

## ***Advancing Women in Nuclear Fields Through Regional Engagements***

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### ***Abstract***

*This paper examines the importance of professional networks in promoting diversity and inclusion in nuclear fields by advancing women through regional engagements. Referencing the recently established Black Sea Women in Nuclear Network (BSWN) as a case study, the authors analyze the impact of this network on women professionals in the Black Sea region since its inception in 2021. BSWN was established with support from the US Department of Energy's National Nuclear Security Administration's Nuclear Security Women program, the Swedish Radiation Safety Authority (SSM), the James Martin Center for Nonproliferation Studies at the Middlebury Institute of International Studies (CNS/MIIS), and Los Alamos National Laboratory.*

*In the relatively short time since its inception, this network has become a hub of activities and opportunities for women from Black Sea countries, serving as a channel to share information and as a tool for professional development. It has also attracted various regional and international stakeholders to the Black Sea professional community of women in nuclear fields and highlighted their potential and expertise. The network is an example of how a multidisciplinary community of nuclear security and nonproliferation professionals with shared values and agenda can contribute to safety and security in the Black Sea region.*

*The BSWN network is also a clearinghouse for credible and timely information about important regional security developments that may affect safety and security of nuclear and other materials and facilities. The paper concludes with lessons learned in establishing and sustaining such a network, and how it can serve as a model for future similar regional networks uniting women in nuclear fields.*

### ***Introduction***

According to the International Labor Organization, “high levels of equality, diversity and inclusion are associated with greater innovation, productivity and performance, talent recruitment and retention, and workforce well-being.”<sup>1</sup> It is common knowledge that nuclear

fields lack diversity and that women are underrepresented across all sectors. It is estimated that only about 20% of women make up the nuclear workforce.<sup>ii</sup> Increasing the number of women pursuing careers in nuclear, achieving gender parity, and developing diversity and inclusion strategies have been the focus of recent efforts by the International Atomic Energy Agency and other international and national organizations, governments, academic and research institutions, and companies worldwide.

While these endeavors undoubtedly prove crucial in increasing diversity and inclusion in the nuclear workforce, one should recognize grassroots efforts as significant drivers in achieving the same goals. One of examples of such grassroots creations are informal networks and communities of professionals united by common goals and objectives. The authors of this paper argue that professional networks and other expert groups and communities play an important role in complementing international and national efforts in promoting diversity and inclusion by providing opportunities for underrepresented groups of experts, which would not be available to them otherwise through regular channels.

Initiatives such as the recently formed Diversity, Equity, Inclusion and Accessibility (DEIA) Committee under the Institute of Nuclear Material Management (INMM), Women of Color Advancing Peace, Security, and Conflict Transformation (WCAPS), Women in Nuclear (WiN) Global and its national and regional chapters, IAEA's Women in Nuclear Security Initiative (WINSI) help increase the visibility of underrepresented groups, address current challenges facing diversity and inclusion efforts, and provide opportunities for further engagement. They serve as an important resource for members of these communities in promoting DEIA goals, including in the areas of nuclear material management and nuclear security.

### ***Advancing Women Professionals in Nuclear in the Black Sea Region***

Another recently established initiative, the Black Sea Women in Nuclear Network (BSWN), can serve as a case study to illustrate the important role and impact that DEIA regional networks and communities have on women professionals in nuclear fields. Since its inception in 2021, the Black Sea Women in Nuclear Network has been supporting, uniting, and empowering women from the Black Sea countries working in nuclear security and other nuclear fields.<sup>iii</sup> BSWN is an illustrious example of successful partnership between governments and civil society. It was created with support from the US Department of Energy's National Nuclear Security Administration Nuclear Security Women Program, the Swedish Radiation Safety Authority, and was implemented by the James Martin Center for Nonproliferation Studies at the Middlebury Institute of International Studies in conjunction with Los Alamos National Laboratory.

The Black Sea Women in Nuclear Network's mission is to connect, support, and empower women in nuclear fields. BSWN members include women in science, technology, engineering, math (STEM) and policy from civilian nuclear facilities, national governments, civil society, and academia from Ukraine, Bulgaria, Georgia, Romania, Turkey, Moldova, and other countries. This professional network is a resource for its members in promoting principles of gender diversity, equity, inclusion and belonging, and underlining the importance of increasing

the role of women in leadership positions. The network also plans to offer professional opportunities, such as technical exchanges, mentoring, and training.

Established amid the COVID-19 pandemic in a virtual space, the network has become a hub for professional development and information sharing, providing resources, and presenting opportunities for experts of all genders in the Black Sea region and beyond. It has attracted various national and international stakeholders, and provided a platform for women in nuclear security and other nonproliferation professionals to highlight their expertise and experience, promote their leadership, and amplify their voices. The Black Sea Women in Nuclear Network is also an example of how a multidisciplinary community of nuclear security, safety, and nonproliferation professionals with shared values and goals can contribute to safety and security in the region. The next two sections will focus on the role of BSWN in information sharing and professional development.

### ***BSWN as an Information Sharing Channel***

The BSWN network serves as a vehicle for sharing credible and timely information about important regional developments that may affect nuclear safety and security. The network has proven to be an important platform for its members, especially after the Russian invasion of Ukraine. Specifically, the network's WhatsApp group has become a vehicle to exchange information about safety and security in Ukraine and in the region. The network has also provided a safe and nurturing environment for its community to share its stories and perspectives during the war in Ukraine in members' personal capacities. The authors believe that such environments during crisis can be very constructive for bolstering nuclear security culture and boosting the moral of personnel, especially to those whose daily lives and work routines have been disrupted and affected by regional conflicts.

The network delivered two statements in the early days of Russia's invasion of Ukraine. Many BSWN members were engaged in the process of drafting the statements, and this process proved that the network can be a channel for information exchange and connections between network members who share common values.

The network has also served as an important tool for sharing information about available resources for refugees from Ukraine and about the devastating earthquakes that hit Turkiye and Syria earlier this year.

### ***BSWN as a Professional Development Tool***

BSWN members have noted how conducive the network has been to their professional development. The network unites experts from a wide variety of age groups and professional and educational backgrounds. Members range from an undergraduate student to the rector of a large academic institution and from a researcher at a think-tank to a senior manager at a national regulatory body. The network serves as a professional development tool by providing members with informal and practical learning opportunities, such as opportunities for public speaking during network meetings, organizing and hosting webinars, preparing and delivering

presentations and comments in English, website content development, and networking and interacting with a diverse group of regional and international peers.

The network also provides opportunities for developing leadership skills. The network offers rotating leaderships roles, such as a network coordinator and working group chairs. The network also has a communications team responsible for social media promotions and other communications strategies. Another group of BSWN experts serve as points of contact for their respective countries. After international travel restrictions due to COVID-19 were lifted, about 25 most active network members attended the first BSWN annual meeting in Malta, where they learned and practiced their professional skills in public speaking and served as subject matter experts on meeting panels.

The network is inward-looking, as the leadership and its members reflect on the network's mission and goals in the existing context regularly and respond to ongoing challenges and perspectives proactively, with internal commitment and shared responsibility. At the same time, BSWN is an outward looking entity, searching for challenging aspects of nuclear security culture and involving interdisciplinary and cross-disciplinary analysis of ongoing issues. The scope of BSWN member expertise allows it to explore new areas for further research and joint engagement. The network creates unique professional and personal connections among its members. Encouragement and support among the members are the key pillars solidifying the network.

### ***Ensuring Sustainability Through Outreach and Partnerships***

Each professional community or network is a unique entity with its own vision and sustainability strategy. The authors, who have initiated the creation of the Black Sea Women in Nuclear Network in 2021 and celebrated its first successful year in October 2022, believe that BSWN can evolve and sustain through well-designed outreach and partnership strategies.

BSWN outreach activities can take different forms and can include an active social media presence, public events, side events/booths at international conferences, webinars and other speakers' series, mentorship, consulting, and other activities. BSWN has already established its presence on Facebook, LinkedIn, and Twitter and is working on developing its website structure, design, and content. In 2022, the network had its public debut with a booth organized at the IAEA International Conference on Safety and Security of Radioactive Sources. In November 2022 BSWN members participated at the 4<sup>th</sup> Tbilisi International Forum for Regional Stability. The forum is a platform for discussions and exchange among government, civil society, international organizations, academia and industries on nuclear and radiological security and WMD nonproliferation priorities, challenges and opportunities based in Georgia. Network members participated in a special session on networking in the Black Sea region. The network's leadership is also attending the joint annual INMM/ESARDA meeting in Vienna this year and will lead one of the "Lunch & Learn" sessions to showcase the network's successes and the role it plays for women nuclear security and nonproliferation professionals in the region.

One of the most successful BSWN public events included webinar series called Black Sea NucTalks, which the network launched in 2022. To date, BSWN conducted four such webinars on a wide range of topics, including discussion of the outcomes of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) Review Conference, the impact of war in Ukraine on nuclear security and nonproliferation regime, radiation protection, and women's leadership in nuclear fields.

BSWN leadership has been active in establishing relationships, partnerships, and exploring synergies with other already well-established professional communities, including women's networks, such as WiN Global and Women in International Security (WISE), and has identified areas of collaboration with these organizations. For example, BSWN participated in a joint virtual event with WISE and the Liechtenstein Embassy in the U.S., focusing on the safety and security of nuclear facilities in conflict zones. BSWN invited current and former WiN Global leaders to their inaugural virtual workshop and to the first annual meeting to share their experiences running and sustaining their organization. In March 2022, the network also signed a Memorandum of Understanding with the European Nuclear Education Network.

Since BSWN is still a relatively new entity, its sustainability also depends on funding and related successful fundraising efforts. Availability of seed funding to launch and support BSWN during its first two years created fertile ground for the network's evolution. Continuing support will help the network grow and thrive, depending on how this support will be rendered in the future. Having robust financial support is essential for every organization and BSWN is no exception. However, what makes this network unique is the dedication of its members and leadership to the success of the network. Their commitment has enabled BSWN members to convene in-person meetings, attend international conferences, and participate in training activities and technical exchanges, and receiving sustained support would be another stepping stone in building the network's successful future.

### ***BSWN as a Model for Other Regional Networks***

The success of BSWN has made it a desirable model for women professionals in other regions. For example, women experts in Central Asian countries are interested in building a similar network in their region that would support women working on nuclear, radiological, chemical and biological security issues. Members of such a regional network would include mostly women professionals working in CBRN security-related fields from Central Asian countries (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan), with the potential of engaging with other countries.

The activities of this network would combine training and knowledge-sharing on general and region-specific proliferation issues, and nuclear, radiological, and other security challenges, and a discussion of specific gender issues in a professional forum as they relate to the target countries. The network would also discuss challenges and successes in creating gender parity in workplaces, achieving higher representation of women in leadership positions, and supporting and mentoring early career women professionals and encouraging the participation of women experts in international conferences and other related fora.

## ***Conclusion***

Regional networks that focus on professionals underrepresented in the nuclear workforce can serve as an effective tool to promote diversity, equity, inclusion, and accessibility in nuclear fields. The Black Sea Women in Nuclear Network supports DEIA goals and objectives by developing and implementing innovative approaches to address current and emerging challenges for women in nuclear security and nonproliferation. This paper analyzed the network, its structure, and its accomplishments by examining how it advances and supports women from the Black Sea region, including through leadership and professional development opportunities, and serving as a channel to exchange information and share experiences. This network and other similar initiatives that support women nuclear professionals worldwide are complementing ongoing national and international efforts to increase diversity and gender parity in nuclear fields.

Similar networks can serve as models for women and other underrepresented communities. To advance the roles of these underrepresented groups in nuclear fields, the international expert community must maintain and increase its focus on diversity, equity, inclusion, and accessibility as part of developing a strategy for building the nuclear workforce of the future. The authors are committed to continuing their support of DEIA activities through professional networks and other communities to help meet current and future challenges and opportunities.

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<sup>i</sup> International Labour Organization, "Greater progress on diversity and inclusion essential to rebuild productive and resilient workplaces," Press Release, [https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS\\_841085/lang--en/index.htm](https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_841085/lang--en/index.htm), April 6, 2022.

<sup>ii</sup> Office of Nuclear Energy, "3 Female Engineers Making an Impact on the Nuclear Industry," <https://www.energy.gov/ne/articles/3-female-engineers-making-impact-nuclear-industry>, March 19, 2019.

<sup>iii</sup> Margarita Kalinina-Pohl, Nomsa Ndongwe, and Kaitlin Emmons, "CNS Champions the Establishment of the Black Sea Women in Nuclear Network," <https://nonproliferation.org/the-black-sea-women-in-nuclear-network/>, January 21, 2022.