



Norwegian Embassy

Promoting equality and innovation in the nuclear field: Exchange of good practices and lessons learned in international cooperation and capacity-building

Workshop Report

On 8 October 2025, the United Nations Institute for Disarmament Research (UNIDIR), the Permanent Mission of Norway in Vienna and the Vienna Center for Disarmament and Non-Proliferation (VCDNP) organized the workshop “**Promoting equality and innovation in the nuclear field: Exchange of good practices and lessons learned in international cooperation and capacity building.**”

The event was intended for research purposes and held under the Chatham House rule. The main objectives were to

- Identify the most pressing needs for training, technical cooperation and capacity building in the nuclear field;

- Understand good practices to foster development of nuclear expertise in all regions;
- Map opportunities for educational partnerships, collaboration, and the development of specialized training programmes.

Approximately 30 participants attended the workshop, including representatives of States, international organizations (IOs), and think tanks. The event consisted of two sessions of expert presentations. Each session was followed by a roundtable Q&A segment.

Session 1: Current and future needs in nuclear capacity-building

“Training, technical cooperation and capacity-building in the nuclear field”, presentation by Sandra Steyskal, Section Head, Division for Europe, Department of Technical Cooperation, IAEA

The first panellist presented the IAEA's work on training and capacity-building through its technical cooperation efforts. The panellist highlighted the three pillars of the Atoms for Peace and Development programme: Safeguards and Verification, Science and Technology, and Safety and Security. The panellist explained that the IAEA's capacity building work, carried out via the Technical Cooperation programme, focuses on: training and fellowships, technical and expert advice, and equipment provision.

There are several successful and promising IAEA initiatives leveraging nuclear technology, including on monitoring microplastics, applying radiation techniques for recycling, advancing cancer therapy, and supporting climate-smart agriculture. Notable efforts include the Zoonotic Disease Integrated Action (ZODIAC) launched in response to COVID-19, as well as climate adaptation and mitigation projects.

The panellist noted that States were currently prioritising a focus on health (radiation medicine, diagnostic radiology, radiation oncology), nutrition and agriculture (isotope hydrology), nuclear energy (small modular reactors – SMRs), water, environment, and the overarching themes of nuclear safety and security, as well as knowledge management, supporting education, and training.

The IAEA's approach is to support Member States in all stages of a nuclear power programme, including decommissioning. Member States are increasingly interested in SMRs, including States that do not yet have nuclear power. The IAEA can provide support on regulatory, technological, and sustainability questions.

Member States may submit project proposals every two years, while the aim of the IAEA is to support the social-economic development goals of States in a manner that is in line with countries' objectives.

The work relies heavily on experts within and external to the IAEA secretariat, cooperation with permanent missions, and national liaison officers in respective governments, often nuclear regulatory authorities, particularly in the Europe and Central Asia region. Training is held either in Vienna, in recipient States, or in donor States. Several States are both recipients and donors of technical cooperation.

The panellist explained that around 60% of resources are dedicated to capacity building in human resources, while 40% are dedicated to equipment and materials, with excess costs borne by governments.

The panellist discussed the opportunity to support women's participation and education in the nuclear field. In particular, the IAEA runs two fellowship programmes,

- The Marie Skłodowska-Curie Fellowship Programme (MSCFP) aims to help increase the number of women in the nuclear field, supporting an inclusive workforce of both men and women who contribute to and drive global scientific and technological innovation.
- The Lise Meitner Programme (LMP) provides early- and mid-career women professionals with opportunities to participate in a multiweek visiting professional programme and advance their technical and soft skills.

Both programmes rely entirely on extra budgetary funding provided by Member States. The issue of resources and financing are a key concern of the IAEA. The Agency is keen to optimize the use of resources and to establish new partnerships, including with other IOs and the private sector.

“Scientific and technical work related to nuclear disarmament verification”, presentation by Dr James Revill, Head of the WMD and Space Security Programme, UNIDIR

The second presentation focused on scientific and technical work related to nuclear disarmament verification (NDV). Drawing from the experience of the Groups of Governmental Experts (GGEs), the panellist provided a working definition of NDV stressing three key issues:

1. multilateral NDV requires collective agreement on technologies, procedures, and methodologies for NDV to ensure buy in and legitimacy;
2. NDV is a process of gathering and analyzing information to enable assessment of compliance;
3. Any complete NDV mechanism needs to be treaty specific.

The panellist explained that NDV has several functions, including confidence-building, providing security guarantees, generating wider support in agreements, enabling transparency, and reducing the risk of misperceptions. NDV capacity-building efforts create readiness to develop verification measures for future agreements as achieving an effective system will require time and a broad range of skills to ensure operability and we do not want to have to start from scratch.

During the GGEs, several discussions were devoted to capacity-building, with divergent views – to some experts, it was a point of principle of inclusivity, for others it generated substantive benefits. Yet others were sceptical about the value of capacity-building without a treaty.

The panellist stated that opportunities for NDV capacity building exist along the variables of breadth, depth, and time. In terms of breadth, capacity needs to broaden to more actors, including non-nuclear weapon States, and previous efforts have laid the foundation for this, such as VERTIC regional and national hubs.

Regarding depth, practical and operational expert knowledge is needed to ensure trustworthy verification practices. This deep, operational knowledge is being developed through field exercises, scenarios, and experiments that allow approaches to be tested in practice, and which give experts practical expertise with tools and technology.

The issue of time expresses itself in the challenge of sustaining capacity across generations, while dealing with both risk and opportunities emerging from new technologies. NDV is an intergenerational challenge that necessitates the preservation and transfer of knowledge across time. UNIDIR is building a repository of NDV materials to this end.

The panellist highlighted that the Group of Scientific and Technical Experts on Nuclear Disarmament Verification (GSTE-NDV) brings together these three aspects as it enables all States to participate in NDV efforts. The panellist acknowledged that there were concerns and challenges, particularly regarding the issue that NDV needs to be tied to specific treaty obligations.

Nonetheless, contemporary NDV work can create expertise and knowledge, help preparing individuals for future negotiations, thus avoiding a need to start from scratch when the time comes.

Roundtable discussion

In the first roundtable discussion, one participant inquired about means of measuring the impact of capacity building programmes, as well as the possibility of presenting the return on investment “ROI” for such programmes to funders.



The first panellist answered that the IAEA uses results-based management for project planning, which includes a five-year review period. The panellist added that, as the IAEA does not have field offices, it counts on the reports of its Member States for monitoring each of its over 800 projects. Annual reports also focus on achievements and outcomes across different regions or thematic areas. These rely on surveys, interviews, and internal and external auditors. The other panellist added that testimony can be powerful and valuable as a means of assessing impact.

Another participant inquired about the challenges and opportunities in capacity building. The first panellist mentioned, inter alia, that conflicts and war in Europe and Central Asia constitute a challenge for the organization and provision of training.

Additionally, working with private sector funding presents a new challenge for international organizations with strict criteria for procurement and resource mobilization.

On the question of the outcomes of trainings and fellowships, the first panellist explained that of 760 students selected since 2020 by the Marie Skłodowska-Curie Fellowship Programme, 450 have completed their degrees, half of whom are now doing internships or working at the IAEA, affiliated organization, or relevant private sector actors.

The panellist also emphasized that the fellowships are highly competitive, with 800 applicants for 200 spots of the Marie Skłodowska-Curie Fellowship Programme, with around 160 nationalities represented, studying in 76 different countries (data from 2024).

Various participants praised capacity-building measures, like training and courses, as an impactful way to increase expertise and ensure that professionals from various regions are able to pursue a career and remain in the nuclear field.

A participant asked about the ongoing relevance of past initiatives suggesting measures such as the trilateral initiative and work around the model verification agreement still retained value. The panellist agreed indicating there was a significant body of work that retained value and should be preserved, whilst recognising ongoing technical and institutional changes.

A participant also shared updates about the current Resolution being analysed by the First Committee of the UN General Assembly on the topic of establishing a GSTE-NDV. It was noted that the current draft proposes to establish the Group in 2027, with 21 experts considering geographical and gender balance. In view of budgetary constraints, the work would be conducted in English only, with experts meeting two weeks a year for two sessions, which would take place in Vienna and Geneva.

Session 2: Justice and fairness in technical cooperation and capacity-building

“Efforts to address the legacy of nuclear testing in the Marshall Islands from a transitional justice perspective”, presentation by Raphael Pangalangan, Human Rights Officer, OHCHR [virtual]

The third panellist presented the work of the Office of the United Nations High Commissioner for Human Rights (OHCHR) on technical assistance and capacity-building to address the human rights implications of the nuclear legacy in the Marshall Islands. The speaker explained that this approach utilizes the framework of transitional justice, which consists of the elements of truth, accountability, reparation, and guarantees of non-repetition.

The application of this framework to the legacy of nuclear tests is innovative, as it is more commonly used in the context of post-conflict societies. The panellist discussed, moreover, that a lot of thinking about nuclear non-proliferation, arms control, and disarmament already focuses on human rights issues, though often without invoking human rights law as a framework for analysis.

Regarding the Marshall Islands, the panellist emphasized the importance of centring the victims in the process of technical assistance, while also recognizing their own agency in their pursuit of justice. Justice should not only be an outcome, but part of the process. Consultations in the Marshall Islands showed how some studies and reports were viewed to more beneficial to the researchers rather than the Marshallese.

The panellist therefore emphasized the importance of actively involving the communities in the process and reporting the results and findings back to them in an accessible and meaningful manner.

The panellist noted that nuclear issues are traditionally understood through security and state-centric lenses, but that the Treaty on the Prohibition of Nuclear Weapons (TPNW) shows that it is possible to conceptualize nuclear issues through a Human Rights lens as well.

The panellist then continued to elaborate how the nuclear legacy has led to human rights concerns over forced displacement, land rights, access to information, education, discrimination, health impacts, and mass migration from the Marshall Islands. On the linkages with climate change, the panellist highlighted that rising sea levels elicit concern about the potential nuclear waste leakage in the Runit Dome, the concrete structure housing contaminated topsoil and radioactive debris on Runit Island.

The panellist identified education as both a key gap and opportunity for transitional justice processes and capacity building. He noted that education, as well as other related initiatives, should be adapted to the context. In this case, this would mean respecting oral traditions of the Islanders, as well as engaging with the diaspora communities in the US.

At the moment, the OHCHR's work in the Marshall Islands is informed by a 2024 [resolution](#) adopted by the Human Rights Council, which mandates the preparation of a report addressing the challenges and barriers to the full realization and enjoyment of the human rights of the people of the Marshall Islands, stemming from the State's nuclear legacy. This report will be submitted to the Human Rights Council at its sixty-third session in 2026, to be followed by an enhanced interactive dialogue.

“Good practices to embed fairness and equal access to opportunities in the nuclear field”, presentation by Louis Reitmann, Research Fellow, VCDNP

The fourth panellist spoke about good practices to embed fairness and equal access to opportunities in the nuclear field, drawing from a [UNIDIR publication](#). Building on evidence from studies in psychology and behavioural science, the speaker argued that diversity can produce more effective and innovative policies by reducing errors and promoting the exchange of new ideas in decision-making. He highlighted that the value of diversity goes beyond ethics; diversity and fairness can have tangible positive effects on work quality and outcomes.

The paper has three key messages:

1. there is hard scientific evidence that demographic diversity can enhance policy-making;
2. arguments for diversity and fairness should be more pragmatic and evidence-based
3. there are strategies for implementing diversity and fairness, based on scientific findings and real-life experiences in the nuclear field.

To make a stronger case for diversity and equal opportunities in the nuclear field, advocates should emphasize science-backed benefits. For example, studies show diverse teams to argue more factually and thoroughly, to ‘self-fact-check’, to make fewer mistakes, and to better exchange new information and ideas.

It was also important to stress that fairness does not undermine meritocracy but rather gives more people the opportunity to participate in it. The different perspectives they contribute make a qualitative difference. For example, a [paper published by UNIDIR](#) reviewing academic articles and opinion polls from 1990 to 2023 and covering 47 States showed that women tend to be more opposed to nuclear proliferation than men. Women tend to express greater discomfort about the existence of nuclear weapons, though this can vary geographically.

Women also tend to view nuclear weapons as hazardous and have more concerns about the consequences of use when compared with men, who tend to view them more as a security guarantee.

Finally, the panellist outlined strategies for implementing diversity and fairness in a way that unlocks their benefits for policy-making. For example, it was important to accept and listen to resistance to change. People will have doubts, and should not be stigmatized for this, but rather listened to and engaged in a meaningful dialogue.

Additionally, traditional tools like mandatory diversity training have not been found helpful and can even be counterproductive by fuelling resistance. Instead, leaders should define their organization’s lack of diversity and equal opportunities as a challenge and invite staff to help find effective solutions, just as they would for other challenges facing their organization.

Roundtable discussion

The open discussion that followed reflected a broad consensus on the relevance of human rights and inclusivity in nuclear cooperation. Participants raised concerns about funding, new resistance to diversity initiatives, and the need for fair and paid internship opportunities in international organizations. The importance of intergenerational capacity building, particularly in NDV, was reiterated, alongside calls for greater engagement with affected communities and underrepresented regions.

The discussion addressed the need to redress inequalities in the field, allowing young people to participate meaningfully in nuclear issues. A participant raised the topic of unfair internships, where young people are not sufficiently remunerated for their work in International Organizations. It was mentioned that raising the payment for entry-level positions is the type of small thing that can make a huge difference to the lives of young people and can also be helpful to address the challenges facing today’s world.

A participant asked if there are any good examples about how to include communities affected by nuclear testing in technical cooperation and capacity building. A representative of an IO shared that they reach out to Members of affected communities and share opportunities for collaboration, including opportunities to join mentorship programmes in the nuclear field.

Finally, a participant noted the current pushback against initiatives to support women and achieve gender equality in the nuclear field and in international security more broadly. There was a call to action, asking all around the table to continue to stand up for women's equal rights.

Key Takeaways

- Capacity-building remains essential for advancing nuclear safety, security and disarmament objectives.
- Gender-inclusive programmes, such as the fellowships implemented by the IAEA, demonstrate tangible benefits but require sustained funding.
- NDV capacity building is an intergenerational challenge requiring operational expertise and institutional memory.
- Embedding fairness and supporting diverse teams in nuclear governance enhances legitimacy, effectiveness, and innovation.
- Addressing historical injustices, such as the nuclear legacy in the Marshall Islands, requires victim-centred and rights-based approaches.

Additional resources

“Verification Without a Treaty. Demonstrative Verification in Arms Control, Disarmament, and Space Security”, by Tamara Patton and Pavel Podvig (2025).

<https://doi.org/10.37559/WMD/25/NDV/01>

“A Human Rights Approach to Nuclear Regimes: Lessons from the Legacy of Nuclear Testing in the Marshall Islands”, by Renata Hessmann Dalaqua (2025).

<https://www.justsecurity.org/121310/human-rights-nuclear-regimes-marshall-islands/>

“Embedding Fairness: Boosting Efficacy and Innovation in the Nuclear Weapons Space”, by Louis Reitmunn (2025).

<https://undir.org/publication/embedding-fairness/>

“A/HRC/57/77: Addressing the challenges and barriers to the full realization and enjoyment of the human rights of the people of the Marshall Islands, stemming from the State's nuclear legacy”, Report of the Office of the United Nations High Commissioner for Human Rights (2024).

<https://www.ohchr.org/en/documents/thematic-reports/ahrc5777-addressing-challenges-and-barriers-full-realization-and>

Photos courtesy of UNIS Vienna and the IAEA

