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With great excitement, I welcome our ardent audience to the 13th edition of the Global Emerging Pathogens Treatment Consortium (GET) Newsletter. As the GET newsletter gained global recognition and identity in the biosafety and biosecurity space, we are enthusiastic to always release topical issues on One Health and Biosecurity across the globe. This newsletter edition focuses on ‘The Role of Women and Youths in Preventing the Proliferation of Biological Weapons in Africa’. In addition to natural disease outbreaks and biosafety challenges with increasing biotechnology activities, the increasing rise in insurgency and radicalisation across African countries also underpin Africa's vulnerability to bioweapon threats. The urgent need to prevent and safeguard the continent from this imminent threat is of utmost importance. The impact on African youths is growing rapidly, especially in entertainment, sports and education. This is a demonstration that youths could be engaged constructively to build peace and unite member states in Africa on the prohibition of Bioweapons proliferation campaign amongst member states. Intergovernmental agencies and initiatives such as the Africa Union (AU) Peace and Security Framework for Youths, 2018, and The African Youth Charter of 2006 have recognised youths' important role in regional safety, peace, and security. African youths have demonstrated how social media and technology can be harnessed for surveillance and awareness campaigns. The teeming youths in the region, which represented about 70% of the continent's population, possess energy, noble creativity and are technology savvy. Young people have a crucial role to play in policy development, and they can be at the forefront of preventing biological terrorism through advocacy and utilising data analytics to gather data and share intelligence regarding potential bioterrorism threats. Women are known to be on the front-line during disease outbreaks. The majority of the first responders in hospitals and clinics are women, as they account for more than 80% of the nursing and career workforce in most African countries. They are often the first to know about outbreaks of disease and are responsible for providing support and guidance to those affected. Women, in their capacity as professionals, parents or guardians, have been identified as having significant roles in supporting the youth in their well-being and creating a safe environment. The contribution of women in the prevention of biological weapons is gradually gaining adequate recognition. Recently Kenya made a deliberate effort to allow a significant amount of women representation in their Biological Weapon Convention meeting in Geneva. The articles in this newsletter highlight the significant roles of Women and Youths in the prevention of biological weapon proliferation in Africa. It is evident that women and the youths have an important role in the prevention and proliferation of biological weapons and conflict in Africa. Thank you for your continuous support for GET, and we look forward to your feedback.

We hope you enjoy reading our newsletter!

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Ms. Melanie Reddiar is Head of the Secretariat to the South African Council for the Nonproliferation of Weapons of Mass Destruction, which is the regulatory body responsible for implementation of South Africa’s nonproliferation obligations. With over 20 years of experience in strategic trade controls, specialised knowledge in counter-proliferation mechanisms, and qualifications in Chemistry, Biotechnology and Management, Melanie leads the Secretariat in implementing South Africa’s international and national nonproliferation of weapons of mass destruction obligations. In this role, she works closely with non-proliferation stakeholders both nationally and internationally. At the national level, Melanie facilitates technical and outreach activities for industry compliance with the regulatory systems that the Council oversees. At the international level, Melanie has represented South Africa in various roles at meetings of the different treaties and conventions covering nuclear, chemical, biological weapons as well as the missile / delivery system-related regimes and the multilateral export control systems. Melanie is also co-chairperson of the Nonproliferation pillar of the Africa Signature Initiative to Mitigate Biological Threats in Africa, a Global Partnership initiative designed to reduce bio-threats through the aligned activities of the Global Partnership and African countries working towards the same goals.
Introduction

Biological and toxin weapons are currently the greatest threat to global security and public health consequences. Any intentional or accidental release of highly infectious viruses, bacteria, fungi, or toxins may mimic a natural event that may complicate the public health assessment and response, and the consequence is the death of humans, animals, or plants. The impact of Bioweapons is best explained by the effect of the recent COVID-19 pandemic, as reported by the UN Secretary General’s report of 2020 as having worsened insecurity across the globe, in addition to geopolitical challenges. It undermined social cohesion and fueled unrest, conflict, violent extremism, and misinformation. Bioweapons constitute a multifaceted problem that requires a multifactorial solution, and the inclusion of women and youths may be one of the potential factors in preventing their proliferation. The COVID-19 pandemic has revived fears about the possible use of biological agents as weapons in terrorist attacks. The prevailing conditions and factors, such as increased development and use of Bio-technologies, growing number of laboratories handling highly infectious biological materials, open-source coding sequences of many infectious microorganisms which can be transformed through chemical synthesis or reconstitution of viruses using modern technology, have increased the potential risks linked to intentional or a deliberate or accidental release of biological materials or pathogenic agents (https://www.biosafety.be/content/biosecurity-accessed on 2nd April 2023). Biological war is more technology-driven, and the creativity of youths and their innovativeness, in addition to women who are pro-peace and ambassadors of good society comprise strong agents of change who can offer a multifactorial solution to the problem of Bioweapons of mass destruction. Youths demonstrated their ability to technology adaptability during covid-19 pandemic, where they harnessed technology to provide innovative solutions as described in the centered digital health solutions (WHO, 2020), while women expressed resilience to the crisis and always opted for safety and stability (Valera et al., 2022). Therefore, to advance global action towards preventing the proliferation of biological weapons in Africa, the discussions at the multilateral level must purpose to include women and youths. Inclusivity of youths and women will provide technology-driven solutions for risk assessment, deterrence, prevention, or response to biosecurity issues as well as a platform for increased outreach, adoption of technology-based services, information sharing, for resilience, safety, and stability (Riordan, 2014).
The Importance of Youths in the War Against Proliferation and Stockpiling of Bioweapons

Including youths in the war against proliferation and stockpiling of bioweapons is their fundamental right as a human (James, 1968). Their participation has been recognized to be a pre-condition to achieving the Sustainable Development Goal. United Nations Security Council Resolution 2250, Africa Union (AU) Peace and Security Framework for Youths, 2018, AU Constitutive Act, AU-Commission strategic plan 2004-2007 and The African Why Include Women in the War Against Proliferation and Stockpiling of Bioweapons

The involvement of women as ambassadors of good society, pro-peace and democratic has been described by Ghias, (2022), where women are perceived as a mirror of societies that are always nationalist and supporters of peace. Since they form about 50% or more of Africa’s population, ignoring them in any process will be planning to fail. In addition, it is their fundamental right to be included in any process or decision-making platform, especially one that requires safety and stability. The role of women in peacekeeping has been recognized and embedded in Security Council Resolution 1325 (2000) and the eight subsequent resolutions that underpin the Women, peace, and Security (WPS) Agenda. By extension, they are also obliged to implement resolution 1540 (2004). Women, either as professionals, parents or guardians, have been identified as having a significant role in supporting the youth in their well-being and creating a safe environment for growth. They can be very close to youths and can identify possible worrying signs of change in a young person’s thinking, social relationships, or behaviour at work, at social places or at home (Baughan, 2021). This is significant in mitigating the proliferation of bioweapons by youths. Women’s role has been appreciated in adding important value to biosecurity forums by leveraging their networks and building bridges across divided communities (Danskin and Perkins, 2014). Engaging them in Bio-programs will strengthen the national commitment to the Biological Weapon Convention (BWC) and the United Nations Security Council Resolution (UNSCR) 1540 (2004). Through the BWC National Focal Point, Kenya has been consciously and actively involving women in the BWC meetings in Geneva, Switzerland. Others have been appointed as institutional BWC focal points to assist in collecting information from their institutions that is required for the preparation of Confidence Building Measures. Africa does not have an Action Plan for women in biosecurity, and there is no particular emphasis on promoting their participation in preventing the proliferation and use of biological weapons and biosecurity programs.
Youth Charter of 2006 have all recognized the important role youths have in the nation’s safety, peace, and security. Tomorrow’s decision-makers are the young scientists (youths) of today with the potential for innovative global solutions.

Africa has the highest proportion of youths who apparently have yet to be given space in mainstreaming social and political circles. They create these spaces to express their views and try to shape their future within themselves (Tsafack, 2022). As explained by Bangura (2022), the marginalization of youth and lack of recognition of their autonomy and identity by the state as well as their communities have led many young people to innovatively create spaces that allow them to express and act on their aspirations. The emergence of physical spaces they control, such as the coffee booths in many African countries (Bangura, 2022) or Bunge la Wananchi (public baraza) as being experienced in Kenya, has enabled the youths to socialize and have their voice heard by their peers and leadership. Within these spaces, they speak boldly of their vision for the future of their communities, countries, lives. In countries like Zimbabwe, Nigeria, Senegal, and Tunisia, youth artists made their voices heard and got roles in the political space (Bangura, 2022). Ozodovich and Maribovich, 2022 confirmed that when you create opportunities for young people to put their innovative proposals into practice, they get interested and motivated and strive for innovations and creativity to provide solutions. The Youth for Biosecurity Network, initiated in 2019, is the most relevant physical space youths have created in the governance of non-proliferation of Weapons of Mass Destruction where they engage scientists, develop capacities, raise awareness, and harness expertise for finding solutions to the current Biosecurity policy issues. The network is growing very fast and proves that if young people are engaged constructively can build peace, provide solutions, and bring economic development and prosperity to their countries (Agbiboa, 2015). The Youth for Biosecurity, in their declaration, have provided call-to-Action recommendations to mitigate the threat of biological weapons. They have emphasized strengthening science and technology in terms of cooperation, assistance, and development in relation to the convention. They have also recommended enhanced assistance, response, preparedness, and institutional strengthening of the convention (https://front.un-arm.org/wp-content/uploads/2022/11/Youth-recommendations-BWC-RevCon_1.pdf). Kenya, in 2022, conducted a sensitization workshop virtually for the youths in collaboration with UNODA to strengthen the National Implementation of BWC. Kenya, also in collaboration with Panama, submitted a working paper on Engaging the Next Generation in Global Biosecurity, where several recommendations were fronted on how youths can participate in global biosecurity (Figure 1). Africa urgently needs an action plan and fast-track the continental framework on Youths for Peace and Security to facilitate their effective participation in mitigating and providing solutions to Biosecurity threats.

Kenya’s first ever youth sensitization workshop on Biosecurity and the submitted working paper to the Ninth review conference on Engaging the youths for Biosecurity.
Recommendations

1. Africa and her countries need to establish a continental and National Action plan on women and youths for biosecurity.

2. African Regional organizations and individual countries to domesticate the UNSCR 2122 (October 2013) roadmap for implementing commitments on women, peace, and security (women, 2013) and fast-track the continental framework on Youths for Peace and Security to facilitate their effective participation.

3. Propose to integrate inclusion of women and Youths in Bio-engagement programs. This will enhance understanding of women and youth issues across all agencies working in the fields of arms control, disarmament, WMD non-proliferation, and particularly in areas addressing biosecurity as a means of empowering women and youths in biosecurity.

4. Prioritize capacity building to avoid subtle bias. Since biosecurity issues are not well understood, women and youths may be trained through short courses or professional accreditation on the issues of weapons of mass destruction. Opportunities be availed for training Biosafety and Biosecurity to women and youths; Increased outreach to raise awareness on handling, storing and disposal of infectious biological materials and measures needed towards the reduction of biological threats.

5. Increased awareness and sensitization targeting leaders to minimize their resistance to having women and youths included. This approach is to have leaders focus on accountability to the strategic objectives of women and youths and consciously and actively include them in programs rather than doubting their capability. This, in turn, will make women and youths feel valued and respected and have access to the same opportunities for sharing information and participation in decision-making. To defuse exclusion and sustain inclusion, leaders to proactively review the access of all groups to a) training, b) professional developments, c) networks, d) important committees, e) other opportunities.

6. Establish multilateral dialogue on biosecurity programs: African Countries to adopt a strategic multilateral dialogue to allow women and youths to express their views and opinions authentically to enhance diversity and reduce conformity. In such an environment, beneficial networks will be developed, which will increase engagement in international and national biosecurity forums. As a community, Women and youths will identify factors to improve regional and global biosecurity, including improved engagement and collaboration across relevant ministries and agencies at the national level and enhanced sustainable funding for biosecurity programs.

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Abstract

The proliferation of biological weapons is a serious threat to global security, and Africa is not immune to this threat. Women and youths in Africa can play a crucial role in preventing the spread of biological weapons. This research paper examines the role of African women and youths in preventing the proliferation of biological weapons in Africa. Specifically, it investigates the current state of the biological weapons threat in Africa, the potential contributions of women and youths in preventing the spread of biological weapons, and the challenges they face in doing so. The paper concludes by offering recommendations for policymakers and stakeholders to support the involvement of women and youths in preventing the proliferation of biological weapons in Africa.

Introduction

Following a recurrent pattern in arms control and disarmament diplomacy, women are underrepresented in official meetings of the Biological Weapons Convention (BWC), comprising, on average, a third of the diplomats. Gender imbalance is even more pronounced in leadership positions. Women’s underrepresentation can reinforce existing biases and lead to a vicious cycle where the perspectives and knowledge of large population segments continue to be excluded [1].

Nearly 40% of the world’s population is 24 years and younger, and the number of youths between the ages of 15 and 24 is 1.1 billion. This is the largest proportion of youths in history, and they must be a central part of global efforts to curb violent extremism in the future [2].

Biological weapons are unique in their invisibility and their delayed effects. These factors allow those who use them to inculcate fear and cause confusion among their victims and to escape undetected [3]. A bio-warfare attack would not only cause sickness and death in a large number of victims but would also aim to create fear, panic, and paralyzing uncertainty. Its goal is the disruption of social and economic activity, the breakdown of government authority, and the impairment of military responses [3].

Empowering Women and Youths to Combat the Spread of Biological Weapons in Africa: An Analysis of Preventative Strategies

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The proliferation of biological weapons is a growing concern for international security. Bioweapons can inflict massive harm on individuals and populations, causing pandemics that can claim millions of lives. These weapons are not constrained by religion, race, or age, and their use can have catastrophic consequences [3]. Africa is vulnerable to the proliferation of biological weapons due to weak governance structures, porous borders, and limited resources for surveillance and response. In this context, the role of African women and youth in preventing the proliferation of biological weapons is crucial [4].

**Current State of Biological Weapons Threat in Africa**

The biological weapons threat in Africa is not well understood due to the limited data and surveillance systems. However, some factors contribute to the vulnerability of the continent to the proliferation of biological weapons. These factors include weak governance structures, porous borders, terrorism, and conflicts. For instance, the Boko Haram insurgency in Nigeria has been linked to the use of biological weapons, such as anthrax, in its attacks [5].

**The Role of African Women and Youths in Preventing the Proliferation of Biological Weapons**

Women and youths in Africa can play a critical role in preventing the proliferation of biological weapons. Women are on the front line of outbreak response but sidelined in the decision-making process. In the event of biological or toxin weapons use, the majority of the first responders in hospitals and clinics would be women, as they account for more than 80% of the nursing workforce [1]. This, however, does not translate into equal participation in relevant decision-making structures. Women in Africa have traditionally played a vital role in the community as caregivers, nurses, and educators. They are often the first to know about outbreaks of disease and are responsible for providing support and guidance to those affected.

Women play an essential role in ensuring public health and safety. Women are also instrumental in promoting healthy behaviors and ensuring that people have access to essential health services. Women's role in society mirrors their role in the home as caregivers, and in many cases, they are responsible for caring for sick family members. Women have historically played significant roles in preventing outbreaks of diseases by ensuring proper hygiene, sanitation, and nutrition. Women play an integral role in ensuring that their communities are healthy and disease-free [6].

In addition to their traditional roles, women have continuously demonstrated their capability in the workforce. Women have become increasingly involved in science, technology, engineering, and mathematics (STEM) fields. The rise of women in STEM fields has allowed for an increase in research and development of public health initiatives designed to combat bioterrorism [7].

Women represent a significant portion of the African healthcare workforce [8]. Women are often the primary caregivers in households and communities, and they have extensive networks that can be used for surveillance and reporting of suspicious activities [6]. Women can also be involved in the development and implementation of community-based response plans. Youths, on the other hand, have a deep understanding of the use of social media and technology, which can be harnessed for surveillance and awareness-raising campaigns [9]. They can also be involved in the development of innovative solutions to address the challenges of biological weapons. Young people have a crucial role to play in policy development, and they can be at the forefront of preventing biological terrorism by utilizing data analytics to gather data and share intelligence regarding potential bioterrorism threats [10].

Furthermore, African youths have the opportunity to participate in forums and training programs that advocate for the prevention of bioterrorism. Organizations such as the African Youth Charter have already taken steps to raise awareness among young people about bioterrorism and initiate training programs on the safe handling of biological agents [11]. Leveraging the potential of youths through such platforms can lead to strong prevention mechanisms put in place with greater flexibility and speed.

**Challenges Faced by African Women and Youths**

Despite the critical role that women and youths can play in preventing the proliferation of biological weapons, they face significant challenges. These challenges include limited access to resources, lack of awareness of the biological weapons threat, cultural
barriers, and limited participation in decision-making processes. These challenges must be addressed to enable women and youths to contribute fully to the prevention of the proliferation of biological weapons.

**Recommendations**

To support the involvement of Women and Youths in preventing the proliferation of biological weapons in Africa, policymakers and stakeholders should consider the following recommendations:

1. Increase awareness-raising campaigns on the biological weapons threats and the role of African women and youths in its prevention.
2. Include biosecurity courses in the school curriculum.
3. Provide training and resources to women and youths to enhance their surveillance and reporting capabilities.
4. Promote the participation of women and youths in decision-making processes related to biological weapons prevention.
5. Support research on biological weapons.
6. Empower women to take on leadership roles in health and safety initiatives to have a significant impact on reducing the risk of bioterrorism.

**Conclusion**

In conclusion, Africa faces many challenges in preventing the proliferation of biological weapons. However, by focusing on the role of African women and youths, we can make progress toward a safer and more secure future. African women can use their traditional roles as caregivers and educators to promote healthy behaviors and disease prevention, they have traditionally played a critical role in ensuring public health and safety, while African youths have access to the latest technology advancements, which can help them become powerful advocates for peace and social cohesion. Through education, training, and policy development, we can empower these groups to become leaders in bioterrorism prevention efforts. Both demographics have the potential to develop innovative solutions to combat bioterrorism.

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Dr Ugo Onyekwelua is a Biomedical Engineer by training and has worked as a Chief Scientific Officer in National Biotechnology Development Agency (NABDA) for 13 years. She is presently the South-West Zonal Controller of National Biosafety Management Agency-NBMA, Lagos State.
In 2019, Dr. Abeer Abdelaziz became the first Egyptian female designated as an International Federation of Biosafety Association (IFBA) Biosafety hero of MENA region1 and four years later, she was selected to join the IFBA biosafety heroes’ selection committee. To date, out of 58 IFBA-certified Egyptian professionals in BRM(BRM), 62% (36/58) are women affiliated with academia and public health institutions. Before that, it was a long journey for Dr. Abeer and other fellow women, including myself, to be the voice of change and work on establishing a biosafety and biosecurity culture in our own laboratories supported by the knowledge we gained and the desire to make a safer world.

The starting point for me was in 2014, and for other fellow women, a few years earlier than that. I was lucky enough to be invited along with other women who became later biosafety gurus in their facilities to the workshop that changed our lives. Albuquerque, New Mexico, was my first time learning the term BRM, loaded with tons of challenges to keep the laboratory operating safely; this new paradigm was the Eureka moment for me.

Anyone working in an under-resourced laboratory can relate when I say that looking at the strict guidelines written by experts working in state-of-the-art laboratories has filled us for a long time with huge disappointment. They were more like “all or none law principle”. Either you have what it takes to operate safely, or you don’t, so your best option is to shut down your laboratory and leave because you are exposing all your staff and your community to inevitable risks!

We were in confusion; we were not able to escape, and we were not able to continue the same as before. Yet the ‘lab must go on’.

Learning about this new paradigm was simply the lifeline to all women working in under-resourced laboratories. You still can protect your laboratory with whatever you have in place, provided that you have conducted your risk assessment and understand your risks, and all you have to do is try your best to reduce that risk using your affordable measures. Now, laboratory personnel can use buckets instead of safety boxes to discard the sharps, and they can mark the infectious waste bag with a sticker or a coloured band...
or a picture to differentiate it from the infectious waste bag. These out-of-the-box solutions can go on and on, and the outcome was remarkable and worth sharing in literature.

We were and still are full of enthusiasm, motivated by the flexibility and individualization that this new paradigm brings to our laboratories. We can make the change, but the change that we can afford and sustain, the change that can keep us working, knowing that even in an unsatisfactory environment, we are still protected and secure. Recognizing that the majority of laboratorians are women in Egypt and many African countries as well (no data available but through a self-observation), we still believe that women in small laboratories in remote areas in different countries are still far from being acknowledged. They had way more challenges than women working in big cities, but the donors can only target big laboratories serving thousands of people in a big city rather than a small lab serving a couple of hundred.

Conceptually, sowing the seed in a big laboratory and creating a pool of national experts would most likely end up with 100 laboratories trained and well-capacitated, while many of those who are trained will move to the private sector for better-paid jobs, and the others will be overwhelmed with the job duties they have to carry out, only few will be able to carry the torch and spread the word among remote and small laboratories. Therefore, the disparity between big and small cities laboratories is huge, while a safe and secure environment is inclusive.

I urge all international donors to pay attention to laboratories in remote areas in different countries. Many women in small laboratories strive to receive an opportunity to learn and join their fellow women in making the desired change in their laboratories. Promoting a nonproliferation strategy requires inclusiveness, equity, and gender integration of all activities to make the efforts worthwhile and would not be complete without including all laboratories, regardless of their affiliation and existing resources.

Every laboratory deserves a safe and secure environment, and women can take the lead to aspire for a better future.
Waste management in a small laboratory

Laboratory Staff following a BRM training
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The role of women and the youths in peace and security is crucial because women and the youths have an essential contribution to peacebuilding, peacekeeping, and peace-making mechanisms.1 The importance of women and the youths in peace and security has been affirmed as an imperative, therefore this is not a new position. The impact and consequences of conflict and (potentially) bioweapons on women and the youths have been recorded.1,2 In addition to this, the role of women and the youths in conflicts has been reported, and even when engaging at informal levels towards peace and security, women and youths are impactful contributors.1 The United Nations Security Council (UNSC) Resolution 1325 of 20003 affirms the invaluable contribution women have in preventing, responding to and reconciliatory measures post-conflict. Specifically for the Biological Weapons Convention (BWC), Panama, a Member State, submitted a working paper imploring the BWC to make gender-provisions, and applied articles IV (national implementation), XII (assistance and response), X (collaboration and capacity building) and XII (equitable decision-making) of this Convention to support this position.4 In this article, I will argue in support for gender and youths informed provisions for non-proliferation of biological weapons in Africa. This article explicates the impact of biological weapons and conflict on women and the youths, the positive influence women and the youths can contribute to non-proliferation, peace, and security and what should be done to ensure that women and the youths are engaged in meaningfully in Africa.

The Impact of Conflicts and Biological Weapons on Women and the Youths

There are gender and age specific risks associated with conflict. Women, children, and the youths are the most compromised and affected during conflict. The impact of conflict is significantly represented by its effects on or consequences for women and the youths.1 As it pertains to biological weapons, the potential impact of bioweapons vary depending on who is affected. There can be associations between characteristics such as gender and age to susceptibilities and effects of biological agents.2 It is therefore important to acknowledge and investigate the effects of conflict and weapons through gender-specific and age points of view. This an equitable and reasonable approach to prepare for and apply appropriate strategies towards prevention and response to biological weapons and conflict. Furthermore, when a woman is pregnant there is additional vulnerability in two ways, first the pregnancy can reduce immune system of a women, secondly there is an additional risk to
unborn child. The risk to the child can have further consequences, birth defects and even fetal or infant mortality.

In resource limited environments, such as Africa, the effects of biological weapons mentioned above can be devastating. Furthermore, conflicts tend to exacerbate existing social issues in affected areas and women and the youths are the most and negatively impacted in this regard.

Women and the youths have the potential to be the most affected by the conflict and characteristics such as gender and age warrant provisions to be made to consider the effects of biological agents that could be used for biological weapons on these groups. In addition to being risks of being affected by conflict and biological weapons, women and the youths can positively contribute to peace and security, this is explored in the next section.

The Positive Influence Women and the Youths have on Non-Proliferation

The positive influence women and youths can contribute to non-proliferation and preventative diplomacy is justified through three claims. First, it is important for women and the youth to share their experiences on how they are affected by biological weapons and conflict, as described in the previous section. Second, women are often responders and caregivers of those who have been affected by conflict. These two claims enable women and the youths to provide epistemic contributions that reflect the knowledge and experiences of those affected by and responding to conflict. Third, women have and can contribute to diplomatic processes, both at informal and formal levels. It is for these reasons that women and the youths should be engaged at the decision-making levels towards non-proliferation, peace, and security.

Women are often the first responders during a conflict. They are responsible for caring for and providing humanitarian aid to those who are affected by conflict. They are also responsible for taking care of their families and communities during conflict. Because of this, women should be engaged, and where necessary their capacities should be developed to prepare for and respond to (deliberate) biological events because of the role they play in communities. This enables them to respond to but also where possible prevent further spread of an outbreak. Involving women in response planning is important, for example in some African communities, women are responsible for burial practices, including washing of deceased bodies, and this can expose them and others to infection. For prevention and response to biological events, women need to be capacitated in order to protect themselves and others.

The experiences of those responding to conflict is essential in understanding the impact of conflict and how the conflict is understood by those affected by it. Epistemic justice is the inclusion of voices to draw on experiences and knowledge of those who are typically unheard or silenced. The knowledge and experiences are valuable in and of themselves, and can also corroborate, clarify, and contextualise what is understood about a subject. For example, if women and youths voices are included in preventative diplomacy, they can provide experiential input that informs non-proliferation, response and peace-making process to prevent conflict or input that can be drawn on during times of conflict. It is important to engage previously disadvantaged communities, to prevent the perpetuation of their vulnerabilities and in some instances silencing. To not involve or exclude those who are significantly affected by conflict and bioweapons, yet these groups are actively involved in the response to such events constitutes epistemic injustice. In this regard, the inclusion of women and youths in peace and security is a moral imperative and ought to be a legal requirement because it is essential for the success of non-proliferation, peace-making and/or building mechanisms.

In addition to being responders during conflict, women are often lobbyists of disarmament and are involved in informal processes of negotiation and peace-making. When the youths are being recruited to join conflicts, women often encourage the youths against participating in conflict. It is also important to note that women are involved at formal levels and play active roles as science, security and diplomacy experts in Africa. The reality, however, is that in Africa, gender parity especially in leadership roles is still lacking. Figure 1 demonstrates the gender representation in government and other leadership capacities between men and women. On this scale, represents parity and values below 1 represent inequality in the favour of men. This figure demonstrates that men are largely decision-makers in governmental, legal, and professional managerial capacities.
Women and the youths, although, clearly instrumental in non-proliferation and conflict resolution efforts, need to have a more active role in non-proliferation of bioweapons in Africa. While the role of women and youths has been underscored, steps to engage women and the youths meaningfully must be taken.

**Measures To Meaningfully Engage Women and The Youths**

The involvement of women and the youths in preventing the proliferation of biological weapons on Africa requires will from current decision-makers. The capacity building of women and the youths and providing the opportunity for women to be decision-makers in non-proliferation, peace and security should be prioritised. Women and the youths must be engaged actively and meaningfully and not merely for quota. For this to be successful, legislative mechanisms in States that require gender parity must be established and implemented. Considering the nature of the impact of conflict on women, legislative frameworks should also include gender-sensitive justice mechanisms towards prevention and reconciliatory measures post-conflict.

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**Figure 1: Gender representation and empowerment scale in Africa. Image from:** https://www.afdb.org/sites/default/files/documents/publications/africa_gender_index_report_2019_-_analytical_report.pdf (p50)
It is evident that women and the youths have an important role in the prevention and response to biological weapons and conflict in Africa. The knowledge, experiences, and technical contribution that women and the youths have must be acknowledged and engaged with to ensure epistemic justice and the professional empowerment of women and the youths. This requires will of decisionmakers, the capacity building of women and the youths and clear legislative mechanisms on parity and gender empowerment.

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Lizeka Tandwa obtained her MSc (Med) Bioethics and Health Law and Bachelor of Health Sciences (Hons) from the University of the Witwatersrand. She is a lecturer at the Steve Biko Centre for Bioethics, University of the Witwatersrand. She is the principal researcher and writer for the State of Laboratory Biosafety and Biosecurity in the SADC region study at the Academy of Science of South Africa. Her current research interests include biosecurity and dual-use research, public health ethics and research ethics.
The proliferation and use of biological weapons are now broadly acknowledged as among the most severe threats to global security and have been a concern for both governments and international organisations for decades. Biological weapons have the potential to cause harm which includes the spread of deadly viruses, bacteria, and toxins, capable of causing widespread illness, death, social disruption etc. In this order to prohibit the misuse and abuse of these biological specimens, the Biological Weapons Convention (BWC), was opened for signature on 10 April 1972 and ratified on 26 March 1975. [1,2] The BWC has established a strong global norm against biological weapons; [3] Although, despite the BWC’s provisions, the threat of biological weapons still remains a significant concern. The increased application of biotechnology and the ease of disseminating biological agents have made the potential use of biological weapons more accessible.

The recent COVID-19 pandemic has clearly shown that biological weapons are a serious threat to global security, affecting every continent with millions of death cases globally. The pandemic showed that few countries had the capacity and structure to respond to health emergencies, especially the African continent. Africa might not have all the necessary structures and resources in place, but the continent has a high population of young people who can play a significant role when it comes to decision-making, innovation and advocacy. The African continent has the youngest population in the world, with 70% of sub-Saharan Africa under the age of 30. Such a high number of young people is an opportunity for the continent’s growth, including in the field of biosecurity.

The United Nations Security Council Resolution 2250 (2015) acknowledged the beneficial contribution of young people in preventing and resolving conflict, countering violent extremism, and promoting peace, making it the initial policy framework in this regard.[8] The resolution acknowledged the essential role of young people in promoting, preventing, and resolving conflicts, as well as their significance in the sustainability, inclusivity, and success of peacekeeping and peacebuilding initiatives, including preventing the proliferation of biological weapons. Also, United
Nations Security Council Resolution 2419 (2018) recognised young people’s positive role in negotiating and implementing peace agreements and conflict prevention. Since then, resolutions, initiatives and movements have been made by young people to prevent the spread of biological weapons. For example, during the UN Disarmament Week in 2019, from 24th to 30th, a youth-led campaign organised by Peace Accelerators and initiated by the World Future Council as a part of the Move the Nuclear Weapons Money was held in New York City. They successfully counted out $542 billion, approximately a five-year budget for global nuclear weapons, which was reallocated to climate protection, poverty alleviation and the Sustainable Development Goals (SDGs).

Ways in Which Youth Can Contribute to Preventing the Proliferation of Biological Weapons in Africa

As the world continues to face unprecedented global health threats, the importance of preventing the proliferation of biological weapons in Africa cannot be overemphasised, and the devastating impact of biological weapons on global security and stability cannot be underestimated. Listed below are some of the ways in which African youths can contribute to this great course:

1. **Policy Advocacy**: Youths can actively advocate for policies and programs that support the non-proliferation of biological weapons in their regions. They can be involved in supporting measures such as BWC and diplomatic initiatives for the promotion of disarmament and non-proliferation, as well as facilitating community programs for the purpose of awareness creation.

2. **Engagement in scientific research**: Young people can engage in various scientific research to develop new technologies and strategies to prevent the spread of biological weapons. This includes research on designing early warning systems, vaccine development, and disease surveillance to create a skilled workforce that can combat biological threats and support the implementation of the BWC.

3. **Establishment of Partnerships with government agencies and international organisations**: Youth-led organisations can collaborate with government agencies, civil society groups, and international organisations to create and execute policies and programs to counteract the proliferation of biological weapons. This includes initiatives to improve disease surveillance and response strategies, strengthening biosecurity measures, and supporting of international cooperation on biological threats.

4. **Awareness Creation**: Young people can employ social media platforms, arrange workshops, and participate in community outreach programs to educate their peers and communities about the risks associated with biological weapons, as well as educate on measures that can be implemented to prevent their spread. This can be leveraged to

![Young people actively involved in the ‘Move the Nuclear Weapons Money’ Campaign](Source: World Future Council)
build a groundswell of support for initiatives that aim to prevent the proliferation of these weapons. [11]

5. Support international efforts and initiatives for peace and security: Youths can amplify international efforts and initiatives for peace and security in Africa aimed at preventing the proliferation of biological weapons. This encompasses providing support to both local and international organizations. For instance, organizations like the World Health Organization, the United Nations and the International Atomic Energy Agency. [11]

6. Innovation: Youths can be involved in deploying their creativity and innovative ideas to develop new ways to prevent the proliferation of biological weapons. They can participate in hackathons, start-ups, and other initiatives that focus on solving global problems. Youths can also participate in international conferences, seminars, and negotiations to promote global cooperation and collaborations.

7. Capacity Building: Youth can engage in several trainings and capacity-building initiatives that focus on the prevention, detection, and response to biological threats. This includes building skills in the fields of public health, biotechnology, emergency preparedness etc.

Conclusion

In conclusion, preventing the proliferation of biological weapons is a global challenge that requires concerted efforts from all sectors. Youths, especially in Africa, can play a vital role in this effort by engaging in advocacy, scientific research, partnerships, leadership, and innovation to create a safer and more secure world for everyone.

References


Ifeoluwa Alabi is a Project Officer at the Global Emerging Pathogens Treatment Consortium (GET). She has over seven (7) years of experience in Project management and has worked across various sectors- Education, Media, Health, Agriculture and Technology in different capacities as a Project Coordinator, Communication/Media Officer, and Research Officer. As a Project manager, she has planned various conferences, events, seminars, workshops, webinars in public health, biosecurity, one health etc., across Africa. She obtained her bachelor’s degree (B.Sc) from the Obafemi Awolowo University Ile-ife (Botany) and Master’s degree (M.Sc.) from the University of Ibadan, Nigeria. She has written several scientific papers, policy briefs, newsletters and technical papers.

Faith Adebayo currently works as a Project Assistant at the Global Emerging Pathogens Treatment Consortium (GET). With a solid academic background in Microbiology from Ekiti State University, Ado-Ekiti, Nigeria, she brings a wealth of knowledge and expertise to her role. Throughout her career, Faith has actively participated in diverse research and laboratory initiatives. Presently, Faith plays a crucial role in the organization, where she contributes to the strategic planning and seamless coordination of projects and capacity-building programs. Her dedication and meticulous approach ensure the smooth execution of initiatives aimed at combating emerging pathogens and advancing public health. Faith’s commitment to scientific excellence and her enthusiasm for making a positive impact in the field of microbiology continue to drive her professional journey.
The 9th African Conference on One Health and Biosecurity themed “Maximizing Benefits and Understanding Risks of Synthetic Biology and Other Emerging Biotechnologies in Africa” will hold from 1st November to 3rd November 2023.

The Conference ‘Call for Abstracts’ is ongoing and the prospectus for the Conference is now available on our website. The prospectus contains details of all past GET conferences, pictures, and collaborators. It can be accessed via: https://bit.ly/GETProspectus

Further details on the conference will be shared with our larger community in due course. For Sponsorship/Partnership, kindly contact Dr Ayodotun Bobadoye via bobadoyed@getafrica.org
GET organizes a monthly webinar to learn from and connect with global experts in the field of One Health and Biosecurity. The webinar gives the opportunity to broaden your skills, as well as the understanding of your field of interest relating to One Health & Biosecurity.

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GET COO, Dr Ayodotun Bobadoye attended a workshop organized by the Intergovernmental Authority on Development (IGAD) and the United Nations Office for Disarmament Affairs (UNODA) from 14-15 March 2023 in Nairobi, Kenya. The workshop was themed “Strengthening the Implementation of UN Security Council Resolution 1540 (2004) Among IGAD Member States”.

Dr Bobadoye (GET COO) with Mr. Hubert Foy (Director, AFRICSIS) and another participant at the workshop.
Dr Ayodotun Bobadoye was invited to speak at a virtual event organized by Centre for 21st Century Issues to celebrate the World Health Day 2023 themed ‘Healthcare System in a Changing Climate’ on the 7th of April 2023.

The global theme for this year’s World Health Day is “Health for All” and coincidentally, WHO celebrated its 75th foundation anniversary as an opportunity to look back at public health’s achievements that have improved quality of life in the last decades.
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