The TPNW in Practice: Elements for Effective National Implementation

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ABSTRACT

In the past, states have underestimated the effort required to implement WMD-related treaties. Yet effective national implementation is a prerequisite to upholding agreements and building confidence in compliance with these treaty regimes. Drawing on experience from other arms control and disarmament agreements, this article lays out the most relevant measures for national implementation of the Treaty on the Prohibition of Nuclear Weapons (TPNW) resulting from Article 5 (national implementation). It also examines other obligations in the TPNW through the lens of national implementation, including initial declarations Articles 2 (declarations), 6 (victim assistance and environmental remediation) and 7 (international cooperation and assistance). The paper focuses on what key elements that TPNW States Parties should address when transposing the international agreement to the national level: standardization; capacity and resources; and international assistance. In doing so, it aims to assist national and international actors in their implementation efforts.

Introduction

Compliance with WMD-related treaties, such as the 1968 Nuclear Non-Proliferation Treaty (NPT), the 1972 Biological and Toxin Weapons Convention (BWC), and the 1993 Chemical Weapons Convention (CWC), requires more than a simple decision to sign a treaty. It entails a process of national implementation to transpose international agreements onto the national level. This process is essential to upholding those agreements, as it can build domestic institutions that bolster and facilitate confidence in compliance among States Parties. National implementation of international treaties is neither a simple nor glamourous process. It takes time and resources (Tabassi 2009, 29–57) and requires domestic coordination and leadership. As such, it can prove a burden upon States Parties and, in other WMD-related agreements, these challenges have resulted in the deficient implementation of WMD treaties (Trapp 2019, 13).

This article provides an outline of the practical steps that are required and/or recommended to implement the Treaty on the Prohibition of Nuclear Weapons (TPNW), drawing from wider experiences with other arms control and disarmament related...
treaties. In doing so, the article highlights three themes that States Parties will need to consider in the implementation of this treaty: first, there is no-one-size-fits-all approach to national implementation; second, national implementation requires adequate resourcing, capacity and leadership at the national level; third, international cooperation, coordination and assistance in national implementation can help mitigate the challenges discussed herein.

Following this introduction, Section II considers the context for national implementation, in the process identifying the assumptions that inform this paper – including the type of States likely to have joined the Treaty when it enters into force. The article then discusses national implementation in relation to selected articles of the TPNW. This coverage of articles is not comprehensive, and notably some articles, including Article 12 which deals with universalisation (and is covered elsewhere in this Special Issue), will also require national implementation. Section III begins with a discussion of obligations under Article 5 of the TPNW, which addresses national implementation. It considers relevant measures to fulfil its obligations, who is responsible for different aspects of national implementation, and how States can make progress in these areas. Subsequently, Section III examines other obligations in the TPNW through the lens of national implementation, including initial declarations (Article 2), safeguards (Article 3), victim assistance and environmental remediation (Article 6), and international cooperation and assistance (Article 7).

Following this analysis, the paper discusses three key challenges faced by TPNW States Parties in the national implementation of the TPNW: lack of standardisation; the importance of capacity and resources; and the role of international assistance. In its conclusion, the paper offers suggestions to mitigate and overcome these challenges.

Context

National implementation of the TPNW can be complicated by the text of the Treaty, which has been characterized – and criticized – as vague or ambiguous in parts. There are several plausible and interrelated explanations why this is the case. In general, multilateral treaty drafting is an imperfect science – further complicated by translation processes (Kuner 1991; Shelton 1997). The TPNW appears as no exception, as the involvement of 130 States (and the UN Office of Legal Affairs) resulted in a massive and messy collective drafting exercise, one which unfolded over mere weeks. Ambiguity in the text might have been intentional as to keep the Treaty simple and brief as to ensure its passage. The lack of detailed provisions – in particular in Article 4 on nuclear weapons elimination – could also be linked to the absence of the nuclear-armed States in the negotiations. Furthermore, drafters deferred decisions regarding certain provisions to the first Meeting of States Parties (explored elsewhere in this special issue) or to the “competent international authority or authorities”. All of this contributes to a measure of flexibility in national implementation.

Nuclear Statuses and Corresponding Obligations

In Article 1, the TPNW establishes the set of prohibitions that apply equally across its States Parties. Notably, subsequent articles account for the possibility that acceding States will carry with them different nuclear statuses and histories. The Treaty then outlines
obligations linked to those statuses – impacting on the precise nature of implementation across States Parties. This is evident with the declarations obligations in Article 2, which essentially distinguishes between four groups of States:

(1) former nuclear-armed States (para. a)  
(2) nuclear-armed States (para. b)  
(3) non-nuclear weapon States belonging to nuclear-sharing arrangements (para. c), and  
(4) non-nuclear weapon States uninvolved in such arrangements.

To date, the States that have ratified the TPNW constitute a homogenous group of non-nuclear armed States uninvolved in nuclear sharing. Still the entry into force of the Treaty, and continued growth in its membership, leaves open the possibility they may be joined by those of other statuses. As the Treaty impresses specific obligations upon those other types of States, attending to differing nuclear statuses is especially pertinent from the perspective of national implementation. Processes of national implementation, and potential dialogues on verification and compliance, will likely take on a cooperative form. It is difficult to envision States Parties that join the treaty but fail to act in good faith. There may be worst-case scenarios, for instance States that seek to undermine the symbolic and normative value of the TPNW, but broadly speaking it can be assumed that the corresponding obligations are unlikely to be prohibitive in terms of national implementation, regardless of the type of States Party involved.

**Supporting Institutions**

The obligations listed for the four *de facto* types of prospective States Parties take on additional significance because the text is light in its designation of institutions that can play a role in supporting national implementation. There is the specification only of the eventual designation of a “competent international authority or authorities” for the purpose of negotiating and verifying the elimination of nuclear weapons programmes, and the presumed same authority to receive submission of the “legally binding, time-bound plan” of that elimination by States. In Articles 3 and 4, the TPNW identifies a role for the International Atomic Energy Agency (IAEA), with States Parties to maintain in force safeguards or conclude a comprehensive safeguards agreement within 180 days of the TPNW’s entry into force. The text also designates the Secretary-General of the United Nations as the depository of the Treaty, to receive submission of State declarations, and convene meetings of States Parties, review conferences, and – absent the designation of the competent international authority – extraordinary meetings.

These mentions aside, there is a relative scarcity of institutional support outlined in the TPNW. This is not determinative: the BWC did not establish a modest Implementation Support Unit (ISU) until its Sixth Review Conference, and – while lacking a Standing Secretariat – the NPT review process expanded significantly in its 1995 Review and Extension Conference. Yet it may be indicative. The mandates, resources, and nature of supporting institutions vary considerably for these and other treaties prohibiting WMD. Notably, the TPNW did not follow the path of the CWC, which has an article (Article 8) devoted to the establishment and operation of the Organisation for the Prohibition of
Chemical Weapons (OPCW) Unless the TPNW’s first Meeting of States Parties revisits this issue, States will assume the burden of responsibility in fulfilling their domestic obligations. Ultimately, even if States decide to fund an implementation body, its role in national implementation is likely to be limited given issues of State sovereignty and resources.

**National Implementation**

The issue of how precisely States Parties execute their TPNW obligations at the national level is the explicit subject of Article 5. Yet the nature of obligations outlined elsewhere in the Treaty invites further scrutiny as to what form their implementation might take as well. This section explores all issues around national implementation, beginning with Article 5 before proceeding to relevant provisions under other articles. The analysis that follows focuses on the issues most pertinent to the group of non-nuclear armed States that will have to implement the TPNW in the short and medium term. At times, it also considers issues pertinent to States that are or have been part of nuclear-sharing arrangements.

**Article 5**

Article 5 of the Treaty on the Prohibition of Nuclear Weapons states:

(1) *Each State Party shall adopt the necessary measures to implement its obligations under this Treaty.*

(2) *Each State Party shall take all appropriate legal, administrative and other measures, including the imposition of penal sanctions, to prevent and suppress any activity prohibited to a State Party under this Treaty undertaken by persons or on territory under its jurisdiction or control.*

Beyond the reference to penal sanctions, the Treaty provides no elaboration on exactly what specific measures are “necessary”. Such ambiguity in WMD-related treaty language is not uncommon, the term allows a degree of proportionality in and contextualisation of the measures undertaken within a sovereign state. However, ambiguity in national implementation obligations can also generate problems. In the past, States Parties to other WMD treaties have developed competing interpretations around obligations related to national implementation. In turn, this has manifest in an uneven patchwork of national implementation measures and generated weak points in WMD prohibitions. There is also evidence that States Parties to other agreements have considerably underestimated the amount of effort required to fulfil their national implementation obligations (Trapp 2019, 13). In some cases, this has resulted in the deficient implementation of WMD treaties.

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1The OPCW Technical Secretariat is comprised of 500 staff members from over 80 States, the BWC ISU has three staff members, the NPT has no Secretariat.

2For example, the article 4 of the BWC obliges states parties to “take any necessary measures to prohibit and prevent” biological weapons on their territory.
To avoid uneven or deficient national implementation of the TPNW, States Parties could benefit from building a shared understanding around what is required of States Parties to implement Article 5. It will also be important for states to consider who is responsible for national implementation and how this will be achieved.

**What . . .**

In terms of what is required, paragraph obligates States Parties to implement national measures to address all obligations under the treaty. Paragraph two identifies specific areas for attention and explicitly obligates States Parties to take legal measures to prevent activities prohibited under the Treaty. As such, States have an obligation to criminalise several activities laid out in articles of the Treaty, including the development, testing, production, manufacture, use or transfer of nuclear weapons or other nuclear explosive devices; as well as adopting the necessary measures related to the provision of victim assistance, something discussed further below.

Over the course of the negotiations some States raised other additional activities, such as transit and financing, but were unsuccessful in including those among the Treaty’s prohibitions. Nonetheless, in the process of national implementation, some States may choose to go beyond the Treaty text and explicitly prohibit these additional actions too (Ritchie et al. 2017). However, if they do explore these additional measures, it will be important to ensure that such efforts do not distract attention or divert resources from the explicit obligations under the TPNW.

Legal measures to outlaw activities prohibited under the TPNW have advanced over the last two decades through the implementation of the NPT as well as other measures, including non-binding IAEA legal instruments, such as the 1980 Convention on the Physical Protection of Nuclear Material (CPPNM) and wider legal measures such as UNSC Resolution 1540 (World Future Council Disarmament Working Group 2011). The NPT does not include explicit obligations related to national implementation. However, Article 3 of the Treaty requires that non-nuclear weapon states accept safeguards negotiated with the IAEA, “which has promulgated non-binding guidelines for national measures to protect nuclear materials and equipment from security breaches” (IAEA 2011).

Paragraph 2 of UNSC Resolution 1540 obligates States to take measures to prohibit non-state actors from manufacturing, acquiring, possessing, developing, transporting, transferring or using WMD. A 2016 report from the 1540 Committee identifies a “commendable absolute increase” in the implementation of aspects of paragraph 2, adding that “151 States have a legal framework in place to prohibit the use of nuclear weapons by non-State actors, as compared with 105 in 2011” (UNSC Resolution 1540 Committee 2016, 15).

This suggests that in many cases, States will not have to start entirely from scratch with national implementation of the TPNW. Nonetheless, it will be important to ensure that States effectively criminalise activities prohibited under the Treaty at the national level (Tabassi 2009). Moreover, under the TPNW such criminalisation applies not just to non-state actors – as required under UNSC Resolution 1540 – but all natural or legal persons within the territory of a State, including government employees (King 2006, 109–110).
This extension of coverage to all individuals is significant as it limits any recourse to a defence of “superior orders” (i.e. the defence that one is following orders).

It will also be important to ensure that States can enforce the legal measures developed to implement the TPNW. As Figure 1 above illustrates, enforcement measures, which require determining suitable penal penalties and building law enforcement capacity to, amongst other things, detect, investigate and prosecute crimes, often lag behind legal measures. Yet enforcement remains important and requires additional effort, time and resources (Ogilvie-White 2008; Persbo and Woodward 2005).

Beyond legal measures, the TPNW further obligates States Parties to take “other measures . . . to prevent and suppress any activity prohibited to a State Party under this Treaty”. The specific nature of “other measures” are likely to vary on the context. Other WMD-related treaties provide insights into possible measures to consider in support of national implementation (see Figure 2 below). For example, States Parties to the BWC have recognised the value of biosecurity and biosafety, awareness raising, education and codes of conduct in discussions around national implementation and several States have undertaken activities in these areas (National Academies of Sciences, Engineering, and Medicine 2018, 17–19). In the CWC, the OPCW identified several tools for consideration as part of a National Implementation Framework, including “chemical safety and security . . . securing and accounting for the trade in scheduled chemicals, and education and outreach” (OPCW 2020). In the nuclear regime, the IAEA has held workshops, established operations manuals developed guidance around several other measures

| Obligation          | Legal Measures | Enforcement | TPNW art |
|---------------------|----------------|-------------|----------|
| Manufacture/produce | 146            | 117         | 1.1 (a)  |
| Acquire             | 142            | 109         | 1.1 (a)  |
| Possess             | 135            | 122         | 1.1 (a)  |
| Stockpile/store     | 107            | 85          | 1.1 (a)  |
| Develop             | 82             | 63          | 1.1 (a)  |
| Transport           | 110            | 104         | -        |
| Transfer            | 125            | 117         | 1.1 (b, c)|
| Use                 | 151            | 139         | 1.1 (d)  |
| Means of delivery   | 41             | 37          | -        |
| Accomplice          | 145            | 139         | -        |
| Assist              | 148            | 139         | 1.1 (e, f)|
| Financing           | 158            | 155         | -        |

Figure 1. Number of States with measures in place as of 2016 for nuclear-related obligations under paragraph 2 of resolution 1540 (2004). Source for data on legal measures and enforcement: UNSC Resolution 1540 Committee (2016, 14).
intended to build capacity for nuclear security that could constitute “other measures” (IAEA 2020a).

States and stakeholders have already explored many of these types of activities in relation to nuclear weapons. Yet as with legislation, states will still need to tailor certain “other” measures to the terms of the TPNW – as opposed to other earlier nuclear agreements or measures such as UNSC Resolution 1540 – as well as to the national context. Context matters and it is unlikely States Parties to the TPNW will be able to agree on a one-size-fits-all approach to the national implementation of “other measures”, particularly given the different nuclear statuses and histories of current and prospective States Parties discussed above.

Additionally, it will be important to ensure that the relevant Stakeholders at the national level “buy-in” to the proposed measures. This step can entail entering a dialogue with stakeholders to co-produce measures that do not unduly impinge upon legitimate peaceful research (National Academies of Sciences, Engineering, and Medicine 2018, 17–19). In turn, this requires some form of national entity to channel and coordinate national implementation.

**Who . . .**

As noted above, Article 4 of the TPNW obligates States Parties to “designate a competent international authority or authorities”. However, negotiators made no provision for national authorities nor any form of national focal point. Yet some form of competent governmental entity will be important. WMD treaties depend on a division of labour.
between national and international actors (Revill et al. 2019). When national bodies can establish national compliance monitoring systems and mobilise domestic actors in support of the Treaty, then building confidence in compliance at the international level becomes much easier (Robinson 1996).

A national entity will be important both for the coordination of all relevant stakeholders at the national level for the purposes of implementing Article 5, as well as the collection of relevant data and cross-governmental coordination around the implementation of other articles of the TPNW (as discussed further below and elsewhere in this special issue). One preliminary step forward in this regard could be to draw from the BWC, where States Parties at the 2006 Sixth Review Conference decided to encourage “States Parties to designate a national focal point for coordinating national implementation of the Convention and communicating with other States Parties and relevant international organizations” (BWC 2006, 11). Alternatively, States Parties might consider the appointment of designated National Liaison Officers (NLOs) as applied in the context of the IAEA, or agree to designate or establish some form of National Authority, as stipulated in Article 7 of the CWC.

How . . .

The process of national implementation will vary in accordance with a country’s political system, legal tradition and availability of resources. For example, States with a common law tradition will need to enact legislation to transpose an international legal agreement into national law. In States with a civil law system, theoretically international legal measures are automatically transposed onto the domestic context upon approval by parliament or equivalent entities. However, even with civil law states this doesn’t “obviate the need for implementing legislation to give effect to obligations”; supplementary legislation will likely be required along with penal penalties and capacity building for enforcement (Dunworth, Mathews, and McCormack 2006).

Moreover, the text of the TPNW expects States Parties “to prevent and suppress any activity prohibited”. As Germany noted of similar language in other treaties this is “not simply an obligation of conduct but amounts to an obligation of result” (Germany 2003, 1). If taken seriously, this requires a process of identifying existing gaps in legislation, addressing such gaps taking into account the views of different domestic stakeholders and the wider expectations of other States Parties; promulgating measures at the domestic level and putting in place provision to enforce the legislative and other measures and “investigate, prosecute and punish any offences” (Spence 2011). Much like positive obligations, effective, enforceable prohibitions necessitate a degree of planning and resources.

At the international level, a review of approaches to strengthening national implementation applied in other WMD treaties provide some useful insights for consideration by TPNW States Parties. To this end, Figure 3 below outlines five increasingly ambitious approaches to facilitating progress in national implementation. These can also be considered as models for how States may want to approach their other obligations as delineated in the text.
| Approach                        | Means                                                                 | Intended Result                                                                 | Example                        |
|---------------------------------|----------------------------------------------------------------------|---------------------------------------------------------------------------------|--------------------------------|
| States submission of information| States Parties submit and circulate information on national measures (i.e. penalties and capacity building measures) | Early consideration of issues, leading to better-informed discussion            | OPCW Legislation Compendium     |
| National Implementation Workshop| Representatives of States Parties meet to discuss implementation and enforcement issues | Enhanced common understanding of relevant articles                              | IAEA Safety and Security Workshops |
| Model Implementing Legislation  | Development and circulation of model implementation laws (and penal provisions) | Example of legislation for States Parties to adapt and develop to the national context | Biological and Toxin Weapons Crimes Act |
| Peer review process             | Systematic review undertaken by national legal experts of each other’s national legislation | Systematic identification of good practices and gaps                            | BWC Peer Review mechanism       |
| Framework process               | Analysis of needs (based on national context, stakeholders, gaps and priorities) and development of national action plans | Systematic approach for implementation and facilitation of provision of assistance | OPCW framework process          |

Figure 3. Pathways to national implementation under Article 5 of the TPNW.

**Article 2: Declarations**

Article 2 of the Treaty on the Prohibition of Nuclear Weapons states:

1. Each State Party shall submit to the Secretary-General of the United Nations, not later than 30 days after this Treaty enters into force for that State Party, a declaration in which it shall:

   (a) Declare whether it owned, possessed or controlled nuclear weapons or nuclear explosive devices and eliminated its nuclear-weapon programme, including the elimination or irreversible conversion of all nuclear-weapons-related facilities, prior to the entry into force of this Treaty for that State Party;

   (b) Notwithstanding Article 1 (a), declare whether it owns, possesses or controls any nuclear weapons or other nuclear explosive devices;

   (c) Notwithstanding Article 1 (g), declare whether there are any nuclear weapons or other nuclear explosive devices in its territory or in any place under its jurisdiction or control that are owned, possessed or controlled by another State.

2. The Secretary-General of the United Nations shall transmit all such declarations received to the States Parties.

The TPNW establishes an obligation for States Parties to submit to the UN Secretary-General an initial declaration not later than 30 days after the Treaty enters into force; with all declarations to be transmitted to States Parties. The substance of the declaration encompasses confirmation of, where relevant, past (or present) ownership, possession, or control of nuclear weapons and nuclear explosive devices, of the eliminated status of its programme (including elimination or irreversible conversion of related facilities), and presence of another State’s nuclear weapons or explosive devices in its territory or any place under its jurisdiction or control. As suggested, the declaration allows the State to be
designated as a particular type of State under the Treaty and is of relevance in the context of determining ensuing obligations under Article 4.

Interlinked obligations notwithstanding, in operationalizing the Article 2 obligation States Parties will have to consider the content and format of initial declarations, modalities in submission, as well as consultation, verification, and dispute resolution mechanisms. The declarations outlined only have to refer to “whether” States Parties engaged in the listed activities of interest, and “whether” there exist weapons or explosive devices on its territory. Certainly, in the future there may be discussion about what constitutes whether a State has eliminated a nuclear weapons programme, including through the “elimination or irreversible conversion of all nuclear-weapons-related facilities.” But the declaration does not require States to provide detailed information or evidence to that effect.

In the short and medium term then, the more complex TPNW cases might involve States that were previously part of nuclear-sharing arrangements that become party to the Treaty. Experience across WMD regimes suggest that the initial declaration itself can present a challenge. For instance, the CWC contains a similar obligation in its Article 3, and almost a third of initial declarations remained outstanding two years after entry into force of the Convention as a result of delays in national preparations, lack of awareness of obligations, and inadequate technical capacity or legal frameworks (Trapp 2019). However, CWC initial declarations require States to specify the “precise location, aggregate quantity and detailed inventory” of chemical weapons (including old and abandoned chemical weapons), provide “all available information” around production facilities including their scope of activities, and provide “a general plan for destruction” including specific “actions to be taken for closure” of those facilities (CWC 1993). While TPNW States Parties may face obstacles in their initial declarations, there is no comparable level of detail required.

For TPNW States formerly part of nuclear-sharing arrangements, decisions to declare past activities (or weapons that were stationed in their territory) have to account for various sensitivities: in particular proliferation-related, security, and political. A repeat of the Libyan case – where the IAEA, moving to verify the country’s declarations in February 2004, highlighted the involvement of an unspecified nuclear weapon State in the processing of Libyan uranium ore concentrate – would not only draw unwanted political attention but could undermine efforts by TPNW States Parties to expand their membership (IAEA GOV/2004/12, 20 February 2004). Initial declarations – and surrounding procedures – can have wide-ranging impact, including for non-States Parties. It is perhaps for these reasons that drafters preferred to retain a degree of flexibility across these procedures. The brevity and language of Article 2 allows the possibility for relative leniency in the implementation of initial declarations.

**Article 3: Safeguards**

Article 3 of the Treaty on the Prohibition of Nuclear Weapons states:

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3Even in a cooperative framework, this can take time. Lentzos and Hamilton (2010) estimated that BWC Confidence Building Measures – which include exchange of information and declarations of activities and facilities – take “approximately four months to complete”...
(1) Each State Party to which Article 4, paragraph 1 or 2, does not apply shall, at a minimum, maintain its International Atomic Energy Agency safeguards obligations in force at the time of entry into force of this Treaty, without prejudice to any additional relevant instruments that it may adopt in the future.

(2) Each State Party to which Article 4, paragraph 1 or 2, does not apply that has not yet done so shall conclude with the International Atomic Energy Agency and bring into force a comprehensive safeguards agreement (INFCIRC/153 (Corrected)). Negotiation of such agreement shall commence within 180 days from the entry into force of this Treaty for that State Party. The agreement shall enter into force no later than 18 months from the entry into force of this Treaty for that State Party. Each State Party shall thereafter maintain such obligations, without prejudice to any additional relevant instruments that it may adopt in the future.

For non-nuclear weapon States Parties, Article 3 sets forth obligations to “at a minimum” maintain existing IAEA safeguards obligations, and to conclude a comprehensive safeguards agreement with the Agency within 180 days (with the agreement to come into force within 18 months). Notably, the latter overlaps with obligations outlined in Article III of the NPT, as well as in regional nuclear-weapon-free zone treaties. There already exist 175 comprehensive safeguards agreements concluded by States with the IAEA, leaving only the nuclear-armed States (bound by voluntary offer safeguards agreements and item-specific agreements) and a small handful of outstanding non-nuclear weapon States. Implementation challenges with Article 3 consequently seem more likely to coalesce on how TPNW States Parties maintain existing obligations – in other words, the steps they will take in order to comply with and enforce the terms of safeguard agreements already reached (including the voluntary Additional Protocol). Such compliance and enforcement issues are explored in detail by Mukhatzanova and Rockwood elsewhere in this special issue.

**Article 6: Victim Assistance and Environmental Remediation**

Article 6 of the Treaty on the Prohibition of Nuclear Weapons states:

(1) Each State Party shall, with respect to individuals under its jurisdiction who are affected by the use or testing of nuclear weapons, in accordance with applicable international humanitarian and human rights law, adequately provide age- and gender-sensitive assistance, without discrimination, including medical care, rehabilitation and psychological support, as well as provide for their social and economic inclusion.

(2) Each State Party, with respect to areas under its jurisdiction or control contaminated as a result of activities related to the testing or use of nuclear weapons or other nuclear explosive devices, shall take necessary and appropriate measures towards the environmental remediation of areas so contaminated.

(3) The obligations under paragraphs 1 and 2 above shall be without prejudice to the duties and obligations of any other States under international law or bilateral agreements.
Building on the humanitarian approach to arms control, expressed in the 1997 Anti-Personnel Mine Ban Convention (APMBC) and the 2008 Convention on Cluster Munitions (CCM) processes, Article 6 (1) establishes obligations for States Parties with respect to individuals under its jurisdiction who are affected by the weapons banned by the Treaty. In the second clause of Article 6 on environmental remediation it is also possible to see similarities between with the APMBC and CCM, which include clearance of landmines and cluster munitions, respectively.

It may be the case that there are already national or international programmes in place to deal with the humanitarian and environmental consequences of nuclear explosions or nuclear weapons accidents. That is why the third and final clause of Article 6 states that these obligations shall apply without prejudice to the duties and obligations of any other States under international law or bilateral agreements.

A precedent for environmental obligations in nuclear treaties can be found in the Treaty on a Nuclear-Weapon-Free Zone in Central Asia (2009). Known as the Treaty of Semipalatinsk, the agreement includes a clause on “environmental security” (Article 6), requiring States Parties to “assist with efforts toward the environmental rehabilitation of territories contaminated” as a result of past nuclear activities. Therefore, States Parties to the Treaty of Semipalatinsk may already have in place national measures that partly implement Article 6(2) of the TPNW, but not necessarily address such clause in its entirety. A comparison between the two agreements shows that the TPNW goes a step further than the Semipalatinsk Treaty, covering not only damage caused by past activities but also environmental contamination attributable to use and testing after the Treaty’s entry into force. Thus, reviews and amendments in national measures may be needed even on the part of countries who are part of Central Asia’s NWFZ.

Seen as a whole, Article 6 of the TPNW denotes a novel approach to nuclear disarmament, one that goes beyond acknowledging the harmful consequences of nuclear war and actually translates human rights and environmental concerns into legal obligations. The emerging literature analyzing the TPNW negotiations has underlined the legal precedents of the APMBC and the CCM as a determining factor for these so-called “positive obligations” of the TPNW (Bolton and Minor 2020). Another aspect that shaped TPNW’s humanitarian approach is the fact that survivors from Hiroshima and Nagasaki nuclear bombings were part of the nuclear weapons ban campaign that preceded the Treaty, together with civil society activists and experts who had also mobilized to ban landmines and cluster munitions (Docherty 2018).

If the inclusion of legal provisions dealing with humanitarian concerns can be seen as a learning process in arms control and disarmament treaties, it is not a linear one. Unlike its precedent – the CCM – the TPNW does not offer a clear definition of the category of victim, a contentious issue in affected States. The TPNW also does not provide basic

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4International and bilateral agreements in these areas exist, for instance US-sponsored environmental remediation in the Marshall Islands and previous UK clean up on Kirimitati Islands, Kiribati (Bolton 2017).

5Parameters for determining and compensating victims of nuclear explosions, tests or accidents has varied throughout time and across countries. At times, compensation for illnesses attributed to ionizing radiation was based on estimated doses and standard risk coefficients calculated in relation to a given individual being present in specified areas where nuclear damage had occurred. At other times, compensation was tied to the development of one of the types of cancers or other diseases specified in a given compensation scheme. Despite these variations, in all circumstances, legal, medical and political arguments were mobilized in the processes shaping the definition of nuclear victim and the corresponding eligibility for benefits. For different examples of victim compensation programmes and eligibility criteria, see Purvis-Roberts and Werner (2006); Van Dyke (2006).
steps to operationalize victim-assistance and environmental remediation, contrasting with the roadmaps for initial administrative and institutional arrangements laid out in the CCM\textsuperscript{6}

The absence of detailed parameters in the TPNW may be explained by particular characteristics of the negotiation process. As discussed in Section II, there was a widespread view among negotiators in favour of a timely adoption of the Treaty, even if it meant keeping it simple and brief (Bolton and Minor 2020). In opting for concise provisions on victim-assistance and environmental remediation, the negotiators deferred the discussion on a roadmap for implementation to a later stage, most likely after the Treaty’s entry into force.

As a first step towards national implementation of Article 6, States Parties could carry out a needs assessment, to understand the extent of nuclear harm caused to individuals and the environment under their respective jurisdictions (Bolton 2017). In principle, a needs assessment would be relevant for four main categories of countries. The first would comprise States that have suffered a nuclear attack. So far, Japan is the only country to have experienced nuclear bombing. The second category would include States that may have conducted nuclear tests and/or experienced accidents related to a nuclear weapons-programme. As such, this category would encompass States with nuclear weapons programmes past or present, including the nuclear-armed States: China, DPRK, France, India, Israel, Pakistan, Russia, South Africa, the United Kingdom, and the United States\textsuperscript{7} The third group would encompass countries that have been used as test sites or impacted by nuclear tests. Several States could fit in this category, including Kazakhstan, where the Soviet test site of Semipalatinsk was located, as well as island nations in the Pacific – which were affected by tests conducted by the US, the UK and France – including Fiji, Kiribati, Marshal Islands, among others. The fourth category would refer to countries affected by a nuclear weapons accident caused by a third party. Although information about this type of incident is scarce in the public domain, at least two countries have been affected by accidents involving US nuclear weapons. In 1966, an American B-52 bomber laden with nuclear weapons collided and exploded over Spanish territory. Two years later, a similar accident happened when another American B-52 loaded with nuclear bombs crashed in Greenland (Sagan 1995).

Among those four groups of countries for which Article 6 of the TPNW could be potentially relevant, the third group is the one which will most likely take the lead in implementing the victim assistance and environmental radiation clauses, as Kazakhstan, Fiji, and Kiribati have already ratified the Treaty. These countries and their populations have been dealing with the consequences of nuclear tests for decades, including through bilateral and international technical cooperation programmes (Bolton 2017).

An initial needs assessment in affected countries should also identify existing capacities within governments, international organizations, NGOs and community organizations. Ideally, at least a basic overview of needs should be available to present to the TPNW’s First Meeting of States Parties (Bolton 2017). Following a common process in arms control and

\textsuperscript{6}See articles 4 (Clearance and destruction of cluster munition remnants and risk reduction education) and 5 (Victim assistance) of the CCM.

\textsuperscript{7}Although Israel has a longstanding policy of nuclear opacity and refuses to acknowledge its status as a nuclear-armed country, there are strong indications that the country possesses a nuclear arsenal. See Cohen (1998, 2010).
disarmament, States Parties could seek to adopt an action plan, setting common principles and actions in support of the Treaty’s universalization and implementation, including elimination of nuclear weapons programmes, victim-assistance, environmental remediation, international cooperation and assistance and transparency measures (Docherty 2020).

To complement measures agreed at the international level, affected countries will need to devise strategies, policies and programmes to provide victim assistance at the domestic level. The processes through which States Parties can further national implementation will vary according to their political system, legal tradition and availability of resources, among other factors. The creation of national working groups or taskforces, as well as the adoption of new legislation, are some means through which countries can make the relevant determination, including with regard to who is entitled to assistance. Likewise, countries will need to decide on the allocation of funds to deliver medical care, rehabilitation and psychological support, as well as provide social and economic inclusion to affected individuals.

Over the past two decades, good practices for victim assistance have emerged in other arms control and disarmament treaties, such as the APMBC and CCM, and could be relevant to the TPNW States Parties. One of them refers to participation of survivors and affected communities in all stages of assessment, planning, implementation, monitoring and evaluation. Another relevant point is the provision of assistance that is gender- and age-sensitive as well as non-discriminatory (Dalaqua et al. 2019). This requires developing mechanisms for disaggregated age-specific and gender-specific data collection related to the needs of survivors and taking those needs into consideration when designing, implementing and reviewing victim assistance programmes. An additional good practice is the creation of a community of practice by establishing regular meetings among implementing partners (governments, NGOs, academics, activists) to share lessons learned at local, national, regional and international levels.

To implement their environmental remediation obligations, affected States Parties should also start by assessing contaminated areas and the risks they pose to the environment and health. After that, countries should consider options for rehabilitation, including methods and technologies to reduce the amount of radioactive material, and stifle the spread of radiation. Similar to victim-assistance, States Parties will need to devise strategies, policies and programmes to ensure remediation measures are implemented. This may require dedicated legislation, research and development (R&D) efforts, and funding schemes to clear contaminated areas.

While victim-assistance and land clearance have been accomplished in the realm of conventional weapons, this process is likely to face challenges when applied to nuclear damage. Ionizing radiation resulting from nuclear weapons explosions is known to have adverse impacts in humans, but it can be difficult to establish direct causality between radiation exposure and health impacts, which may extend beyond a generation (Pelzer 2016). With regard to environmental remediation, the main difficulty may be related to obtaining the financial resources and technology required for radiological clean-up.

**Article 7: International Cooperation and Assistance**

Article 7 of the Treaty on the Prohibition of Nuclear Weapons states:
(1) Each State Party shall cooperate with other States Parties to facilitate the implementation of this Treaty.

(2) In fulfilling its obligations under this Treaty, each State Party shall have the right to seek and receive assistance, where feasible, from other States Parties.

(3) Each State Party in a position to do so shall provide technical, material and financial assistance to States Parties affected by nuclear-weapons use or testing, to further the implementation of this Treaty.

(4) Each State Party in a position to do so shall provide assistance for the victims of the use or testing of nuclear weapons or other nuclear explosive devices.

(5) Assistance under this Article may be provided, inter alia, through the United Nations system, international, regional or national organizations or institutions, non-governmental organizations or institutions, the International Committee of the Red Cross, the International Federation of Red Cross and Red Crescent Societies, or national Red Cross and Red Crescent Societies, or on a bilateral basis.

(6) Without prejudice to any other duty or obligation that it may have under international law, a State Party that has used or tested nuclear weapons or any other nuclear explosive devices shall have a responsibility to provide adequate assistance to affected States Parties, for the purpose of victim assistance and environmental remediation.

Overall, Article 7 provides a framework for States Parties that are “in a position to do so” to provide technical, material and financial assistance to States Parties affected by nuclear-weapons use or testing. Moreover, considering that such nuclear damage may have been brought to a State by another country, paragraph 6 asserts that a State Party that has used or tested nuclear weapons or any other nuclear explosive devices “shall have a responsibility” to provide adequate assistance to affected States Parties.

This same article also foresees a role for international organizations (IOs) and NGOs in the provision of international cooperation and assistance, including the United Nations system, the Red Cross and Red Crescent Societies, as well as international, regional or national organizations or institutions.

National implementation of Article 7 could begin with States Parties undergoing individual evaluation processes to confirm whether they are indeed “in a position” to provide assistance to affected States, and consequently, to more narrowly define the forms of that assistance. For instance, this might encompass the designation of national focal points who can identify and liaise with domestic actors relevant to the provision of assistance. Such evaluations could take place in parallel with the initial needs assessment of affected States Parties, as discussed above in the context of Article 6. A participatory process that engages all stakeholders, including civil society, would be ideal. This is especially the case as non-State actors have progressively played a larger role in the implementation of assistance programmes since the 1980s, and are “increasingly conducting projects and programs on behalf of countries” (Debie and Sticht 2005). It is likely no accident that the TPNW envisions a role for non-governmental organizations and institutes in international cooperation and assistance.

Additionally, the first meeting of States Parties can offer an opportunity to bring all relevant parties together – donor countries, affected States, NGOS and IOs – to discuss ways of implementing Article 7 on a global scale (Docherty 2020). An important aspect of this would be the development of a strategy for mobilizing resources for
international cooperation and assistance. Additionally, States Parties could also consider the establishment of international mechanisms for funding that could channel development aid to assist survivors and decontaminate the environment. One way of doing so is through the creation of voluntary trust funds, which have been established in connection with other arms control agreements, such as the BWC, the CWC and the ATT. In addition to contributions from States Parties, such a funding mechanism could benefit from the contribution of private sector enterprises, as well as non-States Parties interested in supporting survivors of nuclear accidents and cleaning up the environment.

**Discussion and Conclusion**

The exploration of individual TPNW articles provides insight as to the key issues and challenges that are likely to emerge as States Parties move to implement their Treaty obligations at the national level; namely: 1) the lack of standardization in national implementation, 2) the necessary level of national capacity for effective implementation, and 3) the mobilization of international assistance to complement national efforts.

**Challenge 1: Lack of Standardization**

An effective TPNW requires common understanding on expectations of how States should move forward at the national level. The cited flexibility across TPNW articles can be useful – with much left in the hands of individual States Parties or deferred to Meetings of States Parties – in order to accommodate the range of contexts in which States might accede to the Treaty. This can help to ensure cooperative engagement regardless of the type of State Party, with knock-on signalling effects that can even encourage further universalization of the Treaty. Yet the absence of further guidance could be debilitating for stronger implementation of Treaty obligations and for upholding Treaty principles.

The first Meeting of States Parties provides an invaluable opportunity for States to discuss these elements, and even to revisit expectations and develop additional understandings related to the text. Additionally, even as States Parties acknowledge that no-one-size-fits-all, there may be value shortly after the TPNW’s entry into force for “model” States to present examples of what constitutes “necessary” or “appropriate” legislative measures (these could also build on existing legislation, for instance linked to Resolution 1540 commitments)\(^8\). Such transparency in some cases could be generalized and eventually standardized, for instance by providing a matrix for national implementation, a template for the particulars of initial declarations or a methodology for defining and identifying nuclear victims.

**Challenge 2: Capacity and Resources**

If the TPNW is to be effective, it will require adequate resourcing and capacity development at the national level to undertake a variety of different tasks including: identification

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\(^8\)For instance, the Irish legislation in 2019: [http://www.irishstatutebook.ie/eli/2019/act/40/enacted/en/print.html](http://www.irishstatutebook.ie/eli/2019/act/40/enacted/en/print.html).
of gaps in existing legislative measures; collection of data for declarations; assessment of assistance requirements; drafting of legislation; and, significantly, undertaking measures to ensure the TPNW can be enforced at the national level. As such, there could be considerable benefits to the identification and resourcing of a responsible entity or “focal point” to take the lead in national implementation. Such a focal point could act as a coordination point between different entities at the domestic level as well as serving as a channel for engagement between the international and the local.

**Challenge 3: International Assistance**

The implementation of disarmament agreements has long benefited from international cooperation and assistance, which has the potential to reduce many of the challenges discussed in this paper. Conferences of States Parties can provide a venue for conversations around assistance, but it is usually the Secretariat Organization or the Implementation Support Unit (ISU) that coordinates assistance programmes, technical cooperation exchanges, and voluntary funding schemes. In view of this, States Parties to the TPNW may consider establishing an ISU, which could be in charge of coordinating international assistance programmes and voluntary trust funds aimed at national implementation. The ISU could also develop initiatives to facilitate the exchange of information among States Parties, offer trainings to national agencies and build capacity to implement the various provisions of the TPNW, including victim assistance and environmental remediation. In order to maximize the use of resources, this could be done in partnership with regional and international organizations, including the IAEA and the United Nations system.

**Conclusions**

As the TPNW has entered into force, it is important that national and international actors give consideration of the means to put the Treaty in practice. Drawing on previous experience with arms control and disarmament agreements, this article has sought to draw attention to the key issues related to national implementation. Specifically, the article highlights, first, the importance of providing resources and expertise for effective national implementation; and second, approaches to accommodate a diverse range of States Parties with different national contexts and nuclear histories.

To meet the requirements of the TPNW, States will not need to start from scratch. They have already done much to prevent the spread of nuclear weapons, including through their obligations with the NPT and UNSC Resolution 1540. TPNW States Parties can take further steps to facilitate implementation, including activities designed to share national implementation experiences and build common understandings. They can also look to rectify the current institutional deficit in the TPNW through the establishment of an entity committed to supporting, coordinating and sustaining momentum on implementation. This is especially pertinent to the positive obligations provision in the treaty relating to victim assistance and environmental remediation. Early consideration of and discussion around such initiatives could bolster implementation and avoid the pitfalls experienced by past arms control and disarmament measures.
Taking action to ensure effective national implementation of the TPNW early, among the like-minded group of non-nuclear armed States that have already ratified the Treaty, will have a number of follow-on effects. It will enhance the credibility of the Treaty and strengthen the broader nuclear non-proliferation and disarmament regime. It will potentially unlock ready resources for newly acceding States to utilize, or provide blueprints for those States to emulate as they take forward their obligations at the domestic level. It will also set forth precedent for consultation in the adaptation of treaty obligations to different contexts. This last point will become especially relevant as Treaty membership continues to grow, increasing the possibility that States of other nuclear statuses will consider joining the TPNW taking the world closer to the total elimination of nuclear weapons.

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## Appendices (as appropriate)

| Obligation                  | Legal Measures | Enforcement | TPNW art |
|-----------------------------|----------------|-------------|----------|
| Manufacture/produce         | 146            | 117         | 1.1 (a)  |
| Acquire                     | 142            | 109         | 1.1 (a)  |
| Possess                     | 135            | 122         | 1.1 (a)  |
| Stockpile/store             | 107            | 85          | 1.1 (a)  |
| Develop                     | 82             | 63          | 1.1 (a)  |
| Transport                   | 110            | 104         | -        |
| Transfer                    | 125            | 117         | 1.1 (b, c)|
| Use                         | 151            | 139         | 1.1 (d)  |
| Means of delivery           | 41             | 37          | -        |
| Accomplice                  | 145            | 139         | -        |
| Assist                      | 148            | 139         | 1.1 (e, f)|
| Financing                   | 158            | 155         | -        |

**Final Document of the Eighth BWC Review Conference (BWC 2017) OPCW National Implementation Framework (OPCW 2020) Final Document of the NPT 2010 Review Conference (NPT 2010) Awareness raising** promote awareness among relevant professionals. Implementation best practices include “… CWC capacity building and awareness raising events” special efforts should be made and sustained to increase awareness. **Safety and security** implement voluntary management standards on biosafety and biosecurity. Implementation best practices include “effective chemical safety and security practices.” Stressed “the importance of nuclear safety and nuclear security.” **Codes of conduct** development, adoption and promulgation of codes of conduct. “Promote the adoption of scientific codes based on The Hague Ethical Guidelines.” Urges implementation of “principles of the revised IAEA Code of Conduct on the Safety and Security of Radioactive Sources.” **Education** promote the development of training and education programmes. See for example “Multiple Uses of Chemistry”; “Fires”; “Chemistry in Conflict Workbook” “fundamental importance of sustainable programmes … for education and training in nuclear, radiation, transport and waste safety and nuclear security” Approach Means Intended Result Example States submission of information. States Parties submit and circulate information on national measures (i.e. penalties and capacity building measures). Early consideration of issues, leading to better-Informed discussion OPCW Legislation Compendium National Implementation Workshop Representatives of States Parties meet to discuss implementation and enforcement issues. Enhanced common understanding of relevant articles. IAEA Safety and Security Workshops Model Implementing Legislation Development and circulation of model implementation laws (and penal provisions). Example of legislation for States Parties to adapt and develop to the national context. Biological and Toxin Weapons Crimes Act Peer review process Systematic review undertaken by national legal experts of each other’s national legislation. Systematic identification of good practices and gaps. BWC Peer Review mechanism Framework process Analysis of needs (based on national context, stakeholders, gaps and priorities) and development of national action plans. Systematic approach for implementation and facilitation of provision of assistance OPCW Framework process.