposal, Environmental Pollution, Public Health.*

# Spatial Variation and Factors Affecting Enhancing Health Institutional Delivery Access in Somalia: Spatial and Multi-level Analysis Using Nationwide Survey Data 2020.

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## Abstract

Health Institutional delivery Access is critical for reducing maternal and neonatal mortality. However, in Somalia, home delivery remains high in prevalence as 70.27% out of 15, 072 women in this study. The study aims to assess the spatial variation of home delivery in Somalia using data from the 2020 Somalia Demographic and Health Survey (SDHS). Spatial analysis techniques, including spatial auto-correlation, hotspot analysis using areal information, was employed to identify high-risk areas for home delivery. A multi-level logistic regression model was fitted using Stata16 to identify individual and community-level factors associated with homedelivery among women with reproductive age in Somalia. Finally, AOR with 97%CI and random effects were reported. This will help in resource allocations and strategic intervention pertaining to institutional delivery in Somalia. Institutional delivery is critical for reducing maternal and neonatal mortality. However, in Somalia, home delivery remains high in prevalence, as 70% of 15, 072 women in this study. This study investigates the spatial variation and associated factors of institutional delivery access in Somalia, where maternal mortality remains a significant challenge. Utilizing data from the 2020 Somalia Demographic and Health Survey (SDHS), the Main Objectives: this study were to identify spatial clusters of home delivery and determine individual and community-level factors influencing institutional delivery access. Methods: The study employed spatial analysis techniques (Moran's I and Getis-Ord Gi statistic) using R software to explore the patterns of home delivery distribution across Somalia. Multilevel logistic regression analysis using Stata16 was then conducted to assess the association between individual (maternal education, age, wealth index, healthcare access, contraceptive use) and community-level (region, residence) factors with the place of delivery. Key Findings: The spatial analysis revealed significant clustering of home delivery, with Waqooyi-Galbeed, Togdheer, Sool, Sanaag, and Bari identified as high-risk hotspot regions. Multilevel analysis showed that women with higher education (AOR=0.28, 97% CI: 0.18-0.44) and those from wealthier households (AOR=0.41, 97% CI: 0.35-0.47 for richest vs. poorest) were significantly more likely to deliver in a health facility. Conversely, women who had never used contraceptives were more likely to deliver at home (AOR=1.96, 97% CI: 1.45-2.64). Community variance across regions was also significant, though individual and community-level factors only explained a small part (32.45%). This study highlights the importance of targeted interventions to improve institutional delivery rates in Somalia. Policy makers should prioritize resource allocation to regions with the highest prevalence of home delivery, with public health programs tailored to address specific community needs. Furthermore, investing in maternal education, improving access to antenatal care, and developing culturally sensitive health education campaigns are crucial steps to empower women and promote the benefits of institutional delivery.

**Keywords:** Enhancing Institutional Delivery Access, Spatial Distribution Multilevel Analysis, Nationwide Survey Data 2020, Somalia

# Technology and Energy

## **An insightful Commentary on the Transformative Role of Artificial Intelligence in Scientific Discovery, exemplified by the Protein Folding Problem**

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### *Abstract*

Proteins are miniature machines that carry out cellular functions, including structural roles, and dynamic functions such as enzymatic activities, defence as antibodies, cell signalling, transport, etc. Proteins consist of twenty basic building blocks known as amino acids. A protein's biological function depends on its three-dimensional structure, which results from folding its amino acid sequence. About fifty years ago, it was shown that the amino acid sequence of a protein specifies its three-dimensional structure, however, it has been a longstanding mystery to predict the three-dimensional structure from the amino acid sequence. Here, the author traces the birth and development of the protein folding problem and the solution of the prediction of three-dimensional protein structure to an accuracy in some cases superior to experimentally obtained models by AlphaFold, a machine learning artificial intelligence method. This remarkable discovery will impact structural biology, medicine, biotechnology, and sustainability solutions, like environmental protection.

*Keywords:* Protein, Artificial Intelligence, folding problem.



# The Need for Somalia's Future Energy: How Can Somalia Move to Sustainable Renewable Energy?

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## Abstract

The sustainable economic future of Somalia will depend on encouraging the farming, fishing, and animal farming communities to adopt renewable energy sources. This direction will open the path for an economically realistic and sustainable future, allowing Somalia to fit the fast-changing environment of today's world and climate change. Solar and wind energy, among other benefits, are abundant from renewable energy sources. With an eye toward strengthening the local economy and jobs, it must be looked at how choices in renewable energy sources will affect the economics of livestock, fisheries, and agriculture. In Somalia, easily available and generally approved sources of renewable energy are solar and wind power. For instance, using wind and solar energy will significantly reduce power expenses. For instance, solar panels set on open fields or barns can collect sunlight and convert it into usable power. Apart from reducing the carbon footprint, this clean energy source will also present a long-term, reasonably affordable substitute. Apart from improving the environment, using renewable energy sources will aid the national economy. Investing in solar panels, wind turbines, or biofuel manufacture will help farmers, livestock farms, and fisheries minimize their reliance on expensive traditional energy sources. This will reduce the running costs. Therefore, it will boost the profitability of their economic life. Adopting these renewable energy sources will enable the farming community, fisheries firms, and animal farms to pave the way for prosperous and sustainable generations. This paper will concentrate on the effects of employing renewable energy as a solution to national energy needs and to assist the nation in establishing a sustainable future for economic development.

**Keywords:** Farming, fishing, animal farming, renewable energy, and sustainable development.



Initially, in 1999, the Garowe School of Management was established to provide short training. This was followed by the establishment of Puntland Community College in 2002. However, in 2004, Puntland State University was established. It has two campuses in Garowe and Galkacyo, and has seven faculties. It has Partnerships in local and regional higher education associations and networks.

For further information, visit:

<https://www.psu.edu.so>



University of Health Science (UOHS) is based in Bosaso, Puntland, Somalia, and was established in 2000. It has two campuses in Bosaso and eight faculties. It emphasizes various health courses. It has a scientific research journal that focuses on health and science, and membership in local and regional higher education associations and networks.

For further information, visit:

<https://www.uohs.edu.so>



East Africa University (EAU) was established in 1999. Its main campus is in Bosaso, and six campuses in the main towns in Puntland and one campus in Erigavo, Somaliland. It has over ten faculties and membership in local and regional higher education associations and networks..

For further information, visit:

<https://www.eau.edu.so>



Red Sea University (RSU) was established in 2008. Its main campus is in Bosaso, and another campus is in Galkayo, Puntland, Somalia. It has seven faculties and membership in local and regional higher education associations and networks.

For further information, visit:

<https://www.rsu.edu.so>



The University of Bosaso(UoU) was established in 2006. Its main campus is in Bosaso, and another campus is in Garowe, Puntland, Somalia. It has eight faculties. It has membership in local and regional higher education associations and networks.

For further information, visit:

<https://www.uob.edu.so>



Puntland University of Science and Technology (PUST) was established in 2004. It has two campuses in Galkacyoo, Puntland, Somalia. It has seven faculties. It has membership for local higher education associations and networks.

For further information, visit:

<https://www.pust.edu.so>



Garowe Teachers Education College (GTEC) was established in 2005. It provides diplomas and bachelor's degrees and focuses on education courses only. It has only one campus in Garowe and a partnership with higher education associations and networks.

For further information, visit:

<https://www.gtec.so> or [www.gtecsom.com](http://www.gtecsom.com)



Global Science University (GSU) is based in Galkayo, Puntland, Somalia, and was established in 2014. It has four faculties and membership in local higher education associations and networks.

For further information, visit:

<https://www.gsu.edu.so>

# XOGTA SHIRKA



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