

MAPPING NON-PROLIFERATION AND DISARMAMENT EDUCATION IN EUROPE

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I. INTRODUCTION

Non-proliferation and disarmament (NPD) education involves a wide range of activities and target groups, from awareness-raising among the general public to job-specific training and capacity building. The term 'education' is used here to refer to educating next generations in Europe, with the objective of providing future scholars, officials, policymakers, journalists, activists and other professionals with knowledge on NPD-related issues. The term 'next generation' aims to include individuals that are in school, university or other forms of higher education and those that are in early to mid-levels of their careers, thus individuals that can become NPD professionals and scholars.

Education is crucial, for recruitment and conservation of professional communities, and also for ensuring adaptability of the community and field of work as a whole. Education seeks to disseminate knowledge and skills, to train students in critical thinking and analytical reflection, and to empower them to form personal opinions and independent assessments. While awareness of the general relevance of education exists, awareness concerning the benefits and shortcomings of existing educational efforts is lacking.

This paper aims to systematically analyse existing educational activities on the European continent with a view to outlining recommendations for improvement. The following section begins with providing the historical context, as NPD education has long been a matter of discussions by the United Nations. These discussions and subsequent decisions build the general framework of how to conceptualize NPD education. To narrow the focus from the global to the regional level, section III introduces key actors and their educational activities in Europe. The European network of independent non-proliferation and disarmament think tanks is particular as its membership is diverse across Europe and its mandate includes NPD education.

SUMMARY

This paper maps activities undertaken to educate the next generation of Europeans on non-proliferation and disarmament-related topics with a view to training future scholars and professionals, excluding capacity-building efforts. Most members of the European network of independent non-proliferation and disarmament think tanks conduct informal and formal educational activities, ranging from courses for students to workshops for young professionals, internships, networking events and mentoring programmes. However, the geographic distribution and dominant political science focus of these efforts illustrate the lack of accessibility and multidisciplinary of non-proliferation and disarmament education currently available in Europe.

Treating education as empowerment rather than a one-way process of recruitment can facilitate the introduction of new approaches and tools. Education can tap into existing potential among the next generation, such as intercultural competencies, multilingualism or technical know-how. Forms of participatory learning and autonomous project work place more responsibility on the learner to develop the skills required to deal with tasks.

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Section IV of this paper thus maps recent educational activities by the network and its members, based on information available online and information provided directly by network members. This mapping endeavour is not exhaustive, but outlines some fundamental shortcomings such as lack of accessibility, geographic distribution and multidisciplinary. Knowledge of such shortcomings is crucial in improving NPD education and strengthening its appeal and engagement of next-generation individuals. As section V elaborates, next-generation individuals, particularly those born between 1980 and 2005, have distinct characteristics that present new requirements and opportunities for NPD education. The concluding section summarizes the gaps identified through the mapping endeavour, and argues for the relevance and urgency of filling these gaps for effective NPD education.

II. CONCEPTUALIZING NON-PROLIFERATION AND DISARMAMENT EDUCATION

Historical context of the relevance of non-proliferation and disarmament education

NPD education has long been on the agenda of the UN General Assembly.¹ The First Special Session on Disarmament in 1978 and the Second Special Session on Disarmament in 1982 established milestones for education such as the UN Programme of Fellowships on Disarmament and the UN Office for Disarmament Affairs (UNODA). The UN General Assembly provided its most important boost to global efforts on NPD education in November 2000 when it tasked a Group of Governmental Experts (GGE) to conduct a study of the topic.² The subsequent report made 34 recommendations of varying levels of scope and detail for a range of actors.³ The fundamental objective of the 2002 study was to encourage UN member states to pay more attention and commit greater financial resources to NPD education, by funding research institutes, non-governmental organizations (NGOs) and universities to carry out research and training on NPD issues, among other things.

¹ Non-proliferation and disarmament (NPD) refers to the non-proliferation and disarmament of weapons of mass destruction and conventional weapons.

² United Nations, General Assembly, 'United Nations Study on Disarmament and Non-Proliferation Education', A/RES/55/33 E, 20 Nov. 2000.

³ UN, 'United Nations study on disarmament and non-proliferation education', Report of the Secretary-General, A/57/124, 30 Aug. 2002.

Recommendation 31 of the report encourages UN member states to designate a focal point for NPD education and to report on the steps taken to implement the recommendations of the 2002 study. Recommendation 32 encourages the UN Secretary-General to prepare a biennial report on implementation by member states, international organizations and NGOs. Unfortunately, the number of member states reporting has remained low; the highest number were the 25 UN member states that submitted reports to the GGE as a basis for assessing existing educational activities for the 2002 study.⁴ Only five member states provided national submissions to the secretary-general for the purposes of the 2018 report. In that report, the section on 'Implementation of the recommendations by civil society and non-governmental organizations' lists the educational activities carried out by the European Union Non-Proliferation and Disarmament Consortium (EUNPDC) and four members of the European network of independent non-proliferation and disarmament think tanks.⁵

The 2002 study remains a milestone document for NPD education. Action 22 in the final document of the 2010 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) repeats its encouragement of state parties to implement the recommendations in the 2002 study.⁶ The 2018 UN Agenda for Disarmament (*Securing our Common Future*) continues the emphasis on disarmament education by linking it to the Sustainable Development Goals (SDGs).⁷

Definition, purpose and topics of non-proliferation and disarmament education

Depending on target audience, specific content and aim, education can be conceptualized into two basic categories: providing information and skill sets in a broader, more academic fashion, addressing students; or relaying knowledge and competences in a tailored fashion to train individuals to carry out

⁴ Margoev, A. R. and Orlov, V. A., 'Recommendations of the 2002 United Nations study on disarmament and non-proliferation education: Where we stand now and where we should go further, including ideas for the next 10 years', *UNODA Occasional Papers*, no. 31 (2017), p. 85.

⁵ UN, General Assembly, 'Disarmament and non-proliferation education', Report of the Secretary-General, A/73/119, 2 July 2018.

⁶ UN, '2010 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons', Final document, volume I, 2010.

⁷ UN, *Securing Our Common Future: An Agenda for Disarmament* (UN Office for Disarmament Affairs (UNODA): New York, 2018).

certain functions, addressing practitioners.⁸ The latter category emphasizes practical competences and overlaps greatly with capacity building; that is, task-specific training, often involving training the trainers, to lay a structural basis for continuous tailored education of other practitioners and next generations.

More generally, the fundamental purpose of NPD education is to empower individuals to form their own opinions and engage with NPD issues. The objective of encouraging critical thinking, or relaying *how* to think rather than *what* to think, is fundamental to conceptualizing NPD education, as noted in the 2002 study. The aims are to raise awareness, promote an informed citizenry, and equip individuals with the knowledge and competence to enable them to understand and analyse the different levels and aspects of issues that promote or undermine international peace and security.

The above-mentioned UN documents contextualize NPD education in the broader setting of peace and conflict resolution. In its 2000 resolution the UN General Assembly set out the purpose of education to counter ‘cultures of violence and complacency’, with the broader aim of ‘strengthening international security and enhancing sustainable economic and social development’. The 2002 study further emphasized NPD education as being integral to peace education, with the fundamental task being to ‘impart knowledge and skills to empower individuals to make their contributions, as national and world citizens, to the achievement of general and complete disarmament’. NPD education thus presents part of a long-term approach ‘to reducing and eliminating violent conflicts of all kinds, as well as reducing and eliminating all forms of armaments and warfare’.⁹

The overarching objective of ‘disarmament’ stands out in UN documents such as the 2000 resolution, 2002 study or the Agenda for Disarmament. Non-proliferation is explicitly mentioned as a subset to disarmament education or as part of the toolbox for disarmament. The Agenda for Disarmament links NPD education with SDG 4 since education and efforts of ‘limiting the proliferation and uncontrolled circulation of weapons in communities’ enables sustainable learning environments. NPD education is thus set in

the context of peace and ethics, in relation to economic development, human rights and human security, which reflects the UN mission of promoting peace by demilitarizing security.¹⁰ Other documents, such as the final document of the 2010 NPT Review Conference, emphasize the non-proliferation aspect in NPD education. The final document furthermore outlines NPD education as fostering the non-proliferation regime and the community on which it builds, a workforce that includes officials and diplomats, scientists, policy advisers and civil society actors.

NPD education covers a wide range of topics. The above-mentioned UN documents explicitly mention the ‘disarmament and non-proliferation’ of weapons of mass destruction (WMD) and their delivery systems. NPD educational efforts also implicitly include those on conventional weapons, such as explosive devices, small arms and light weapons (SALW), their illicit trafficking and accumulation, and the objective of preventing armed violence and conflict. The NPD of WMD is at the centre of NPD education. The final document of the 2010 NPT Review Conference transcribes NPD education specifically as training ‘in nuclear, radiation, transport and waste safety and nuclear security’.¹¹ The Agenda for Disarmament includes arms control, limitations on and reductions of strategic weapons and conventional weapon systems as part of its disarmament *policy* toolbox, but does not outline an explicit link among NPD *education* and export controls, arms control, non-proliferation or disarmament of conventional weapons.

III. NON-PROLIFERATION AND DISARMAMENT EDUCATION IN EUROPE

International organizations based in Europe with mandates to educate

Recommendation 2 of the 2002 study encourages ‘relevant UN offices and other international organizations and agencies’ to prepare and disseminate educational material on disarmament and non-proliferation. Since the focus of the present paper is on NPD education in Europe, this section outlines the key actors for NPD education available in Europe: the UNODA, the UN Institute for Disarmament Research (UNIDIR), the UN Information Service,

⁸ Braunegger-Guelich, A. et al., ‘Need for strengthening nuclear non-proliferation and safeguards education to prepare the next generation of experts’, Paper prepared for the Symposium on Nuclear Safeguards, Vienna, Oct. 2014.

⁹ UN (note 7), pp. 68–69.

¹⁰ See: UN, ‘Secretary-General, in address to Learning Never Ends Colloquium, calls education investment which yields highest profit’, Press release, SG/SM/7125, 10 Sep. 1999.

¹¹ UN (note 6), para. 68.

the International Atomic Energy Agency (IAEA), the Organization for the Prohibition of Chemical Weapons (OPCW), the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty (CTBTO) and the Organization for Security and Co-operation in Europe (OSCE). For the latter two, educational efforts also mix with youth engagement and representation of youth voices.

The UNODA is the main UN institution tasked with NPD education. Its Vienna office leads its educational initiatives, which comprise a wide range of online and in-person learning opportunities on topics from cybersecurity issues to WMD, ballistic missiles and gender perspectives. UNODA also convenes regular networking events, such as the Vienna Forum, and offers scholarships in combination with education and training programmes, such as the annual Women Scholarship for Peace and the UN Programme of Fellowships on Disarmament, with the latter being the longest-running educational activity on NPD issues.¹² Moreover, UNODA coordinates the Disarmament and Non-proliferation Education Partnership, which pools and promotes the educational activities of an expanding group of international and regional organizations, NGOs and research centres.¹³ The Agenda for Disarmament promises the UNODA's continuing commitment to NPD education 'including through the establishment of a platform for youth engagement', in partnership with all interested entities. The Disarmament Education Dashboard provides a comprehensive overview of the UNODA's educational activities.¹⁴

The UNIDIR in Geneva conducts research on NPD education, organizes events in cooperation with other institutes to allow stakeholders to share best practices and briefs student groups on its research. The UN Information Service centres in Vienna and Geneva conduct interactive learning events such as a Model United Nations for high-school students and two-week intensive training on nuclear issues for postgraduate students. The OPCW and the IAEA run workshops and online platforms with remote-learning opportunities, as well as providing information on

fellowship programmes, workshops and events.¹⁵ The IAEA partners with relevant institutions as part of its International Nuclear Security Education Network to promote education on nuclear security issues.¹⁶ The CTBTO also provides an e-learning platform.¹⁷ The CTBTO combined and institutionalized outreach and education by launching the CTBTO Youth Group in 2016.¹⁸ Due to their highly specialized areas of work, the CTBTO, IAEA and OPCW focus on specific topics within the NPD field, such as nuclear testing, nuclear security, safety and safeguards or chemical weapons, emphasizing technical and technological dimensions such as inspections, monitoring and verification.

The OSCE is the major actor regarding NPD education in conventional arms control. Since the 1975 Helsinki Final Act, the OSCE committed to engage and educate young people with a view to facilitating exchanges and mutual understanding among states and peoples. The Ministerial Council declarations from 2014, 2015 and 2018 reaffirmed the OSCE's commitment to education and its understanding of youth's contribution to confidence- and security-building efforts.¹⁹ The OSCE's field operations in South Eastern Europe, Eastern Europe and Central Asia, its Office for Democratic Institutions and Human Rights, its high commissioner on national minorities and its representative on freedom of the media run distinct education- and youth-related projects.²⁰ The OSCE also cooperates with UNODA for the Scholarship for Peace and Security: Conflict Prevention and Resolution Through Arms Control, Disarmament and Non-proliferation in the OSCE Area programme. Recently, the OSCE secretariat launched its Perspectives 20-30 Initiative, which comprises a core group of experts of 22 diverse and young professionals.²¹

¹⁵ Organization for the Prohibition of Chemical Weapons, 'Education and outreach', accessed 31 July 2020; and International Atomic Energy Agency (IAEA), 'Education and training', accessed 31 July 2020.

¹⁶ IAEA, 'International Nuclear Security Education Network (INSEN)', accessed 31 July 2020.

¹⁷ See the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) e-learning platform: CTBTO, 'Knowledge and training portal'.

¹⁸ For more information, see CTBTO Youth Group, 'About the CTBTO Youth Group', updated 13 July 2020.

¹⁹ OSCE, 'Declaration on Youth', Ministerial Council Declaration MC.DOC/3/14 of 4 December 2014; OSCE, 'Declaration on Youth and Security', Ministerial Council Declaration MC.DOC/5/15 of 4 December 2015; OSCE, 'Declaration on the Role of Youth in Contributing to Peace and Security Efforts', Ministerial Council Declaration MC.DOC/3/18 of 7 December 2018.

²⁰ For more information, see OSCE, 'Youth', n.d.

²¹ The initiative aims to provide a platform for exchange and channels for including youth voices in security debates. The core group

¹² UNODA, 'The United Nations Programme of Fellowships on Disarmament', accessed 31 July 2020.

¹³ One member of the European network of independent NPD think tanks is also part of the Disarmament and Non-Proliferation Education Partnership: UNODA, 'Education Partnership'.

¹⁴ UNODA, 'Disarmament and non-proliferation regimes', accessed 31 July 2020.

The European network of independent non-proliferation and disarmament think tanks

The European network of non-proliferation and disarmament think tanks is a key actor for NPD education that is not only based in Europe, but a European actor in and of itself. The network was established in 2010 by European Council Decision 2010/430/CFSP, to support the 2003 European Union (EU) strategy against proliferation of WMD and the 2005 EU strategy to combat the illicit accumulation and trafficking of SALW and their ammunition.²² The European Council tasked a consortium of then four—and later six—institutes to assist with the technical implementation of the council decision. These institutes form the EUNPDC and oversee the establishment and promotion of the European network of independent non-proliferation and disarmament think tanks.

The 2010 council decision set the objectives of pooling expertise, providing consultations and making recommendations, and raising awareness in third states.²³ In 2014 the network's mandate was expanded to include more tailored educational objectives: raising awareness of the NPD of WMD and SALW; the development of expertise and institutional capacity within think tanks and governments in the EU and third countries; and providing means 'for the education of a new generation of experts on non-proliferation and disarmament'.²⁴ The network's educational mandate thus explicitly includes issues of WMD and conventional weapons; its educational mandate is also not limited to a certain target audience or

already produced a discussion paper and held a Youth Forum in 2019; see Core Group of Experts, 'Engaging youth for a safer future: OSCE perspectives 20-30 initiative', OSCE discussion paper, Nov. 2019.

²² Council of the European Union, 'Establishing a European network of independent non-proliferation think tanks in support of the implementation of the EU Strategy against Proliferation of Weapons of Mass Destruction', Council Decision 2010/430/CFSP of 26 July 2010. Council of the European Union, 'Fight against the proliferation of weapons of mass destruction. EU strategy against proliferation of Weapons of Mass Destruction', Council document 15656/03 of 10 December 2003; Council of the European Union, 'EU Strategy to combat illicit accumulation and trafficking of SALW and their ammunition' Council document 5319/06 of 13 January 2006.

²³ The term 'third state' equates to third parties, referring here to countries not part of the European Union.

²⁴ Council of the European Union, 'Promoting the European network of independent non-proliferation think tanks in support of the implementation of the EU Strategy against Proliferation of Weapons of Mass Destruction', Council Decision 2014/129/CFSP of 10 March 2014, Articles 1., paragraph 1, letter e, paragraph 3, letter d and paragraph 3, letter e.

activity. This paper excludes capacity building and job-specific training in order to focus on the objectives of educating the next generation in Europe and ensuring recruitment to the network and NPD professional community.

The network's educational mandate was expanded and specified in a 2018 council decision. This includes four specific activities: an e-learning course, an internship programme, the organization of visits to Brussels for participants in the UN Programme of Fellowships on Disarmament and a pilot training course for students of natural sciences.²⁵ The following paragraphs outline these four educational activities.

The e-learning course is an online education tool with a modular design that allows participants to choose from easily accessible, multimedia learning units.²⁶ The target audience is broad, ranging from diplomats, journalists and other professionals who are new to the field, to students and interested individuals. After completion of a certain number of learning units, users can receive certificates of participation. The platform comprises 15 learning units, covering a range of NPD issues from WMD to conventional weapons and advanced technologies. An additional five units are in development and unit content is kept up to date. The plurality of content contributors reflects the gender and geographic diversity of the network. A recent campaign to publicize the e-learning platform among European universities sharply increased the amount of access to, interaction with and time spent on the platform. Participants across the globe, but predominantly from Europe or specifically primarily from Germany, are using the e-learning tool. The EUNPDC strongly encourages its network members to promote and utilize the e-learning module, such as in the preparation of courses and workshops, and for interns, student assistants or new fellows. It also consults university-affiliated members on how to integrate this online resource into university courses and degree programmes by combining completion with collecting European Credit Transfer and Accumulation System (ECTS) credits.

²⁵ Council of the European Union, 'Promoting the European network of independent non-proliferation and disarmament think tanks in support of the implementation of the EU Strategy against proliferation of weapons of mass destruction', Council Decision 2018/299/CFSP of 26 February 2018, Annex, Point 3.

²⁶ See the European Union (EU) Non-Proliferation and Disarmament Consortium (EUNPDC), 'E-learning course', n.d.

The 2018 council decision stipulates 36 internships over the course of three years, 30 of which are to be reserved for participants from EU member states. The decision also outlines that the central purposes of internships are capacity building and ‘ownership of Union non-proliferation and disarmament policies’ within the network.²⁷ Graduate students and young diplomats from the EU and third states can apply for a three-month internship.²⁸ The internship programme covers the entire network and encourages network members to involve designated interns in their research and education. Where possible, the EUNPDC encourages interns to participate in the network’s events and to write relevant papers during their traineeship to be published on the network’s website. Between May 2018 and May 2020, 17 individuals from eight EU member states and three non-European states completed the internship programme; most of the participants identified as female and had political science backgrounds.

The EUNPDC is also tasked with organizing the annual Brussels study visits that are part of the European component of the UN Programme of Fellowships on Disarmament. The study visits include discussions with speakers from EU institutions and the network, and field trips to relevant locations. These activities educate UN disarmament fellows by disseminating in-depth knowledge and increasing the visibility of expertise and activities in Europe on WMD- and SALW-related issues.

The 2018 council decision also requested the ‘development of a pilot training course to raise awareness of proliferation risks, including those stemming from science and technology developments, among graduate and postgraduate students of the natural sciences’.²⁹ This initiative has the dual purpose of building awareness and knowledge of WMD proliferation risks among scholars from technical disciplines and providing the EU and the network ‘with fresh ideas on technological developments and their potential impact on non-proliferation’.³⁰ In February 2020, 26 graduate and post-graduate students in the fields of information technology (IT) and engineering

from 11 universities in 11 European states participated in the pilot course.³¹ The three-day course combined class sessions with lecturers from members of the network and international organizations as well as e-learning opportunities.³² The pilot course fulfilled its aims of raising awareness and disseminating knowledge on NPD-related issues, particularly on new technologies or new applications of known technologies for analysis, monitoring and verification purposes.

In addition to the common objectives of education such as awareness-raising and recruitment, the network’s education activities also aim at ‘the creation of a common European culture on non-proliferation and disarmament’.³³ The mandate thus encourages the building of a broad European epistemic community on NPD issues, or at least a common European platform for issue-specific epistemic communities in Europe, on the basis of the network.

The notion of an epistemic community refers to a network of professionals with expertise in a particular domain, with ‘an authoritative claim to policy-relevant knowledge within that issue-area’.³⁴ Haas’ conceptualization of an epistemic community goes beyond the simple equation to a scientific community, in the direction of a thought collective or a community with a shared set of normative principles, causal beliefs and notions of validity, and a common policy enterprise. The latter attribute refers to a ‘common set of practices associated with a set of problems’; it is not a consensus among members that defines an epistemic community but an in-depth knowledge and understanding of the dynamics underlying challenges and of possible policy solutions.³⁵ While members of epistemic communities on NPD issues may favour different policies or differ in emphasizing non-proliferation over disarmament, they agree on the merit of negotiated solutions such as arms control and verifiable limitations, confidence-building

²⁷ Council of the European Union (note 25), Description of Projects 3.7.

²⁸ On the EU NPD internships, see EUNPDC, ‘EU Non-Proliferation and Disarmament Internships’, n.d.

²⁹ Council of the European Union (note 25), Article 1, paragraph 3, letter f.

³⁰ Council of the European Union (note 25), Annex, Description of the Projects, Point 3.9.1.

³¹ Vienna Centre for Disarmament and Non-proliferation (VCNP), ‘Short course on the spread of nuclear weapons: History, threats and solutions’, 3 March 2020.

³² The VCNP e-learning module is now publicly accessible, see VCNP, ‘VCDNP E-Learning Module’, 22 Mar. 2020.

³³ This is mentioned in Council Decision 2014/129/CFSP (note 24) and 2018/299/CFSP (note 25), para. 9, in linkage to the fact that the network is based entirely on EU funding.

³⁴ Haas, P. M., ‘Introduction: epistemic communities and international policy coordination’, *International Organization*, vol. 46, no. 1 (1992), pp. 1–35.

³⁵ Haas (note 34).

measures and policy coordination in order to mitigate arms races and security dilemmas.

Political science studies outline the particularities of epistemic communities in promoting policy evolution by stimulating innovation and shaping policy diffusion, selection and persistence. Knowledge flows within the community, across to branches of government and across state borders. Subsequent processes of learning can also lay the foundations for transnational policy coordination and international cooperation.³⁶ Establishing a European epistemic community on NPD-related issues thus serves the EU's need for policy consultancy and promotion. Epistemic communities are naturally concerned with education in order to sustain themselves and recruit new members. Knowledge transfer does not simply serve to conserve expertise; it also provides pathways to innovate the epistemic community from within and increase its adaptability.

IV. MAPPING EDUCATIONAL ACTIVITIES BY MEMBERS OF THE EUROPEAN NETWORK OF NON-PROLIFERATION AND DISARMAMENT THINK TANKS

This section outlines the findings of a mapping endeavour that sought to gain an overview of the educational activities on NPD issues of the European network of non-proliferation and disarmament think tanks. As a major part of this study, a questionnaire was emailed to each member of the network in March and April 2020.³⁷ The questionnaire asked participants to outline the number, frequency, topic and format of the educational activities they run on NPD-related issues. Relevant activities would be linked to disseminating knowledge and competences, as well as mentoring, networking and offering internships, fellowships or accessible events. Participants provided details of their offer targeted at undergraduate or graduate students, early- to mid-career scholars and professionals, new

fellows, trainees and interns.³⁸ The questionnaire also asked participants to reflect on the requirements for participation, the proportion of female participants, and any general strengths, shortcomings and changes over time.

Information was received from 47 network members, which is almost half of the network's 95 members. Of these, 39 network members completed the questionnaire and shared details of their educational activities in 2019 and 2020. The significant percentage of non-responses means that the results of the survey are merely a snapshot of recent and current NPD education, which can help to structure available educational offers within the network. The survey results are complemented below by information gathered from the network's website and members' websites where accessible.

Overview of network members

As of July 2020 there were 95 network members in 30 different states (the EU 27 member states, Switzerland, Ukraine and the United Kingdom).³⁹ The spectrum of entities and their self-characterizations are diverse. Members described themselves as NGOs, non-profit organizations, public policy research institutes, foundations, associations or networks of researchers, and research institutes and centres.

For the sake of simplicity, this paper divides network members into think tanks and university research institutes. The latter are explicitly part of a university, included in one or more university faculties, and offer university courses that allow students to collect points within the ECTS. The remaining network members are categorized as think tanks. This binary distinction oversimplifies the think tank group, but serves to emphasize key differences. University research institutes explicitly—if not solely—target university students, pursuing bachelor's, master's or doctoral degrees. The category of university research institute refers to faculty members who conduct research and teaching as part of faculties, research groups or

³⁶ Adler, E., 'The emergence of cooperation: national epistemic communities and the international evolution of the idea of nuclear arms control', *International Organization*, vol. 46, no. 1 (1992), pp. 101–45; and Sebenius, J. K., 'Challenging conventional explanations of international cooperation: negotiation analysis and the case of epistemic communities', *International Organization*, vol. 46, no. 1 (1992), pp. 323–65.

³⁷ The questionnaire is available as table A4 in Annex II, accessible at, EUNPDC, 'Non-Proliferation and Disarmament Papers', n.d.

³⁸ Students in primary and secondary education are not part of this assessment. However, as other studies show, NPD education prior to university level is very important. See Toki, M., 'Bringing disarmament and nonproliferation education to a wide audience: Case study of high school students in the US and Russia', *Osaka University's International Public Policy Studies*, vol. 13, no. 1 (2008), pp. 147–64.

³⁹ While the network's website is in the process of being updated, this number is based on information from the EUNPDC, see EUNPDC, 'The Network', n.d.

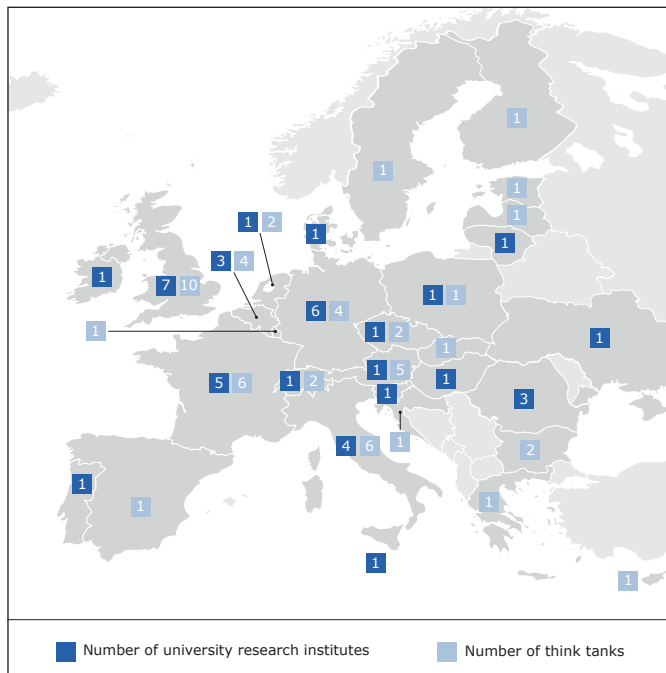


Figure 1. Geographic distribution of network members across Europe

Source: EU Non-Proliferation and Disarmament Consortium, ‘Members of the Network (Alphabetical Order)’.

departmental centres. Think tanks vary greatly in their missions and in the degree to which they emphasize research, policy consultancy, advocacy or education.

Think tanks account for 57 per cent of all network members. Table A1 in Annex I provides an overview of the network’s composition, and figure 1 illustrates the geographic distribution of think tanks and university research institutes.⁴⁰ Many think tanks do not describe their purpose as offering formal NPD education; their focus is on research and consultancy. On the basis of the survey and information available online, 39 think tanks engage in NPD education that targets various audiences. Five think tanks cooperate formally with local universities and contribute to university education; four of these (two entities each in Czechia and Germany) support local Master of Arts degree programmes on international security. Individuals at 11 think tanks are also affiliated with local universities and offer NPD education in their respective capacities as professors. Seven of these plus nine additional think tanks provide education to young scholars and early- to mid-career professionals from government, industry,

⁴⁰ See Annex I and Annex II, accessible at, EUNPDC, ‘Non-Proliferation and Disarmament Papers’, n.d.

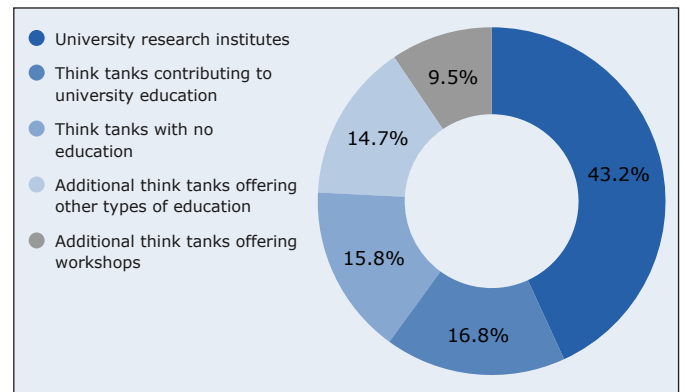


Figure 2. Forms of education by network members

Source: Author’s compilation.

journalism and high schools, such as workshops or intensive training. Fourteen think tanks do not offer education in the form of courses or training, but engage with students and young scholars through fellowships, internships, mentoring, networking events and programmes. Individuals at think tanks also give guest lectures at universities or host student groups at their place of research; these educational activities are irregular or infrequent and thus not accounted for in this survey. Figure 2 illustrates the share of these different categories of educational activities offered by network members.

Formats and target audience

Thus, 60 per cent of all network members—41 university research institutes and 16 think tanks—engage in university education, even if not entirely or solely on NPD-related issues.⁴¹ According to the questionnaire results, university-style courses attract between 10 and 120 students, with the average audience being around 40 participants. Regardless of audience size, the dominant format of these university courses are lectures. More interactive formats, such as seminars or exercises, appear to be offered on a fairly limited basis. Seminars require more active audience participation, and therefore provide better opportunities for participatory learning. Lectures serve to disseminate basic knowledge or a common level of knowledge. It is not clear why lectures represent the dominant or preferred form of teaching. The survey found that prior knowledge and

⁴¹ Three university research institutes stated that they do not offer any education on issues related to NPD as defined above. Most university research institutes and think tanks acknowledged that NPD issues are often sidelined from formal or informal education activities.

competences are preferred if not required for almost all courses. Most university courses on NPD-related issues target graduate students, so students pursuing master's degrees or doctorates.

Given the educational objective of providing training in critical thinking and analytical skills, interactive formats offer clear benefits. A small number of network members offer forms of participatory learning. Five university research institutes—from technical, natural sciences and legal faculties—conduct exercises and involve students in practical work.⁴² Only one university research institute offers curricular courses that employ simulations, such as modelling multilateral negotiations.⁴³ Only two think tanks conduct such simulations and modelling exercises as part of workshops targeted at early- to mid-career professionals rather than students.

Some network members offer intensive courses such as several days of training or summer schools; 13 think tanks and two university research institutes run such events at least once a year. Most think tanks tailor such intensive courses, one-day or shorter workshops to young scholars and early- to mid-career professionals such as government officials, diplomats, private sector workers and media representatives. Three think tanks offer extracurricular workshops that engage explicitly with university students.

Many think tanks engage with undergraduate students and graduate students through internships and short-term employment opportunities. In addition to gaining insights into the field and first-hand experience of NPD research, interns and student assistants have opportunities to network among themselves and receive informal mentoring from senior fellows. Independent of internship programmes and informal mentoring, six think tanks actively maintain networking programmes for young scholars and new fellows. Six think tanks actively administer networks

⁴² Multimedia tools also increase the degree of participation in educational activities. Only four network members—three think tanks and one university research institute—explicitly mentioned the use of web-based learning tools, such as the EUNPDC e-learning platform. Network members completed the survey at the start of the coronavirus disease 2019 pandemic so the amount of distance learning and web-based education is likely to have increased since. The use of online tools by network members is therefore excluded from the analysis.

⁴³ The most popular form of participatory learning is the Model United Nations. This allows students to prepare for their ascribed roles by putting them in such positions, conducting negotiations and experiencing the dynamics of multilateral negotiations. Role play is well suited to gaining a better understanding of negotiations in the NPD context.

for alumni. While only two university research institutes actively maintain communications with alumni, most university research institutes conduct mentoring and networking by supervising graduate students, interns and student assistants. Mentoring and networking are essential for encouraging next generation individuals to choose a career in the NPD field. While informal and individual mentoring is most adaptable to the diversity of backgrounds, interests and needs, formal and institutionalized mentoring programmes are necessary to ensure equality of opportunity for support.⁴⁴

Publicly accessible events, especially when specifically targeted at engaging next generation individuals, also contribute to NPD education. All network members hold conferences, lectures and similar events on NPD-related issues. Most think tanks hold private conferences and events, strictly tailoring their target audience to professional groups. Few think tanks organize events that engage newcomers and next-generation individuals. Only two think tanks that participated in the survey organize networking events specifically targeted at graduate students, early- to mid-career scholars and professionals. One of these networking events is the EUNPDC's Next Generation Workshop, which usually precedes the annual network conference, and brings together graduate students, early-career scholars and professionals to present an NPD topic of their choosing, and to connect with peers, senior experts and officials at the network conference. Figure 3 illustrates the share of formats that network members employ for NPD education and outreach.

Range of topics

Network members are concerned with a broad range of issues: (a) biological weapons (BWs) and chemical weapons (CWs), and their NPD; (b) relevant treaties and organizations; (c) chemical, biological, radiological and nuclear (CBRN) terrorism; (d) nuclear weapons and their NPD; (e) ballistic missiles and other delivery systems; (f) missile defence and arms control; (g) nuclear safety, security and safeguards; (h) conventional weapons, arms control and arms export controls; (i) SALW and their illicit trafficking;

⁴⁴ A joint mentoring programme is being developed by two network members. It aims to increase students' interest in NPD issues, paying special attention to engaging women students, and will offer a mentorship programme and internships to facilitate the entry of women into the field.

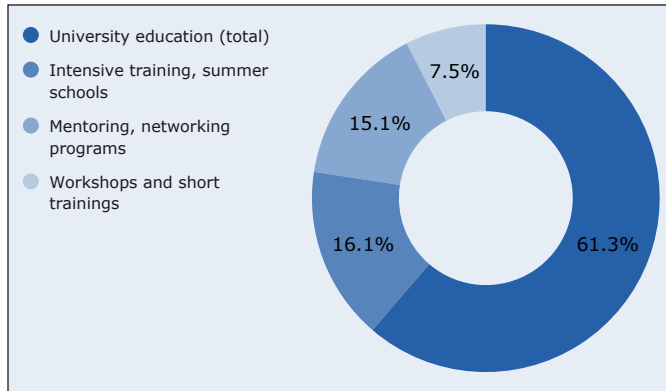


Figure 3. Formats of education by network members

Source: Author's compilation

Notes: University education (total) includes lectures, seminars, exercises and simulations. The three categories of non-university education have mixed target groups, including students, early- to mid-level professionals.

(j) military applications in cyberspace and outer space; (k) artificial intelligence and other emerging technologies; (l) regional security issues; and (m) international security and strategic stability. Figure 4 illustrates the share of topics across the network's educational activities.

Arms control was the most common theme of NPD education. The curricula of the courses run by university research institutes within the discipline of political and social sciences focus on international relations (IR) theories on conflict, cooperation and normative dynamics, and place prevailing arms control issues and their causation in this context. Courses within the legal discipline discuss the underlying treaties and diplomatic negotiations. The common theme of arms control are the quantitative limitation and reduction of nuclear warheads and certain types of delivery vehicles. IR and international law courses focus mainly on the bilateral arms control accords, the 1968 Treaty on the Non-Proliferation of Nuclear Weapons and the 2017 Treaty on the Prohibition of Nuclear Weapons, but pay little attention to zones that are free from nuclear weapons, historical cases of proliferation, non-proliferation and successful disarmament, or other, more technical, aspects of nuclear NPD. Several respondents to the survey outlined that proliferation crises and regional security issues, such as those concerning Iran and the Democratic People's Republic of Korea (DPRK, North Korea), are of particular interest to students. While the issue of nuclear weapons is broad, existing educational offers appear to barely discuss the role of nuclear

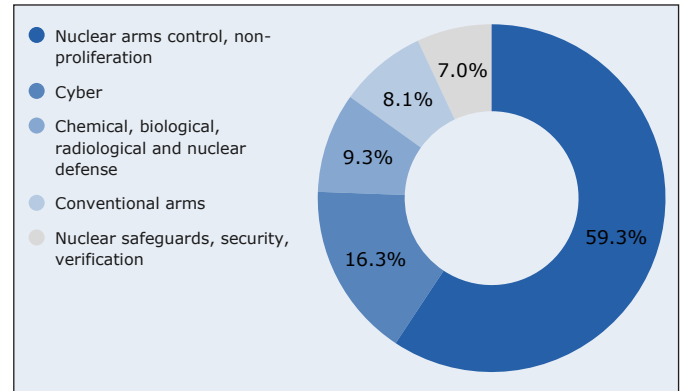


Figure 4. Topics of non-proliferation and disarmament education covered by network members

Source: Author's compilation.

weapons in Europe and in European security. Where time and offers are limited, topical issues prevail; where there are more explicit courses on NPD, normative and theoretical debates prevail.

In contrast, technical and natural science faculties emphasize scientific ethics, dual-use applications and disarmament within the military spectrum. Three university research institutes are concerned with issues of nuclear security, safety and safeguards. Nuclear technologies and technologies used in monitoring and disarmament verification are of particular concern here. Topical proliferation cases, such as those of Iran and North Korea, serve as practical examples. While university courses within the political and legal disciplines predominantly target graduate students, technical departments involve undergraduate and graduate students in practical work.

Four think tanks offer education on the technical or technological dimensions of nuclear issues. These educational offers are tailored to young scholars and professionals, often early- to mid-career government officials interested in intensive training on nuclear safety, security, safeguards and verification issues. These forms of NPD education aim to prepare professionals for certain tasks and paths in their careers. Arms control, regional proliferation crises and strategic stability also appear to be overarching themes of workshops, public lectures and accessible events run by think tanks. The topics covered in other educational activities such as mentoring and internships depend largely on the expertise of the researchers.

An increasing number of network members address the diverse and growing subject area of advanced technologies, which include the domains of cyberspace, outer space and artificial intelligence,

in their educational activities (14 network members address applications of cyber technologies, artificial intelligence and automatization in security and warfare). Among these, seven university research institutes are located within political science departments or international law faculties. One of these sits directly at the interface between the political science and computer science departments. While many more think tanks conduct research on cyberspace, outer space, artificial intelligence and lethal automatized weapon systems, only four cover such issues in their workshops or intensive courses, and an additional three in cooperation with university degree programmes.

The BW, CW and CBRN threat subject areas are not well represented in the network. Three think tanks cover the issues of CBRN terrorism, and BW and CW arms control in their educational offers, while around 15 think tanks conduct research on these issue areas. Five university research institutes offer courses on WMD- and CBRN-related issues. These university research institutes stem from political science departments or interdisciplinary research centres that draw expertise from the natural sciences.

The network's mandate explicitly mentions conventional weapons and SALW. The 2018 European Council decision places particular emphasis on this issue with reference to the new EU SALW strategy.⁴⁵ While around 12 think tanks conduct research on conventional weapons, arms export control and SALW, only three offer education on these topics. Interestingly, these think tanks identify as NGOs and address students rather than professionals. Four university research institutes cover conventional weapons issues—one of them explicitly and exclusively, the others in combination with wider arms control topics.

A significant number of respondents, especially those from university research institutes, explained that NPD-related topics are often sidelined. There is student interest, especially in current, high-profile NPD topics, but university courses require a broader curriculum and adjustment to degree programmes. Nonetheless, a significant proportion of educational offers explicitly cover NPD issues, either because individuals or entire faculties invest time and effort to offer additional curricular or extracurricular courses, or because

the modular system of degree programmes (often those focused on international and security studies) allows them to devote entire courses to NPD issues. One obvious particularity and clear advantage is the personal commitment to NPD topics of many network members. Although individual involvement is key, long-term engagement of the next generation requires regular institutionalized educational activities. Given the growing linkages among domains and issues—as one network member outlined in the questionnaire—more cooperation between departments and institutes is needed to address a broader, multidisciplinary group of students and successfully prepare the next generation of NPD experts.

Geographic distribution and accessibility

The location of institutes governs the geographic distribution and availability of educational offers; 19 per cent of network members are based in the newer EU member states and Ukraine.⁴⁶ Half of all network members in these states are university research institutes, predominantly within political science and IR faculties; two university research institutes (in Romania) stem from technical departments or are at the intersection of multiple disciplines. Half of the think tanks (as defined in this paper) in the newer EU member states either contribute to university-style formal education (due to individual affiliations or institutional cooperation) or offer workshops, training or summer schools. Issues of WMD NPD have been sidelined relative to educational topics such as conventional arms or hybrid and other threats to European security.⁴⁷

Apart from the above-mentioned group of newer EU member states and Ukraine, network members located in states that do not possess and are not host to nuclear weapons—categorized as 'remaining states' in Table A1 in Annex I—make up 20 per cent of the network. Most NPD education within this group takes place in Austria and Switzerland, and is conducted by think tanks and university research institutes.

Most network members are based in states that host or possess nuclear weapons. Most of the NPD-related education also takes place in these states. While the UK

⁴⁵ Council Decision 2018/299/CFSP of 26 February 2018 (note 25); and Council document 13498/18 of 19 November 2018, 'Council Conclusions on the Adoption of an EU Strategy Against Illicit Firearms, Small Arms & Light Weapons & Their Ammunition'.

⁴⁶ Bulgaria, Croatia, Czechia, Estonia, Hungary, Latvia, Lithuania, Romania, Poland, Slovakia and Slovenia.

⁴⁷ Rózsa, E. N. and Péczeli, A., 'Nuclear attitudes in Central Europe', EU Non-Proliferation and Disarmament Consortium, Non-Proliferation and Disarmament Paper no. 42 (Jan. 2015).

is host to the highest number of network members and the highest number of university research institutes, NPD education is also widely available in Germany and Italy. In addition to the number of university research institutes, most think tanks in Germany and Italy offer NPD education. Scholars have highlighted the existence of distinct epistemic communities of political and natural scientists concerned with nuclear disarmament that might contribute to this strength in NPD education.⁴⁸

Web-based learning opportunities can improve accessibility and mitigate geographic dispersal. Online multimedia tools can be designed to be easily accessible, employing different languages in addition to English or other relevant subtitles. Multimedia e-learning also presents opportunities for participatory learning. The EUNPDC e-learning programme represents such a tool that is easily accessible, participatory and covers all the relevant fields of NPD education. Only four network members—three think tanks and one university research institute—explicitly mentioned their use of the EUNPDC e-learning programme, self-designed platforms or online courses by UNODA in their questionnaire. Such web-based education materials are commonly used in preparation for in-person classes or workshops.

At the time of the survey, coronavirus disease 2019 (COVID-19) was in the relatively early stages of its spread across Europe. Participants were not therefore able to outline in their responses the range of remote educational activities that have emerged. Nonetheless, many participants described an increase in multimedia and online tools as a general trend. As a minimum, most university research institutes maintain web-based platforms for uploading reading material, submitting papers, sharing information and distributing tasks. Some university research institutes, but primarily individuals based in technical or natural science university facilities, employ more interactive web-based tools, such as software for communication and collaboration, and as avenues for networking and joint working.

⁴⁸ Foradori, P. and Giacomello, G., 'Fighting nuclear proliferation through education. The remarkable story of ISODARCO', *Modern Italy*, vol. 23, no. 3 (Aug. 2018), pp. 331–44.

Diversity and multidisciplinary

Respondents to the survey estimated the proportion of female participants in educational activities. The average estimate was 43 per cent in university courses, workshops and intensive training by think tanks. The average share of female participants in courses of an explicitly technical nature, such as computer science, engineering and physics, dropped to around 22 per cent. The above-mentioned pilot course for graduate and postgraduate students of IT and engineering had a 27 per cent share of female participants. Table A3 in Annex I provides an overview of the average gender balance.

Although numbers have gradually increased in recent decades, women remain under-represented in the NPD field, be it as students, instructors or practitioners. The reasons for the gendered pattern of participation in arms control and disarmament diplomacy also apply to NPD-related education—'hard security' and the technical and military nature of NPD topics still have stereotypical and socially constructed attributes that draw more interest from male students, young scholars and professionals.⁴⁹ The language used and associated with weapons and warfare is often technical, abstract and masculine. This kind of terminology intensifies stereotypes and fosters perceptions of exclusivity, constructing additional obstacles for young women and other prospective members of the NPD community.⁵⁰

The existence of female role models is important for recruitment and retention, to stimulate interest and to encourage students to enter and remain in traditionally male-dominated fields.⁵¹ From the information available on the network members' websites, almost all the instructors within natural science departments in university research institutes, and individuals in the natural scientists' associations appear to be male. Only 30 per cent of the experts and points of contact listed on

⁴⁹ Hessmann Dalaqua, R. et al., *Still Behind the Curve: Gender Balance in Arms Control, Non-proliferation and Disarmament Diplomacy* (UN Institute for Disarmament Research: Geneva, 2019).

⁵⁰ Cohn, C., 'Sex and death in the rational world of defense intellectuals', *Signs*, vol. 12, no. 4 (1987), pp. 687–718; and Hurlbur, H. et al., *The Consensual Straightjacket: Four Decades of Women in Nuclear Security* (New America: Washington, DC, 2019). The Centre for Feminist Foreign Policy, based in Berlin and London, also highlights the 'traditionally idealized masculine traits of dominance and power' in the field, see Conway, M., 'A feminist nuclear policy', Ploughshares Fund, 3 Apr. 2019.

⁵¹ Young, D. M. et al., 'The influence of female role models on women's implicit science cognitions', *Psychology of Women Quarterly*, vol. 37, no. 3 (2013), pp. 283–92.

the EUNPDC website are women. This is the average among think tanks and university research institutes.

NPD issues are at the intersection of a multitude of disciplines; the network replicates this multidisciplinary in part due to the diversity of its members. Table A2 in Annex I provides an overview of the categorization of network members by discipline, and figure 5 illustrates the distribution of disciplines within the network. Many think tanks (61 per cent, 33 entities) cover the humanities, such as political science, history, economics and regional studies.⁵² Five think tanks combine political and legal studies. One think tank in France focuses explicitly on international law, while 11 think tanks employ fellows from all the relevant disciplines, combining political sciences and legal studies with natural sciences. Two think tanks—or rather scientist associations in Italy and the UK—consist mainly of physicists, while two think tanks (in Austria and Estonia) focus explicitly on technical dimensions.

University research institutes are commonly located within a single, specific university department. Academic degree programmes and university courses are often limited to a certain discipline or related sciences. A majority of 59 per cent, or more specifically 24 university research institutes, affiliate with political or social sciences, including history, economics or regional studies. Two university research institutes (one in France and the other in the UK) are part of legal studies faculties. Seven university institutes combine political and legal sciences (based in Belgium, France, Italy and Poland). Three university research institutes (in Romania and the UK) have multidisciplinary research groups that combine political, legal and technical studies, and human sciences. Three university research institutes in Germany are part of natural science departments. These address students on WMD-related matters. One university research institute in Germany combines political science with computer sciences. One university research institute in Romania is a technical university that targets students of engineering on matters of conventional arms.

Only nine network members that participated in the survey explicitly listed interdisciplinary educational activities. Many of the university educational activities that combine different disciplines take

place in Germany, Italy and the UK. Most of the multidisciplinary non-university training is available in Austria and the UK.

Additional considerations

Many of the network members that participated in the survey stated a willingness to offer more education on NPD issues but referred to a lack of funding and limited personnel capacities to do so. In particular, university research institutes are aware of their limitations in offering courses on a regular or frequent basis. Professors and faculty chairs also outlined that financial support for research projects undertaken by graduate students or scholarships for PhD students are the most effective ways to actively engage with and encourage the next generation to pursue an educational or career path in the NPD field.

The university research institutes that supervise graduate theses asked the EUNPDC to expand opportunities for graduate students to engage with the epistemic community, such as by broadening participation in the Next Generation Workshop or increasing its frequency.

Highlighting the standardization of higher education in Europe, network members suggested developing a joint exchange programme or master's degree programme specifically designed for graduate students interested in NPD issues, promoting cooperation between university research institutes and providing for the mobility of students across the network.

One university research institute within the natural sciences highlighted that technical support staff are commonly overlooked and excluded from NPD education. The individuals who conduct practical work in laboratories are not part of any target groups, even though they could contribute relevant perspectives and are at the forefront of the practical side of NPD issues.

Finally, network members greatly appreciate the EUNPDC internship programme. However, some members outlined that the three-month duration of internships often inhibits the successful conclusion of projects because preparation, initial instructions and practical work, especially in technical fields, all take time.

V. EDUCATING THE NEXT GENERATION

Generational shifts shape and are shaped by developments in the zeitgeist, the security environment

⁵² Attributing disciplines to certain think tanks is difficult. The numbers are based on self-attribution and researchers' backgrounds published on the EUNPDC and members' websites.

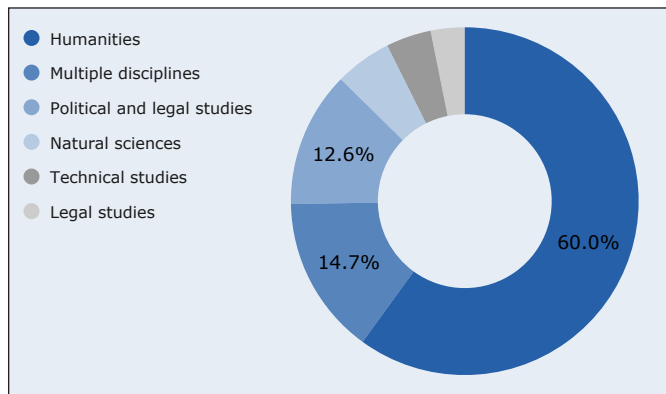


Figure 5. Disciplines represented by network members

Source: Author's compilation

Note: Natural sciences, legal studies and technical studies represent 5.3%, 4.2% and 3.2%, respectively.

and technological evolution. Engaging the next generation requires NPD education to adapt to the target audience of individuals born between 1980 and 2010, also referred to as millennials and Generation Z.⁵³ Unfortunately, there is little polling or systematic data available that characterizes these particular generations across Europe, particularly their attitudes to WMD-related issues.⁵⁴ This section outlines the probable trends and relevant characteristics that distinguish these generations from previous ones, significant differences that are relatively independent of life-cycle effects. The terms 'next' or 'young' are not intended to ignore early- to mid-career scholars and professionals. A significant proportion of millennials are already part of the workforce. The term 'next generation' simply aims to highlight the need for adaptability and innovation, and the need for NPD-related education to attract younger participants and train a modern workforce of 21st century experts, scholars and professionals.

Reframing non-proliferation and disarmament issues

Millennials and Generation Z have little or no conscious experience of the cold war. All the major interstate wars that have shaped European history

⁵³ The terms 'millennial' and 'Generation Y' commonly refer to individuals born between 1980 and 1995. 'Generation Z' refers to individuals born between 1995 and 2010.

⁵⁴ The polling of 10 000 citizens under 30 in 28 European states on their attitudes to nuclear weapons is unique in its outlook and findings. Pelopidas, B., 'The next generation(s) of Europeans facing nuclear weapons: Forgetful, indifferent but supportive?', EU Non-Proliferation and Disarmament Consortium, EU Non-Proliferation and Disarmament Paper no. 56 (Mar. 2017).

are known only distantly through history books or commemoration days. In contrast, more recent political and economic challenges—from instability in young democratic states to transnational threats from terrorism, climate change and pandemics—are at the forefront for these generations.

Growing up in or after the era of European integration, and taking for granted almost unrestrained personal mobility on the continent, does not automatically lead to cosmopolitanism—although an acceptance of globalism is certainly stronger than among previous generations.⁵⁵ However, it does make an automatic acceptance of the application of cold war patterns of analysis to the present—or looming—international order less likely.⁵⁶ While binary thinking and categorization into friend or foe continue to appeal to many, developments after the cold war are more likely to socialize millennials, Generation Z and following generations to perceive and accept higher degrees of interconnectedness and interdependency among states and transnational actors such as corporations.⁵⁷

⁵⁵ auf dem Brinke, A., Gnath, K. and Ständer, P., 'What millennials think about the future of the EU and the euro', Bertelsmann Stiftung eupinions Policy Brief 2016/01, Dec. 2016. The Shell study exemplifies the lack of cosmopolitanism among German respondents aged between 12 and 25, whose attitudes to refugees are evenly split between liberal mindedness with no clear opinion and an attraction to populism, see Shell, '18th Shell youth study', Hamburg, Oct. 2019.

⁵⁶ A recent survey illustrates significant differences between millennial respondents (aged 18–34) and older generations in Germany. Younger generations ascribe importance to close relations with China, less importance to transatlantic relations and greater indifference or scepticism about the importance of United States extended nuclear deterrence for Germany, see Körber Foundation, 'Multilateralismus - April 2020, Eine Studie von Kantar im Auftrag der Körber-Stiftung [Multilateralism - April 2020, a study by Kantar on behalf of the Körber Foundation, April 2020]', Apr. 2020. In a similar survey, 55% of young respondents saw the current conflict between China and the USA resulting in a kind of cold war as rather unlikely, while 31% saw it as fairly likely see Körber Foundation, 'Deutsche Außenpolitik: September 2019, Eine Studie von Kantar im Auftrag der Körber-Stiftung [German foreign policy: September 2019, a study by Kantar on behalf of the Körber Foundation]', Oct. 2019. These and other opinion surveys in Germany on foreign affairs are discussed by Albermann, P., 'German millennials, their *Weltanschauung* and the transatlantic relationship', American Institute for Contemporary German Studies, Johns Hopkins University, 9 July 2020.

⁵⁷ A recent survey found positive attitudes to global interconnectedness: 70% of German millennial respondents viewed globalization as beneficial to Germany and to them personally. Among older respondents, attitudes were more mixed, see Körber Foundation, 'Multilateralismus: April 2020' (note 56). An analysis of US millennials and their attitude to foreign policy found an increasingly urgent desire for international cooperation and decreased approval of military means for resolving conflicts, see Thrall, A. T. and Goepner, E., 'Millennials and U.S. foreign policy: The next generation's attitudes toward foreign

The post-1990 evolution of the global distribution of power, the acceleration of globalization, the evolution and proliferation of technologies, and the growing degree of transnational threats have all influenced the traditional focus on defence policies and military conflicts. NPD issues compete with an increasing range of urgent topics that mirror the multitude of actors, issue linkages and advancing technologies. Across most surveys of younger generations, climate change is identified as the primary security challenge.⁵⁸ While environmental politics has activated mass student protests, a 2017 study outlines that younger generations exhibit 'strong feelings of powerlessness, of inability to change the outcome' when it comes to more traditional security and defence issues.⁵⁹

It is not entirely clear if—given the development and militarization of other advanced technologies—WMD really have a reputation for outdatedness as weapons of the 20th century for members of Europe's next generation, most of whom have had no direct exposure to military conflicts.⁶⁰ Nonetheless, NPD education can benefit from linking WMD to the 21st century by highlighting the demise of arms control arrangements, accelerated modernization and procurement programmes, and growing interlinkages with other domains of warfare and technology. Educators need to outline the implications of nuclear

policy and war (and why they matter)', Cato Institute, Washington, DC, 16 June 2015.

⁵⁸ A survey of members of the Younger Generation Leaders network on Euro-Atlantic Security, a group of young professionals from North America, Europe and Russia, identified environmental change and economic inequalities as the most important challenges in the coming decades, see European Leadership Network, *YGLN Annual Trend Survey 2019* (European Leadership Network: London, Apr. 2020). Recent polling of German millennials and Generation Z ranks climate change, peacekeeping and terrorism as the most important issues, see Rotmann, P., Bressan, S. and Brockmeier, S., 'New expectations: Generation Z and changing attitudes on German foreign policy', Global Public Policy institute, Berlin, June 2020.

⁵⁹ Pelopidas (note 54), p. 14. The study also finds that the possession or hosting of nuclear weapons does not appear to play a significant role in determining knowledge levels and attitudes. A different study of nine EU and North Atlantic Treaty Organization member states finds a significant lack of knowledge on nuclear weapons across generations, see Pelopidas, B. and Fialho, F. M., 'Nagasaki's shadows: European citizens facing nuclear weapons', *The Conversation*, 9 Aug. 2019.

⁶⁰ A recent study by the International Committee of the Red Cross (ICRC) found that 54% of millennial respondents believe 'it is more likely than not that a nuclear attack will occur in the next decade'. It is questionable, however, whether this finding is applicable to all European millennials since the survey was carried out in 16 states, most of which are war affected or states that possess nuclear weapons. ICRC, 'Majority of millennials see catastrophic war as real possibility, and believe there should be limits', Press release, 16 Jan. 2020.

armament and conflict, accidents and miscalculations for transnational political and economic stability, and the environment. This would increase awareness among European millennials and Generation Z, and also reflect actual developments. The Agenda for Disarmament outlines that 'the pace of technological development and dissemination is challenging governmental regulatory frameworks and multilateral processes'. New weapon technologies are increasingly challenging the normative and operational conventions of warfare, as well as regulatory and verification measures.⁶¹ NPD research and education are under constant pressure to keep pace with developments. Adapting NPD education today will help to train next-generation professionals to be ready and able to adjust to multilateral processes and policy responses.

Utilizing the new normal

Conveying the complexity of NPD-related issues is a challenging task for educators. At the same time, wider interlinked issues and domains are more likely to appeal to a broad range of individuals with diverse interests and competences. Engaging younger generations does not just entail new challenges for NPD.⁶² Three observable trends and distinct characteristics of the next generation present opportunities for the NPD epistemic community to innovate and maintain a modern workforce with competences that are relevant for future challenges.

The most obvious characteristic of millennials and Generation Z is their attitude to technology: the prevalence of computers, smartphones and the internet; the focus on software over hardware; and the perception of artificial intelligence and automatization as features of the near future. These generations of 'digital natives' view software skills as beneficial if not essential to being prepared for future forms of work.⁶³ In the NPD field, tailored software programming has already improved ways of communicating and working. The growing availability of data means that knowledge about and tools for data collection and analysis will

⁶¹ UN (note 7), pp. 51–52.

⁶² Generation Z appears to have a high demand for instantaneously accessible information and immediate feedback and validation. The challenges for the US military are outlined in Reid, K. C., 'How the network generation is changing the millennial military', *War on the Rocks*, 20 Mar. 2018.

⁶³ Deloitte, 'The Deloitte Global Millennial Survey 2019', p. 13. The poll also outlines how millennials and Generation Z emphasize individual responsibility to self-educate and continue education.

also increase in importance, thus boosting the need for data scientists.⁶⁴ Open source analysis provides an example of how education can empower next generation individuals to exercise their competences and contribute to research and analysis by collecting and evaluating data, and developing the tools to do so.⁶⁵

A second characteristic is the high degree of linguistic diversity and intercultural competence. The normality of personal mobility fosters a willingness among students to relocate for studies or work. The Bologna Process, the ECTS and direct exchange programmes such as Erasmus, and an increasing number of joint degree programmes, make it easier for students to gain experience by studying abroad within Europe, which is expected to some extent.⁶⁶ Next-generation individuals can therefore be expected to be more exposed to other languages and cultures during their academic education. This increases the degree of related competences and also expands the potential target group for NPD education in a given state. Offering English language courses on-site or through online courses includes exchange students and trains local students. In addition to the competences acquired through personal mobility and self-development, the proportion of individuals from a migrant background continues to increase across Europe, because the next generation includes first-, second- and third-generation migrants.⁶⁷ As socio-economic inequalities often impede diversity in academic research and work, it is essential that NPD education engages with next-

generation individuals and brings benefits in diversity. Conflicts often exhibit cultural dimensions; linguistic, intercultural and multicultural skills contribute to the analysis of regional issues and of the increasing range of actors from across the globe.⁶⁸

A third characteristic of the next generation is the decrease in linear education and career paths. On the one hand, decreasing job linearity often correlates with short-term employment and a lack of continuous funding. On the other hand, the preference for 'conventional' long-term employment competes with a growing interest in working within the 'gig economy' and freelancing among millennials and Generation Z.⁶⁹ Changing education and career paths to suit individual interests and visions is more common than in previous generations. Collecting different competences, experiences and academic qualifications is likely to increase market competitiveness.⁷⁰ The portability of skills also applies to the field of NPD, as many issues related to WMD and converging technologies link different educational and professional domains. Permeability among the private and public sectors, industrial research and development, laboratory work, academic scholarship, policy consulting and policymaking can increase appeal to a wider audience of next-generation professionals, which increases the spectrum of competences and perspectives within the NPD epistemic community.

VI. CONCLUSIONS AND RECOMMENDATIONS

The location of international organizations on the continent and the existence of a local network of think tanks and university research institutes means that education on NPD issues is relatively accessible in Europe. Nonetheless, there is room for improvement

⁶⁴ Bidgood, S., 'Undergraduate disarmament and non-proliferation education: Gaps, opportunities, and new approaches', *Nonproliferation Review*, vol. 26, nos 3–4 (2019), pp. 329–40.

⁶⁵ The Arms Control Wonk community, based around scholars at the Middlebury Institute of International Studies at Monterey, is a diverse group of interested individuals that communicates via a Slack channel and collaborates on open source intelligence and the development of new tools to facilitate open source and imagery analysis, among other things.

⁶⁶ There are also numerous direct exchange and support programmes for studying abroad globally, as well as joint degree programmes in universities outside Europe. Nonetheless, the high degree of standardization and support within Europe stands out.

⁶⁷ The number of first- and second-generation immigrants increased by almost two fifths between 2008 and 2014, see Eurostat, 'First and second-generation immigrants: statistics on main characteristics', Sep. 2016. Unfortunately, the EU statistical office does not publish more detailed information on citizens with migrant backgrounds. The German statistical office published numbers in 2019, accordingly to which people with migrant backgrounds under the age of 35 made up 13% of the total population and 36% of the population under 35. Federal Statistical Office, 'Bevölkerung in Privathaushalten nach Migrationshintergrund und Altersgruppen' [Population of households by migrant background and age], Destatis, 21 Aug. 2019.

⁶⁸ Jenkins, B., 'Grand challenge: Bringing a diversity of perspectives into nonproliferation policy', Brookings Institution, 8 June 2018. How emerging creative and diverse voices in the North American NPD epistemic community are frequently ignored, to the long-term disadvantage of the field, is outlined by Korda, M., 'At #Nukefest, we asked all the wrong questions', Inkstickmedia, 19 Mar. 2019.

⁶⁹ Deloitte (note 63), pp. 14–15.

⁷⁰ Education is still predominantly perceived as an insurance policy against unemployment, although the percentage of university graduates in Europe that risk not finding a job is now quite high. See auf dem Brinke, Gnath and Ständer (note 55), p. 4. Generally, millennials tend to multitask and invest in higher education. They have outpaced previous generations in their range of education and work experience, especially in terms of the increased participation of women. Bialik, K. and Fry, R., 'Millennial life: How young adulthood today compares with prior generations', Pew Research Center, 14 Feb. 2019.

to strengthen NPD education and provide for a diverse, well-equipped, modern workforce. This section presents recommendations of how geographic accessibility across Europe, multidisciplinary, diversity and outreach can be improved. The paper concludes with ideas on how to move forward strategically as an epistemic community regarding NPD education.

Filling the gaps

Mapping educational activities within the network has identified gaps in geographical distribution, diversity of disciplines and issue coverage as well as representation of minority groups. The vast majority of network members are based in states that possess or are host to nuclear weapons. Most educational activities on NPD also take place in states that possess or host nuclear weapons. Figures 6 and 7 illustrate this pattern. While the network is continuously expanding, special attention must be paid to this geographic imbalance. Network members could identify potential new members and reach out to partner institutions within the remaining European states. In addition, network members could contribute to online NPD education by uploading recorded webinars, teaching and reading material, which would provide for remote-learning opportunities, accessible from any geographic location. The EUNPDC e-learning platform presents a readily available and easily accessible tool for network members and beyond. This provides multimedia education for students, interns, research fellows, as well as professionals and officials who are new to the NPD field.

Much of the NPD education within the network is focused on nuclear weapons and related issues of nuclear arms control. While the number of interdisciplinary research departments is gradually increasing, university education is often bound to a certain discipline. To the extent possible, university research institutes could cooperate with other departments, invite guest lecturers from other faculties and allow students from other fields of study to participate. Some think tanks within the network employ researchers with different academic backgrounds. By actively mentoring and networking their interns, student employees or early-career fellows, and by making some events accessible to newcomer audiences and contributing guest lectures to local university education, these think tanks could

reach a wider audience. Increasing the number of interdisciplinary, natural science and technical science departments will help to cover all the issues within the wide spectrum of NPD. The EUNPDC could consider reaching out to relevant networks such as the European Nuclear Education Network or the International Genetically Engineered Machine Foundation, and engaging with stakeholders in research and development in the private and public sectors, not least by inviting them to network events.⁷¹

Diversification is a continuing and long-term endeavour. Raising awareness and sustaining implementation take effort. Definitions of ‘who needs to be included’ also evolve. Diversity within the NPD community is a values-based matter of equity and also a benefit-oriented matter, as a multitude of competences and perspectives are more likely to entail a multitude of ideas for analysis and problem solving. While awareness of the need for gender balance exists, network members need to pay closer attention to the composition of their workforce and of their target groups. Active outreach and mentoring help to improve the recruitment and retention of women, which is particularly necessary in technical fields due to their under-representation. Improving the visibility of young, female and diverse faces and voices is essential to portray modernity, and also key to attracting diverse next-generation individuals, given the importance of role models and relatable examples. While a mentoring programme is in development, the EUNPDC could consider engaging other networks and organizations that have explicit diversification missions. Women in International Security maintains sections in 14 European states (Austria, Belgium, Estonia, Finland, France, Germany, Greece, Italy, Malta, the Netherlands, Poland, Romania, Spain and the UK), Women of Color Advancing Peace, Security and Conflict Transformation has established an office in the UK.⁷²

Improving online outreach

Since its inception, maintaining a website has been one of the key tasks of the EUNPDC. Active and continuous

⁷¹ For more information, see the European Nuclear Education Network, ‘Enen Website’, n.d.; or the International Genetically Engineered Machine Foundation, ‘Main Page’, n.d.

⁷² For more information, see Women in International Security, ‘International Affiliates’, n.d. or Women of Color Advancing Peace & Security, ‘WCAPS in the United Kingdom’, n.d.

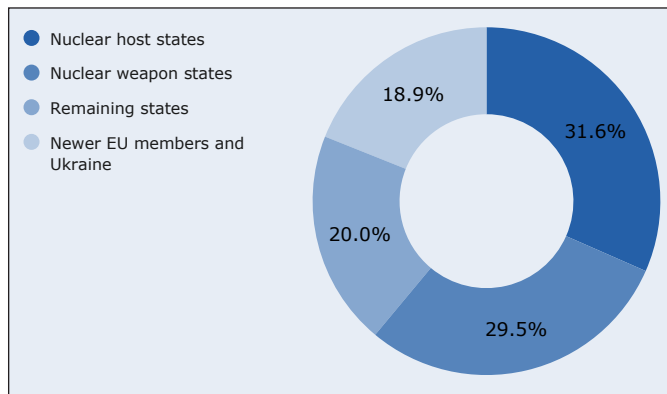


Figure 6. Summarized location of network members

EU = European Union

Source: Author's compilation

Note: For categorization of states see table A1 in Annex I, accessible at, EUNPDC, 'Non-Proliferation and Disarmament Papers', n.d.

management of online information about the network is crucial. Information is provided on the network website, and also on Twitter, YouTube and LinkedIn. Instead of considering additional social media outlets, the EUNPDC could strategically utilize its existing social media accounts.⁷³ While Twitter functions as an online marketplace for brief information and debate, YouTube is a channel for disseminating knowledge to a wider audience. The EUNPDC e-learning tool could serve as a source for images and audio material. LinkedIn provides networking opportunities, especially when used to create a group or platform for exchanges among peers and senior experts.

In the current digital era of fast-moving and vast information, good content in an appealing format is a requirement. Featuring personalities and employing infographics increase the appeal and competitiveness of posts. Moreover, cross-referencing with organizations such as the CTBTO, IAEA, OPCW, UNIDIR and UNODA would improve the network's visibility, and its inter-organizational communication and collaboration.

⁷³ Millennials and members of Generation Z are aware of the vast amount of disinformation on and the other shortcomings of social media. In fact, they exhibit significant levels of lack of faith in social media outlets and news organizations. Nonetheless, social media and other online sources of information are crucial for young people, see Deloitte (note 63), p. 8.

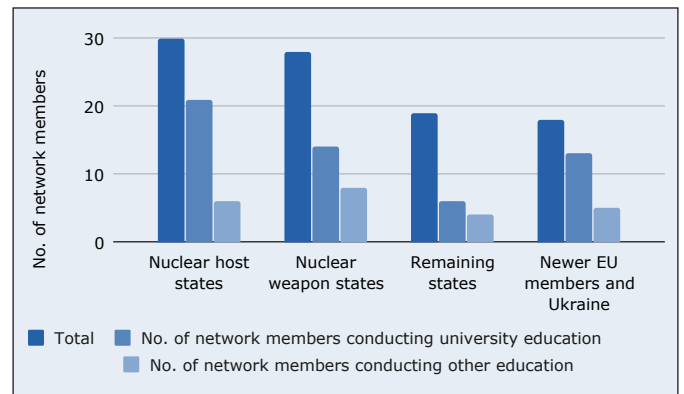


Figure 7. Distribution of educational activities across the network

EU = European Union

Source: Author's compilation.

Note: For categorization of states see table A1 in Annex I, accessible at, EUNPDC, 'Non-Proliferation and Disarmament Papers', n.d.

Strategic foresight

In addition to increasing the number of network members and fostering cooperation with other organizations, regular communication *within* the network among its members is key. On 23 and 24 June 2020 the EUNPDC organized a first meeting of its university-affiliated network members to discuss the state of NPD education. This online meeting provided an excellent opportunity for network members to share best and worst practices on remote teaching during the COVID-19 pandemic. It helped to identify common challenges and lessons learned, and resulted in a joint brainstorming of ideas for the future. Such internal network exchanges could be institutionalized to facilitate the pooling of ideas and resources, which would help mitigate challenges and foster a sense of epistemic community.

One point raised during the discussions and a finding of the above mapping endeavour is the lack of knowledge about the target groups for NPD-related education. There is too little systematic information about millennials and Generation Z across Europe, particularly on attitudes, expectations and levels of knowledge about NPD, IR and security.⁷⁴ Europe is a small but diverse continent, consisting of states with

⁷⁴ Kwong outlines that it is essential to assess the opinions and also the level of knowledge on nuclear weapons among the general public, see Kwong, J., 'A case for understanding public nuclear knowledge', Next Generation Nuclear Network, 5 June 2020.

distinct histories, identity constructs, and social and demographic compositions. The continual change in IR, the increasing number of relevant state and non-state actors, and the evolution and convergence of technologies affect NPD research and policymaking, and also the context in which next generation individuals enter education and professional fields. Ideally, regular systematic polling in each European state would paint a clearer picture of current realities and observable trends. The EUNPDC could consider conducting some polling across the network, or delegating interns or fellows to conduct surveys among next-generation individuals in different European states or regions.

Understanding education as recruitment or mere conservation limits the potential of what students could contribute to education and research. Understanding NPD education instead as recruitment for innovation, empowering students to reflect on acquired knowledge, to develop critical thinking and to apply analytical skills and new ideas makes it much more valuable to the student, the educator and the field as a whole. Next-generation individuals are likely to exhibit characteristics such as tech-savviness, linguistic and cultural skills and an interest in job permeability that provide benefits for a competent, modern workforce. Education therefore represents a long-term endeavour that requires adaptability and constant attention to changing circumstances, from technological developments to demographic trends and the parameters of diversity. These requirements are challenging, but help in turn to innovate the field and ensure the NPD community is better equipped for the future.



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A EUROPEAN NETWORK

In July 2010 the Council of the European Union decided to support the creation of a network bringing together foreign policy institutions and research centers from across the EU to encourage political and security-related dialogue and the long-term discussion of measures to combat the proliferation of weapons of mass destruction (WMD) and their delivery systems. The Council of the European Union entrusted the technical implementation of this Decision to the EU Non-Proliferation Consortium. In 2018, in line with the recommendations formulated by the European Parliament the names and the mandate of the network and the Consortium have been adjusted to include the word 'disarmament'.

STRUCTURE

The EU Non-Proliferation and Disarmament Consortium is managed jointly by six institutes: La Fondation pour la recherche stratégique (FRS), the Peace Research Institute Frankfurt (HSFK/ PRIF), the International Affairs Institute in Rome (IAI), the International Institute for Strategic Studies (IISS), the Stockholm International Peace Research Institute (SIPRI) and the Vienna Center for Disarmament and Non-Proliferation (VCDNP). The Consortium, originally comprised of four institutes, began its work in January 2011 and forms the core of a wider network of European non-proliferation and disarmament think tanks and research centers which are closely associated with the activities of the Consortium.

MISSION

The main aim of the network of independent non-proliferation and disarmament think tanks is to encourage discussion of measures to combat the proliferation of weapons of mass destruction and their delivery systems within civil society, particularly among experts, researchers and academics in the EU and third countries. The scope of activities shall also cover issues related to conventional weapons, including small arms and light weapons (SALW).

www.nonproliferation.eu

EU Non-Proliferation and Disarmament Consortium

Promoting the European network of independent non-proliferation and disarmament think tanks

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