

# UNODA OCCASIONAL PAPERS

NO. 38, MAY 2021

## ADVANCING THE PROCESS TO NEGOTIATE A FISSILE MATERIAL CUT-OFF TREATY

THE ROLE OF STATES IN THE AFRICAN, ASIA-PACIFIC  
AND LATIN AMERICAN AND CARIBBEAN REGIONS

PROJECT REPORT

BY JEAN DU PREEZ

UNODA

United Nations Office for  
Disarmament Affairs



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### **About the Author**

Jean du Preez is currently the Senior Manager for Education and Training at the James Martin Center for Nonproliferation Studies at the Middlebury Institute of International Studies at Monterey, California, United States. He is a former South African arms control and disarmament diplomat and also served as senior official at the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization in Vienna.

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## Foreword

Negotiating a fissile material cut-off treaty (FMCT) has been a focus of the Conference on Disarmament since 1994 when its member countries appointed Ambassador Gerald Shannon of Canada as Special Coordinator on the matter.<sup>1</sup>

Ambassador Shannon reported back to the Conference in 1995, presenting a possible mandate for future negotiations.<sup>2</sup> But 26 years later, the deadlocked Conference on Disarmament still has not found enough common ground to begin formal talks on an FMCT—despite years of intensive, tireless efforts by many office holders and members. Many in the field of disarmament believe this to be a truly missed opportunity.

For many years now, the European Union has called for the commencement and speedy conclusion of negotiations on an FMCT on the basis of Ambassador Shannon's report and proposed mandate. To this end, it also decided in 2017 to support the consultative process of a high-level FMCT expert preparatory group established by the United Nations General Assembly.<sup>3</sup>

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<sup>1</sup> [CD/1281](#), para. 7.

<sup>2</sup> [CD/1299](#).

<sup>3</sup> By resolution [71/259](#) of 23 December 2016.

To promote participation in this process by States in Africa, in Asia and the Pacific, and in Latin America and the Caribbean, the European Union Council adopted Decision [2017/2284](#),<sup>4</sup> which the United Nations Office for Disarmament Affairs consequently implemented. On behalf of the Office for Disarmament Affairs, I would like to express our sincere gratitude and appreciation to the European Union for this important contribution to the FMCT issue.

This Occasional Paper represents a key outcome of the project. It was prepared by Mr. Jean du Preez, a member of the [International Panel on Fissile Materials](#). He holds comprehensive knowledge of the FMCT issue and extensive experience in multilateral disarmament as a former arms control and disarmament diplomat for South Africa, a former senior official at the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization in Vienna, and the current Senior Manager for Education and Training at the James Martin Center for Nonproliferation Studies at the Middlebury Institute of International Studies at Monterey (United States).

Mr. Du Preez opens with a detailed history of multilateral initiatives and activities to ban fissile material for nuclear weapons, beginning with steps taken soon after the United Nations was established in 1945.

He briefs readers on key considerations for future talks and provides complete and factual summaries of the project's regional workshops, national capacity-building exercises and regional expert meetings, including the views and positions of participants.

With its clarification of relevant terminology and concerns, this publication can serve as a useful reference in

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<sup>4</sup> European Union, Council Decision (EU) [2017/2284](#) of 11 December 2017 to provide support to States in the African, Asia-Pacific and Latin America and Caribbean regions to participate in the high-level fissile material cut-off treaty expert preparatory group consultative process, Official Journal of the European Union, L 328, 12 December 2017, p. 32–87.

future activities to promote a non-discriminatory, multilateral, internationally and effectively verifiable treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices.

Mr. Du Preez deserves special thanks for contributing his deep knowledge and professionalism to write this paper, prepare and moderate the expert meetings and support the regional workshops. Special gratitude and appreciation are also owed to the international experts who shared their time and impressive understanding of the FMCT issue with participants in the project's workshops, round-table sessions and meetings.

Finally, I would like to thank all my colleagues from the Office for Disarmament Affairs—including its Geneva branch and its three regional centres in Africa,<sup>5</sup> in Latin America and the Caribbean<sup>6</sup> and in Asia and the Pacific,<sup>7</sup> as well as its main office in New York—who helped make this project possible.

**Peter Kolarov**

Project Coordinator

Office for Disarmament Affairs

May 2021

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<sup>5</sup> United Nations Regional Centre for Peace and Disarmament in Africa.

<sup>6</sup> United Nations Regional Centre for Peace, Disarmament and Development in Latin America and the Caribbean.

<sup>7</sup> United Nations Regional Centre for Peace and Disarmament in Asia and the Pacific.





## List of abbreviations

AFCONE	African Commission on Nuclear Energy
CARICOM	Caribbean Community
CELAC	Community of Latin American and Caribbean States
ECOWAS	Economic Community of West African States
FMCT	fissile material cut-off treaty
HEU	highly enriched uranium
IAEA	International Atomic Energy Agency
LEU	low-enriched uranium
OPANAL	Agency for the Prohibition of Nuclear Weapons in Latin America and the Caribbean
UNAEC	United Nations Atomic Energy Commission
UNODA	United Nations Office for Disarmament Affairs
UNRCPD	United Nations Regional Centre for Peace and Disarmament in Asia and the Pacific
UNREC	United Nations Regional Centre for Peace and Disarmament in Africa



## I. Introduction

In accordance with the strategy of the European Union to uphold, implement and strengthen multilateral disarmament and non-proliferation treaties and agreements, the European Union Council decided in 2017 to support the United Nations Office for Disarmament Affairs (UNODA) in promoting participation by States in Africa, in Asia and the Pacific and in Latin America and the Caribbean in the consultative process of the high-level fissile material cut-off treaty expert preparatory group. Its decision (2017/2284)<sup>1</sup> was in line with (i) the long-standing position of the European Union in support of “the immediate commencement and early conclusion of the negotiation of a Treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices, on the basis of document CD/1299 and the mandate contained therein”, and (ii) the call of the European Union for all members of the Conference on Disarmament to “exert their utmost efforts to break the impasse in the Conference on Disarmament and adopt

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<sup>1</sup> European Union, Council Decision [2017/2284](#) of 11 December 2017 to provide support to States in the African, Asia-Pacific and Latin America and Caribbean regions to participate in the high-level fissile material cut-off treaty expert preparatory group consultative process, *Official Journal of the European Union*, L 328, 12 December 2017, p. 32–87.

a comprehensive and balanced programme of work that includes the immediate commencement of negotiations on a fissile material cut-off treaty (FMCT)”.

The joint European Union-UNODA project consisted of subregional workshops, regional expert meetings, substantive support activities provided to United Nations Member States and the establishment of a repository of relevant information and publications. The aims of the project were to (i) facilitate dialogue at the regional level among States in the three target regions; (ii) develop a sense of ownership of the issue among States in these regions; (iii) identify national needs and policy priorities of States in these regions; (iv) involve relevant regional organizations in the discussions on a treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices to be negotiated in the framework of the Conference on Disarmament; (v) evaluate implications of the process at the regional level and of the role that relevant regional and international organizations may play in that process; (vi) make a comparative analysis of the implications of the process for each region; and (vii) facilitate transmission of knowledge relating to fissile materials between academia, civil society organizations and Member States.

In meeting the objectives of the project, the Geneva Branch of UNODA, in collaboration with the Office's three regional centres (in Africa, in Latin America and the Caribbean, and in Asia and the Pacific), organized a series of workshops and expert meetings to (i) enhance knowledge about possible negotiations on an FMCT, and (ii) seek the views of regional experts on such potential negotiations. Through these events, the project engaged representatives from 58 States from the three target regions and 12 regional organizations. Twelve expert speakers participated in the events.

The regional workshops and expert meetings were expected to (i) provide the participating States and regional organizations with detailed background information and

understanding of the possible elements of a future FMCT with the aim of facilitating the participation of States in future negotiations; (ii) encourage regional and intraregional dialogue on a possible future treaty and its relevance and contribution to nuclear disarmament and non-proliferation; and (iii) facilitate discussions on possible avenues to further advance this matter at the regional and international levels.

This report provides an overview of the project's outcome, as well as perspectives shared by participants in the workshops and expert meetings. To provide context, this document includes an introduction to the history of the proposed FMCT, as well as a brief overview of why an FMCT is needed.

Several references are made to the report of the "Group of Governmental Experts to make recommendations on possible aspects that could contribute to but not negotiate a treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices", established pursuant to General Assembly resolution 67/53 of 3 December 2012, and to the report of the High-level Fissile Material Cut-off Treaty Expert Preparatory Group, established in accordance with General Assembly resolution 71/259 of 23 December 2016. However, the objective of the joint European Union-UNODA project was not to evaluate these reports from a regional perspective. Past members of both entities participated in the project's regional workshops and expert meetings.



## **II. Background on efforts to negotiate a ban on fissile material for nuclear weapons**

### **United Nations Atomic Energy Commission and Baruch Plan**

A ban on the production of fissile materials for nuclear weapons has been on the international security agenda since the establishment of the United Nations in 1945, soon after these arms were tested and used for the first time by the United States of America.<sup>2</sup> As the first country to develop a nuclear weapons capability, the United States in 1946 submitted to the United Nations Atomic Energy Commission (UNAEC) the Baruch Plan, proposing the creation of an International Atomic Development Authority that would be entrusted with “managerial control or

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<sup>2</sup> The United States tested its first nuclear device in New Mexico on 16 July 1945 and subsequently detonated two atomic bombs, the first above Hiroshima on 6 August 1945 and the second above Nagasaki on 9 August 1945.

ownership of all atomic energy activities potentially dangerous to world security”.<sup>3</sup>

The Baruch Plan was a culmination of efforts dating back to the December 1945 Foreign Ministers Conference in Moscow, where UNAEC was created. Based largely on the so-called “Acheson-Lilienthal report”,<sup>4</sup> the Plan called for the establishment of an “Atomic Development Authority” that would have reported directly to the United Nations Security Council and overseen the development and use of atomic energy, managed nuclear installations able to produce nuclear weapons, and inspected nuclear facilities conducting research for peaceful purposes. To help enforce a prohibition on any illegal possession of nuclear weapons, the Baruch Plan called for any interference with the proposed inspections to be met with Security Council sanctions not subject to veto by a Council member. The United States committed to begin dismantling and eliminating its nuclear arsenal once the Plan was fully implemented.<sup>5</sup>

The ideals contained in the Baruch Plan were short-lived, however, due to strong Polish and Soviet opposition founded both on the notion that the United States would retain its nuclear monopoly and on reservations about a suspension of Security Council veto powers. In addition, it is now known from contemporaneous records that the Soviet nuclear weapons

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<sup>3</sup> Bernard Baruch, United States representative to the United Nations Atomic Energy Commission, presented the proposal in a [statement](#) to the Commission on 14 June 1946.

<sup>4</sup> This report was named after United States Under-Secretary of State Dean Acheson and Tennessee Valley Authority Chairman David Lilienthal. It was issued by a special advisory committee created by United States Secretary of State James Byrnes.

<sup>5</sup> “[The Acheson-Lilienthal & Baruch Plans, 1946](#)”, Office of the Historian, United States Department of State.

programme was already highly advanced by the end of 1946, leading ultimately to its first nuclear test on 29 August 1949.<sup>6</sup>

In December 1946, as a result of Polish and Soviet abstentions, the Baruch Plan failed to receive unanimous support from the 12 UNAEC members.<sup>7</sup> This defeat effectively signalled the end of the initiative.

### **Atoms for Peace and the Treaty on the Non-Proliferation of Nuclear Weapons**

In his 1953 “Atoms for Peace” speech, United States President Dwight Eisenhower further developed the idea of a ban on fissile material production, stating that “the United States would seek more than the mere reduction or elimination of atomic materials for military purposes”. In the 1950s, the United States investigated a possible cessation of fissile material production in studies at its Hanford plutonium production facility and at Oak Ridge National Laboratory.

During the 1960s, when the negotiations for the Treaty on the Non-Proliferation of Nuclear Weapons (Nuclear Non-Proliferation Treaty) of 1968 were in progress, the United States included a ban on the production of fissile materials for military purposes in a group of prospective non-proliferation and arms control measures—together with proposals for a comprehensive nuclear-test ban, reductions in the nuclear arsenals of the nuclear-weapon powers, and the international management, control and storage of plutonium. In a June 1964

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<sup>6</sup> The secret Soviet nuclear weapons facility “Arzamas-16” created its first chain reaction in a graphite structure on 25 December 1946. Soviet scientists managed to get their first production reactor working satisfactorily in the fall of 1948. *Soviet Atomic Programme - 1946*, Atomic Heritage Foundation.

<sup>7</sup> The vote was held on 30 December 1946, with 10 of the 12 UNAEC members in favour, while the other two members (the Soviet Union and Poland) abstained. The vote required unanimity to pass. “*Acheson-Lilienthal & Baruch Plans*”, Office of the Historian, United States Department of State.

working paper<sup>8</sup> presented to the Eighteen-Nation Committee on Disarmament, the United States described a potential system for “the inspection of nuclear powers under a cutoff of fissionable material for use in weapons”. In this proposal, the United States maintained that “inspection of a nuclear power should provide a high degree of assurance that no violation could take place that would result in a significant increase in its existing stockpile of material available for use in weapons”. The same working paper contained detailed inspection provisions for a verifiable cut-off treaty.

While the Nuclear Non-Proliferation Treaty does not *per se* address the need to control or limit the production of fissile materials for weapons purposes, clear reference is made in its preamble to the “cessation of the manufacture of nuclear weapons, the liquidation of all (their) existing stockpiles, and the elimination from national arsenals of nuclear weapons and their means of delivery”. Expressed as a “desire”, this preambular reference is further emphasized in article VI of the Treaty, requiring all State parties to undertake “to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament”. In establishing the goals of the Treaty, the original drafters had the foresight to envisage control over nuclear weapons materials and the cessation of their production for weapons purposes potentially leading to a quantitative capping of the number of weapons in existence, laying the foundation for their eventual elimination.<sup>9</sup>

The United States and other Nuclear Non-Proliferation Treaty nuclear-weapon States made a concerted and coordinated effort, in the run-up to the Treaty’s 1995 Review and Extension Conference, to seek support for the Treaty’s indefinite extension.

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<sup>8</sup> [A/5731](#), p. 39.

<sup>9</sup> “The Future of a Treaty Banning Fissile Material for Weapons Purposes: Is It Still Relevant?”, Jean du Preez, paper commissioned by the international Weapons of Mass Destruction Commission.



By this time, the quest for both a comprehensive nuclear-test-ban treaty and a treaty banning the production of fissile material was high on the agenda of most non-nuclear-weapon States parties, especially member States of the Non-Aligned Movement. During his speech to the General Assembly in 1993, United States President Bill Clinton gave additional impetus to the cut-off demand, declaring, “We [the United States] will pursue new steps to control the materials for nuclear weapons. Growing global stockpiles of plutonium and highly enriched uranium are raising the danger of nuclear terrorism in all nations. We will press for an international agreement that would ban production of these materials forever.”<sup>10</sup>

That year, the General Assembly adopted by consensus the first resolution entitled “Prohibition of the production of fissile materials for nuclear weapons or other nuclear explosive devices” (48/75 L), recommending “the negotiation in the most appropriate international forum of a non-discriminatory multilateral and internationally and effectively verifiable treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices”. By the same resolution, the General Assembly requested the International Atomic Energy Agency (IAEA) to provide assistance in examining potential verification arrangements for such a treaty, but it did not specify the Agency’s role in this regard. Although the Assembly had referred in previous resolutions to the “production and stockpiling” of fissile materials, it excluded any reference to stockpiles from the 1993 resolution in order to gain consensus. Nevertheless, while the Assembly did not specifically address existing stocks of fissile materials, it stated in the 1993 resolution that a treaty banning production “would be a significant contribution to nuclear non-proliferation in all its aspects”.

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<sup>10</sup> [Statement](#) by H.E. William Clinton, President of the United States of America, forty-eighth session of the United Nations General Assembly, 27 September 1993.

## **Shannon mandate and indefinite extension of the Nuclear Non-Proliferation Treaty**

Heeding the General Assembly's call, the Conference on Disarmament in 1994 appointed Canadian Ambassador Gerald Shannon as its Special Co-coordinator to seek the views of its members on the most appropriate arrangement to negotiate an FMCT. When the Conference on Disarmament adopted the Shannon report (CD/1299) on 24 March 1995, it agreed to establish an ad hoc committee "to negotiate a non-discriminatory, multilateral and internationally and effectively verifiable treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices".

Although the Conference on Disarmament based the core negotiating mandate for the ad hoc Committee on General Assembly resolution 48/75 L of 16 December 1993, the mandate contained in the Shannon report did not preclude any delegation from raising the issues of scope and verification within the Committee. Its language reflected the diversity of views among members of the Conference on Disarmament, and its "permission" to raise wider issues was viewed as necessary to get consensus on the mandate in time for the 1995 Nuclear Non-Proliferation Treaty Review and Extension Conference.<sup>11</sup>

The agreement to negotiate an FMCT was important to the push for the indefinite extension of the Nuclear Non-

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<sup>11</sup> Some delegations (in particular the five Nuclear Non-Proliferation Treaty nuclear-weapon States and India) supported a mandate that would only permit consideration of future production of fissile material, while several other Conference on Disarmament members argued that the mandate should also include consideration of past production. Another group of States wanted the treaty to relate not only to production of fissile materials (past or future), but also to other issues, such as the management of such material. Several delegations (most notably Algeria, Egypt, Iran (Islamic Republic of) and Pakistan) insisted on the inclusion of existing stockpiles in the negotiation mandate. For more information, see Du Preez, "The Future of a Treaty Banning Fissile Material for Weapons Purposes: Is It Still Relevant?".

Proliferation Treaty. In an intensive campaign for indefinite extension led by the United States and directed towards key non-nuclear-weapon States parties, a central role was given to arguments that linked such an extension to nuclear arsenal cuts under the Strategic Arms Reduction Treaty (START) I and II,<sup>12</sup> the conclusion of a comprehensive nuclear-test-ban treaty, and the launch of negotiations on an FMCT. Therefore, the package of integral decisions adopted at the 1995 Nuclear Non-Proliferation Treaty Review and Extension Conference offered a way for all States parties to support the Treaty's indefinite extension while providing ways and means for progress towards nuclear disarmament and non-proliferation.<sup>13</sup> A key element of this package was its Decision 2, "Principles and Objectives for Nuclear Non-Proliferation and Disarmament", with its explicit call for the "immediate commencement and early conclusion of negotiations" of an FMCT in accordance with the Shannon mandate.<sup>14</sup>

Discussions to form an ad hoc committee on the matter stalled after the indefinite extension of the Nuclear Non-Proliferation Treaty, however, as States members of the Conference on Disarmament linked the committee's establishment with agenda items that included wider issues of nuclear disarmament and negotiations on a treaty to ban an arms race in outer space. Notably, States in the Non-Aligned Movement insisted that progress towards the negotiation of an FMCT be linked to real progress towards the elimination of nuclear weapons—a position still widely held as of this writing.

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<sup>12</sup> The full names of the treaties are as follows: Treaty between the United States of America and the Union of Soviet Socialist Republics on the Reduction and Limitation of Strategic Offensive Arms (START I); and Treaty between the United States of America and the Russian Federation on Further Reduction and Limitation of Strategic Offensive Arms (START II),

<sup>13</sup> Du Preez, "The Future of a Treaty Banning Fissile Material for Weapons Purposes: Is It Still Relevant?"

<sup>14</sup> [NPT/CONF.1995/32 \(Part I\)](#), annex.

## Negotiations in the Conference on Disarmament

The Conference on Disarmament only made further progress on the proposed ad hoc committee in 1998, after India and Pakistan had each conducted nuclear-weapon tests for the first time. While several members of the Group of 21<sup>15</sup> called for negotiations on an FMCT to be linked to discussions of a phased timetable for nuclear disarmament, four of the five Nuclear Non-Proliferation Treaty nuclear-weapon States refused to agree to such a linkage,<sup>16</sup> and the Conference on Disarmament succeeded in establishing the ad hoc Committee late in its 1998 session. The new Committee held negotiations chaired by Ambassador Mark Moher (Canada) over the session's final three weeks, but very little progress was made, and the Committee was not re-established the following year as the Conference on Disarmament entered a period of sustained deadlock.<sup>17</sup>

Since the 1998 session, successive Conference on Disarmament presidents and delegations have sought agreement on a programme of work that would include negotiations on an FMCT. Efforts to achieve such an agreement have not been successful, however, due to (i) the unresolved question of whether to include both existing stocks and linkages that emerged over time, as well as (ii) continued differences over other substantive issues on the Conference agenda.<sup>18</sup>

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<sup>15</sup> The Group of 21 comprises members of the Conference on Disarmament that are also members of, or observers to, the Non-Aligned Movement.

<sup>16</sup> The exception was China, which also sought a linkage to negotiations on preventing an arms race in outer space.

<sup>17</sup> Du Preez, "The Future of a Treaty Banning Fissile Material for Weapons Purposes: Is It Still Relevant?"

<sup>18</sup> In May 2009, the Conference on Disarmament decided to establish a working group to negotiate a fissile material treaty on the basis of the 1995 Shannon mandate, while also establishing deliberative working groups for the other core issues on the its agenda (CD/1864). However, differences of views among Conference on Disarmament members prevented the decision from being implemented.

Support for the conclusion of an FMCT in the Conference remains unanimous, but a number of divergent positions remain key obstacles to starting negotiations. In particular, a number of States have consistently advocated for an agreement that would place actual limits on existing fissile material stocks—a proposal beyond the scope of a potential production cut-off treaty.

## **2000 Nuclear Non-Proliferation Treaty Review Conference and 13 practical steps**

The much-heralded success of the 2000 Nuclear Non-Proliferation Treaty Review Conference hinged largely on the unequivocal undertaking of the nuclear-weapon States to accomplish the total elimination of their nuclear arsenals as part of 13 “practical steps for the systematic and progressive efforts to implement article VI”.<sup>19</sup> A key component of these practical steps was an agreement on the necessity to negotiate in the Conference on Disarmament a “non-discriminatory, multilateral and internationally and effectively verifiable treaty banning the production of fissile material for nuclear weapons or other explosive devices” in accordance with the Shannon mandate.

At the 2000 Review Conference, States parties solidified the agreement of the 1995 Review and Extension Conference to immediately start negotiations on an FMCT, while also specifying that such negotiations should “take into consideration both nuclear disarmament and nuclear non-proliferation objectives”. However, their agreement called for these talks to commence in the context of an agreed programme of work in the Conference on Disarmament, allowing any member of the Conference on Disarmament to block progress on negotiations by preventing consensus on a programme of work.<sup>20</sup>

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<sup>19</sup> NPT/CONF.2000/28, Part I (“Article VI and eighth to twelfth preambular paragraphs”).

<sup>20</sup> Du Preez, “The Future of a Treaty Banning Fissile Material for Weapons Purposes: Is It Still Relevant?”

## **2010 Nuclear Non-Proliferation Treaty Review Conference and the 64 action items**

The 2010 Nuclear Non-Proliferation Treaty Review Conference included in its final document<sup>21</sup> a set of agreed conclusions and 64 recommendations for follow-on actions. Under the heading “Fissile Materials”, parties to the Treaty reaffirmed “the urgent necessity of negotiating and bringing to a conclusion a non-discriminatory, multilateral and internationally and effectively verifiable treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices”. They also agreed to four specific action items:

- i. The Conference on Disarmament should, within the “context of an agreed, comprehensive and balanced programme of work, immediately begin negotiation of a treaty banning the production of fissile material for use in nuclear weapons or other nuclear explosive devices in accordance with the report of the Special Coordinator of 1995 ([CD/1299](#)) and the mandate contained therein”. The States parties also invited the United Nations Secretary-General to convene a high-level meeting in September 2010 in support of the work of the Conference on Disarmament (Action 15).
- ii. Non-nuclear-weapon States parties of the Nuclear Non-Proliferation Treaty were encouraged to “commit to declare, as appropriate”, to the IAEA all fissile material that they each designate as no longer required for military purposes and to “place such material as soon as practicable under IAEA or other relevant international verification and arrangements for the disposition of such material for peaceful purposes, to ensure that such material remains permanently outside military programmes” (Action 16).
- iii. All States parties were encouraged to support the “development of appropriate legally binding verification

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<sup>21</sup> [NPT/CONF.2010/50 \(Vol. I\)](#).

arrangements, within the context of IAEA, to ensure the irreversible removal of fissile material designated by each nuclear-weapon State as no longer required for military purposes” (Action 17).

- iv. All States parties were encouraged to dismantle or convert for peaceful uses “facilities for the production of fissile material for use in nuclear weapons or other nuclear explosive devices” (Action 18).

### **Group of Governmental Experts**

By its resolution 67/53, the General Assembly requested the Secretary-General to establish a group of governmental experts with a membership of 25 States<sup>22</sup> chosen on the basis of equitable geographical representation tasked to make recommendations on possible aspects that could contribute to but not negotiate a treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices on the basis of the Shannon report ([CD/1299](#)) and the mandate contained therein.

At its last session, in March 2015, the Group of Governmental Experts agreed to the text of its final report,<sup>23</sup> which was subsequently transmitted to United Nations Member States and the Conference on Disarmament.<sup>24</sup> In line with General Assembly resolution [70/39](#) of 7 December 2015, the Secretary-General later provided the Assembly with views on the Group’s report<sup>25</sup> collected from Member States.

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<sup>22</sup> The Secretary-General invited the Governments of the following countries to nominate an expert to participate in the work of the Group: Argentina, Australia, Brazil, Canada, China, Czechia, Egypt, Finland, France, Germany, Hungary, India, Italy, Indonesia, Japan, Kazakhstan, Mexico, Netherlands, Nigeria, Republic of Korea, Russian Federation, South Africa, Ukraine, United Kingdom of Great Britain and Northern Ireland, and United States.

<sup>23</sup> [A/70/81](#).

<sup>24</sup> [CD/2023](#).

<sup>25</sup> [A/70/81](#).

In its report, the Group outlined the details of its deliberations, characterized the range of expert views on all aspects of a future treaty—most notably in relation to the dynamic correlation between a future treaty’s scope, definition, verification requirements and associated legal obligations and institutional arrangements—and presented the Group’s conclusions and recommendations. The Group reaffirmed that a treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices should be legally binding, non-discriminatory, multilateral and internationally and effectively verifiable, and that document CD/1299, and the mandate contained therein, remained the most suitable basis on which future negotiations could commence without further delay in the Conference on Disarmament.<sup>26</sup>

Because the Group used its report to identify areas of convergence and divergence on key treaty aspects, including where a spectrum of views may exist and where further technical and/or scientific work could be pursued that may assist negotiators, the Group said that the document could serve as “a valuable reference for States and should be a useful resource for negotiators of a future treaty”.

### **High-level Fissile Material Cut-off Treaty Expert Preparatory Group**

Following the report of the Group of Governmental Experts, the General Assembly adopted resolution [71/259](#) of 23 December 2016, requesting the Secretary-General by to establish a high-level fissile material cut-off treaty expert preparatory group with a membership of 25 States chosen on

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<sup>26</sup> As the Group of Governmental Experts noted in its report, [CD/1299](#) “allows negotiators to raise for consideration all aspects of a treaty, including its scope. The Group agreed that such a treaty could contribute practically to achieving a world without nuclear weapons, to non-proliferation in all its aspects and, more broadly, to enhancing global security.”



the basis of equitable geographical representation.<sup>27</sup> In a pair of two-week sessions held in 2017 and 2018, the High-level Fissile Material Cut-off Treaty Expert Preparatory Group considered and made recommendations on substantial elements of a future non-discriminatory, multilateral and internationally and effectively verifiable treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices, on the basis of the Shannon report (CD/1299) and the mandate contained therein. The Group also examined, with a view to making possible recommendations, the report of the Group of Governmental Experts, as well as the views submitted by Member States.<sup>28</sup> In addition, the Chair of the Expert Preparatory Group, Ambassador Heidi Hulan (Canada), organized two two-day informal open-ended consultative meetings in 2017 and 2018 at United Nations Headquarters in New York.

Rather than attempting to narrow the range of options, the Expert Preparatory Group offered a list of potential elements aimed at facilitating future negotiations.<sup>29</sup> In four subsections of the report, the Group addressed a treaty's scope, definitions, verification, and legal and institutional arrangements, as well as elements such as its preamble and measures for transparency and confidence-building. In each subsection, the Group identified both elements of a possible treaty and some of the considerations that negotiators may wish to take into account. While the Group aimed to capture the full range of views on a future treaty, its members agreed that future negotiators should read the document in conjunction with the 2015 report of the

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<sup>27</sup> The Secretary-General invited the Governments of the following countries to nominate an expert to participate in the work of the Group: Algeria, Argentina, Australia, Brazil, Canada, China, Colombia, Egypt, Estonia, France, Germany, India, Indonesia, Japan, Mexico, Morocco, Netherlands, Poland, Republic of Korea, Russian Federation, Senegal, South Africa, Sweden, United Kingdom and United States.

<sup>28</sup> A/68/154 and Add.1 and A/71/140/Rev.1 and Add.1.

<sup>29</sup> [A/73/159](#).

Group of Governmental Experts and take both into account in their deliberations.

In its recommendations, the Expert Preparatory Group agreed, *inter alia*, that the negotiation of a treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices should begin without delay in the Conference on Disarmament, on the basis of the Shannon report (CD/1299) and the mandate contained therein. The Group also called for further consideration of what measures might facilitate the commencement of negotiations and enhance confidence.

### **Other initiatives to advance an FMCT**

Over the years, many Conference on Disarmament delegations have submitted working papers,<sup>30</sup> and numerous workshops, conferences and outreach events have been organized by a variety of States, United Nations offices, research think tanks and other entities.

Several of these initiatives have led to concrete proposals, including draft treaties or elements of a draft FMCT. These include the following:

- i. A complete draft treaty<sup>31</sup> prepared in 2003 by Dr. Thomas Shea,<sup>32</sup> a former IAEA safeguards officer who also headed the IAEA Trilateral Initiative Office

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<sup>30</sup> See “[Documents related to Nuclear Disarmament](#)”, United Nations, Geneva.

<sup>31</sup> “[Treaty Banning the Production of Fissile Material for Use in Nuclear Weapons or Other Nuclear Explosive Devices](#)” (draft), 13 November 2003.

<sup>32</sup> Former IAEA safeguards officer, who also headed the IAEA Trilateral Initiative Office, and current adjunct, non-resident senior fellow at the Federation of American Scientists.

- ii. A “Comprehensive Fissile Material Treaty”<sup>33</sup> submitted by Greenpeace International to the IAEA Expert Group in August 2004
- iii. A draft treaty<sup>34</sup> submitted by the United States to the Conference on Disarmament on 18 May 2006. Notably, this proposal excluded any verification and compliance requirements
- iv. A draft<sup>35</sup> prepared and published by the independent International Panel on Fissile Materials on 2 September 2009
- v. A draft framework agreement model<sup>36</sup> tabled by Brazil at the Conference on Disarmament in June 2010.

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<sup>33</sup> Greenpeace, “Comprehensive Fissile Material Treaty: Greenpeace Submission to the IAEA Working Group, August 2004”.

<sup>34</sup> “Texts of the Draft Mandate for Negotiations and the Draft Treaty—Conference on Disarmament”, U.S. Mission to the UN, Geneva, Switzerland, May 18, 2006.

<sup>35</sup> “A Fissile Material (Cut-Off) Treaty: A Treaty Banning the Production of Fissile Materials for Nuclear Weapons or Other Nuclear Explosive Devices with article-by-article explanations” (draft for discussion prepared by the International Panel on Fissile Materials), 2 September 2009.

<sup>36</sup> See CD/1888 and a presentation at the February 2018 “Informal Consultative Meeting on the work of the High Level Expert Preparatory Group on a treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices” by Mr. Marcelo Câmara (Disarmament and Sensitive Technologies Division Ministry of Foreign Affairs, Brazil) and Dr. Zia Mian (Programme on Science and Global Security, Princeton University, United States).



### III. Relevant terminology

#### **Fissile material for nuclear weapons or other nuclear explosive devices**

In the context of a future FMCT, referring to “fissile material” without adding qualifications could result in misunderstandings and potential loopholes stemming from the term’s different technical definitions. Although “fissile material” is commonly understood to include substances that chain-react with slow neutrons (i.e., fuel used in power reactors), it also may refer to materials that can chain-react with fast neutrons in a weapon. Because a future FMCT would not prohibit the production of “fissile material” for non-military uses, any future treaty will require an agreed definition that is limited to nuclear materials capable of chain-reacting for the purpose of a nuclear weapon or other nuclear explosive device.

The materials that fit this narrower definition are commonly understood to be weapons-grade highly enriched uranium<sup>37</sup> and separated plutonium (Pu), although certain other

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<sup>37</sup> For the purposes of this article, highly enriched uranium is defined as uranium that has been enriched to 20 per cent or more. Such material

transuranic elements are also used in the production of nuclear weapons.

In its deliberations, the Group of Governmental Experts considered four possible definitions for fissile material:

- i. The IAEA safeguards concept of special fissionable material, as outlined in article XX of its Statute,<sup>38</sup> focusing on plutonium-239, uranium-233, uranium enriched for higher levels of uranium-235 or uranium-233 isotopes, and mixtures containing one or more of the foregoing
- ii. The IAEA safeguards concept of unirradiated direct use material,<sup>39</sup> focusing on plutonium containing less than 80 per cent plutonium-238, and highly enriched uranium (containing 20 per cent or more of the isotope uranium-235 and/or uranium-233)
- iii. A treaty-specific definition of weapons-grade material as containing either (i) 90 per cent or more of uranium-235 or uranium-233, or (ii) more than 95 per cent of plutonium-239
- iv. A specific isotopic composition, to be determined during negotiations based on the scope and verification requirements of the treaty.

The Group did not reach consensus on the above definitions, nor did it exclude the possibility of other definitions. The Group did agree, however, that each proposed definition would, to some extent, imply different verification tools, different facilities or parts thereof that must be declared, and different levels of intrusiveness and cost-efficiency in associated verification regimes.<sup>40</sup>

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must be enriched to 90 per cent or more to be considered “weapons grade”.

<sup>38</sup> IAEA, *Statute: As Amended up to 28 December 1989*.

<sup>39</sup> *IAEA Safeguards Glossary*, 4.25.

<sup>40</sup> For a detailed summary of the Group’s considerations, see its report (A/70/81).

## Highly enriched uranium and plutonium

According to the International Panel on Fissile Materials,<sup>41</sup> the global stockpile of highly enriched uranium (HEU) was estimated at the beginning of 2019 to be about 1,335 metric tons, with only about 15 tons in States without nuclear weapons. Meanwhile, the global stockpile of plutonium was believed to be about 530 tons, including roughly 310 tons of civilian material.<sup>42</sup> According to the organization's published findings, less than 5 per cent of global HEU stocks and roughly half of global plutonium stocks were under IAEA safeguards.

Country	HEU, tons	Military Pu, tons	Civilian Pu, tons
Russian Federation	679	128	61.3
United States	565	79.7	8.0
United Kingdom	22.6	3.2	115.8
France	30	6	67.7
China	14.3	2.9	0.04
Pakistan	3.7	0.37	0
India	4.4	0.6	6.9
Israel	0.3	0.9	0
Democratic People's Republic of Korea	0.1	0.04	0
Others	15	-	47.6
TOTAL	1335	220	310

Table published by the [International Panel on Fissile Materials](#).

<sup>41</sup> The International Panel on Fissile Materials is an independent group of arms-control and non-proliferation experts from both nuclear-weapon and non-nuclear-weapon States. The group was founded in 2006 to analyse the technical basis for practical and achievable policy initiatives to secure, consolidate and reduce stockpiles of HEU and plutonium.

<sup>42</sup> [International Panel on Fissile Materials](#).

Considering that a nuclear warhead requires roughly 3 kilograms of weapons grade plutonium (plutonium-239) and/or 15 kilograms of weapons grade HEU (more than 90 percent uranium-238 or uranium-235), the current global stockpile would be sufficient for more than 200,000 nuclear warheads. This does not include material currently reserved for weapons.<sup>43</sup>

## **Tritium**

Tritium is neither a fissile material nor a nuclear material, but it is of strategic significance because it can increase the yield of nuclear weapons by a factor of 5 to 10. Most, if not all, modern nuclear weapons use tritium either to boost the yield of a plutonium-fuelled implosion device or, in thermonuclear weapons, to produce a fusion reaction in combination with deuterium, another hydrogen isotope. It is produced both as a by-product of nuclear reactors and from natural interactions between cosmic rays and gases in the upper atmosphere.<sup>44</sup>

As an isotope of hydrogen containing two neutrons not in the element's most common form, tritium is unstable and therefore radioactive. Although the effective yield of some nuclear weapons would be drastically reduced without periodic replenishment of their decaying tritium, a warhead without tritium can still produce a significant yield. A ban on the production of tritium would starve certain nuclear weapons of an essential component, leading to their natural "death" over time, but such a ban would not eliminate all nuclear weapons.<sup>45</sup>

Most experts<sup>46</sup> agree that tritium should be excluded from a future FMCT, as it is not by definition a fissile material. However, since tritium remains an important component in

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<sup>43</sup> Ibid.

<sup>44</sup> Canadian Nuclear Safety Commission, [Fact Sheet](#), December 2012.

<sup>45</sup> Du Preez, "The Future of a Treaty Banning Fissile Material for Weapons Purposes: Is It Still Relevant?"

<sup>46</sup> Group of Governmental Experts and International Panel on Fissile Materials.

many nuclear weapons—enabling them to be built smaller and lighter while retaining the same yield—it should not be excluded from the negotiations.<sup>47</sup>

## Neptunium and americium

The IAEA has in recent years identified the proliferation potential of neptunium (Np) and americium (Am), two transuranic elements that form at very low concentrations in nuclear fuel when it is irradiated in a reactor. Separating either element from unused uranium, recovered plutonium or high-level nuclear waste requires the use of specially designed, industrial-scale facilities. Present quantities of separated neptunium and americium are small.

Neptunium is suitable for making a nuclear explosive device—albeit a relatively simple gun-type device—and there are divergent views on whether americium could be used in a similar manner.<sup>48</sup>

While the Group of Governmental Experts explored the merits of including neptunium and americium in an eventual treaty definition of fissile material, the Group recognized that neither neptunium nor americium are currently used in nuclear weapons. However, some experts believe that omitting these materials from a future FMCT might create an incentive for their use in the design of new weapons.

## Highly enriched uranium for naval reactors

The continued use of weapons grade material in naval reactors will require special consideration once negotiations for an FMCT commence.

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<sup>47</sup> Hoodbhoy, Pervez and Martin Kalinowski, “[The Tritium Solution](#)”, Bulletin of the Atomic Scientists, vol. 52, no. 4, July/August 1996 (21 November 2003).

<sup>48</sup> For more information, see the 2002 working paper presented by South Africa to the Conference on Disarmament ([CD/1671](#)).



The Model Comprehensive Safeguards Agreement ([INFCIRC/153](#)), issued by the IAEA in 1972, allows for nuclear material to be withdrawn from safeguards for “non-proscribed military activities” (i.e., use in naval reactors). Although this provision has not yet been applied in practice—the only countries currently known to operate such reactors are nuclear-armed States not subject to comprehensive safeguards<sup>49</sup>—ownership of naval reactor technology will likely someday expand to non-nuclear-weapon States, given the prestige and tactical advantages of developing or acquiring nuclear-propelled submarines.<sup>50</sup>

For this reason, it is important to note that the 1972 model terms would only enable international authorities to ensure the non-diversion of naval reactor fuel once that material has been reintroduced into peaceful nuclear activity.<sup>51</sup> In other

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<sup>49</sup> As of this writing, there are approximately 160 nuclear-propelled vessels at sea powered by more than 200 small nuclear reactors. Of these reactors, about 150 are in submarines operated by States possessing nuclear weapons (China, India, France, Russian Federation, United Kingdom and United States). France and the United States also deploy nuclear-powered aircraft carriers, while China is reportedly developing its first nuclear-propelled carrier. In addition, the Russian Federation and United States operate a number of nuclear-powered cruisers, most of them fuelled with uranium enriched to between 20 per cent and weapons grade. France uses both low-enriched uranium and HEU for its existing submarines, depending on the type, but newer French naval reactors run on low-enriched fuel. China’s new generation of submarines will reportedly also be powered by low-enriched uranium. Furthermore, the Russian Federation operates a number of nuclear-powered icebreakers, most of which use HEU-fuelled reactors. Reportedly, the next LK-60 generation of Russian icebreakers will be fuelled by uranium enriched to almost 20 per cent reportedly. For more information, see World Nuclear Association, “[Nuclear-Powered Ships](#)” (updated May 2020).

<sup>50</sup> Brazil—so far the only non-nuclear-weapon State to develop a naval nuclear propulsion capability—plans to launch a low-enriched uranium-fuelled nuclear submarine by 2025. The Bariloche Atomic Centre of Argentina is reportedly considering similar plans. For more information, see World Nuclear Association.

<sup>51</sup> [INFCIRC/153 \(Corrected\)](#), article 14.

words, exempting “non-proscribed military activities” from international safeguards could allow a State to divert nuclear materials from such activities for use in a nuclear weapon or other nuclear explosive device.

This potential loophole is well understood, but a future FMCT will likely still need to include some level of allowance for military naval reactors, as this exception has been available for non-nuclear-weapon States, in principle, for more than 30 years. In its 2015 report, the Group of Governmental Experts concluded that, while a future FMCT should not *prohibit* the production of fissile material for non-proscribed military purposes, such material should be *subject* to a future treaty. The Group further stated that FMCT States parties should be required to provide credible assurance that such material is not diverted to proscribed use.<sup>52</sup>

Complicating matters further, there is no common view on how or whether naval reactor fuel should be addressed at all under an FMCT; some argue that designating nuclear material for military use places it outside the treaty’s negotiating mandate, since such material is no longer considered to be held in “excess”.<sup>53</sup> Moreover, verifying the non-diversion of military nuclear material without compromising confidential details of its production and use would pose a technical and practical challenge under any inspections regime.<sup>54</sup>

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<sup>52</sup> Experts also highlighted the need to address the specific challenges of verifying non-diversion of fissile material for non-proscribed military purposes, given the sensitivity of the material and how it is used. Some experts believed this issue would benefit from further scientific and technical study. For more information, see [A/70/81](#).

<sup>53</sup> For example, the United States set aside much of its weapons-grade HEU not in nuclear weapons for future use in naval propulsion reactors. The material designated for this purpose was not declared to be held in “excess”.

<sup>54</sup> Conference on Disarmament, “Working Paper on a Treaty to Ban the Production of Fissile Material for nuclear Weapons and Other Nuclear Explosive Devices,” submitted by Japan, [CD/1714](#), 19 August 2003.

Nevertheless, revising the Model Comprehensive Safeguards Agreement ([INFCIRC/153](#)) to cover HEU used in naval propulsion should be regarded as a necessary step.<sup>55</sup> Establishing an additional protocol ([INFCIRC/540](#)) as the standard of compliance for Nuclear Non-Proliferation Treaty States parties could strengthen safeguards even further, as this arrangement would help ensure the non-diversion of military reactor material and facilities used for enrichment and reprocessing.

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<sup>55</sup> Any exemption for naval reactors from [INFCIRC/540](#) safeguards would create further loopholes, since such an exemption would prevent the IAEA from providing assurance of absence of undeclared nuclear material/activities—the main purpose of the additional protocol.



## **IV. Regional workshops and expert meetings**

In meeting the objectives of the joint project, the European Union and UNODA held a number of regional workshops and expert meetings from June 2018 to December 2019. While the two meeting types differed slightly in their overall objectives, both benefited from expert presentations by UNODA staff and specialists from outside the region of focus.

The regional workshops had the primary aim of enhancing knowledge about the need for fissile material control and the objectives of a future FMCT. Participants received expert briefings on the possible elements of a future treaty, including insights on the respective work of the Conference on Disarmament, the Group of Governmental Experts and the High-level Fissile Material Cut-off Treaty Expert Preparatory Group. In addition, all of the workshops offered participants the opportunity to share national views and exchange ideas on elements that could be covered by a future treaty, challenges facing the negotiations and possible ways forward.

The regional expert meetings, meanwhile, devoted much greater focus to the substance of a future treaty. Relatively small numbers of participants—generally experts from the

respective region—used sets of guiding questions to engage with selected members of the Group of Governmental Experts and the Expert Preparatory Group, as well as experts from regional organizations, civil society and academia, on possible ways to advance negotiations on an FMCT. The participating experts could share their insights on the continued importance and relevance of such a treaty, including how the objective of advancing negotiations fit within the work of relevant regional organizations. Participants also discussed how to further advance this topic at the regional and international levels.

The summaries below, which are presented chronologically, draw on mission reports prepared by the UNODA branch in Geneva.

### **Regional workshop for the Caribbean, 21 and 22 June 2018**

In cooperation with the United Nations Regional Centre for Peace, Disarmament and Development in Latin America and the Caribbean, the European Union convened a regional workshop for Caribbean States at the United Nations House, located at Port of Spain in Trinidad and Tobago, on 21 and 22 June 2018. The participants included representatives of seven Caribbean States—Belize, Guyana, Haiti, Jamaica, Saint Lucia, Suriname and, Trinidad and Tobago—as well as the Caribbean Community (CARICOM) and the Agency for the Prohibition of Nuclear Weapons in Latin America and the Caribbean (OPANAL).

Mr. Jean du Preez, from the United States-based James Martin Center for Nonproliferation Studies, and Mr. Ignacio Cartagena Núñez, Subdirector-General for Non-Proliferation and Disarmament at the Ministry of Foreign Affairs and Cooperation of Spain, contributed as expert speakers. Their presentations focused on, *inter alia*, work towards an FMCT (e.g., relevant initiatives, decisions, mandates and insights), as well as the related work of the General Assembly, the Conference

on Disarmament, the Group of Governmental Experts and the High-level Fissile Material Cut-off Treaty Expert Preparatory Group. The presenters addressed the positions of key players, as well as the main challenges and barriers to commencing treaty negotiations. Additionally, the speakers outlined possible elements of a future FMCT with a particular focus on clarifying its (i) scope and definitions; (ii) expected basic undertakings (i.e., production, acquisition, assistance, facilities and stocks); (iii) verification system (i.e., key treaty provisions, costs and verification declarations); and (iv) process for compliance and implementation.

Mr. Ulrich Thiessen, International Cooperation Adviser at the European Union Delegation to Trinidad and Tobago, presented the European Union Strategy against Proliferation of Weapons of Mass Destruction, and representatives from CARICOM and OPANAL explained how the FMCT issue fit within their organizations' work. Participants also discussed the continued relevance of a future FMCT, the relationship of a potential treaty with existing instruments in the field of nuclear disarmament and non-proliferation, and how small States in and beyond the Caribbean can advocate for negotiations on an FMCT if they are not members of the Conference on Disarmament. Some attendees expressed a preference to promote, and possibly negotiate, an FMCT in the General Assembly.

### **Regional workshop for Asia, 17 and 18 September 2018**

The regional workshop for Central, South and South-East Asian States took place on 17 and 18 September 2018 in Astana, Kazakhstan, through cooperation with the United Nations Regional Centre for Peace and Disarmament in Asia and the Pacific (UNRCPD), based in Kathmandu. Hosted by the Ministry of Foreign Affairs of Kazakhstan, the event brought together representatives from seven States: Kazakhstan,

Kyrgyzstan, Mongolia, Myanmar, Nepal, Sri Lanka and Turkmenistan.<sup>56</sup>

The workshop opened with remarks by Mr. Yerzhan Ashikbayev, Deputy Minister of Foreign Affairs of Kazakhstan. Participants also heard from the Deputy Ambassador of Czechia in Kazakhstan, Mr. Ladislav Steinhübel, who spoke in his capacity as a representative of a European Union Member State.<sup>57</sup>

After the group was briefed on a potential FMCT and related work was completed within the Conference on Disarmament, the Group of Governmental Experts and the General Assembly, it considered outcomes of the deliberations of the High-level Fissile Material Cut-off Treaty Expert Preparatory Group and possible elements of a future treaty<sup>58</sup> during presentations by two expert speakers: Dr. Annette Schaper, Senior Research Associate at the Peace Research Institute Frankfurt and Dr. Pankaj Sharma, Joint Secretary at the Ministry of External Affairs of India. The speakers, who had supported the deliberations of the Group of Governmental Experts and the Expert Preparatory Group, respectively,<sup>59</sup> emphasized the importance of discussing an FMCT at the diplomatic and scientific levels in parallel so that future

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<sup>56</sup> A representative from the secretariat of the Conference on Interaction and Confidence-Building Measures in Asia, based in Astana, participated in the workshop at no cost. Representatives from the Shanghai Cooperation Organisation and the Association of Southeast Asian Nations Regional Forum were invited to the workshop but both organizations were unable to attend.

<sup>57</sup> Mr. Steinhübel participated as the result of a simultaneous visit to Astana by the European Parliament's Committee on Foreign Affairs.

<sup>58</sup> The elements under discussion included the scope of a potential treaty, as well as related definitions and verification and institutional arrangements.

<sup>59</sup> Dr. Schaper was an adviser to the German delegation to the Group of Governmental Experts to consider the role of verification in advancing nuclear disarmament. Dr. Sharma was a member of the High-level Fissile Material Cut-off Treaty Expert Preparatory Group.

negotiations could draw upon scientifically and technically validated proposals to address unresolved issues (e.g., scope and verification).

While the participants generally acknowledged the importance of a future FMCT, the discussions and questions primarily concerned the capacity of the Conference on Disarmament to advance future negotiations and reasons for its current deadlock, as well as potential institutional arrangements and corresponding costs.

### **Regional workshop for the Pacific, 13 and 14 December 2018**

The regional workshop for the Pacific Island States was held on 13 and 14 December 2018 in Nadi, Fiji, in cooperation with UNRCPD and with support from the Government of Fiji.<sup>60</sup> It brought together participants from nine States—Australia, Fiji, Kiribati, Marshall Islands, Micronesia (Federated States of), Nauru, Palau, Samoa and Vanuatu—as well as representatives from the Pacific Islands Forum Secretariat.

After an opening statement by the Permanent Secretary for Defence and National Security of Fiji, Mr. Osea Cawaru, remarks were delivered on behalf of the European Union by the First Counsellor of the European Union Delegation for the Pacific, Mr. Spiro Polycandriotis-van Duynhoven.

The workshop also included presentations from two experts: Ms. Patricia Hewitson, Assistant Director of the Nuclear Policy Section at the Department of Foreign Affairs and Trade of Australia; and Ms. Sharon Squassoni, a Research Professor of the Practice of International Affairs at George Washington University.<sup>61</sup> Additionally, staff from UNRCPD

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<sup>60</sup> The event was held back-to-back with another workshop, organized by UNODA for certain countries in the region, on the universalization of the Biological Weapons Convention.

<sup>61</sup> At the time that she joined the workshop as a remote participant, Ms. Squassoni was a Research Professor of the Practice of International



and the Geneva Branch of UNODA contributed an overview of international efforts against the proliferation of nuclear weapons and engaged in discussions with the participants.

The attendees received an introduction and background on FMCT-related activities, including work carried out in the frameworks of the Conference on Disarmament, the General Assembly, the Group of Governmental Experts and the High-level Fissile Material Cut-off Treaty Expert Preparatory Group. The two expert speakers explained possible elements of a future FMCT, including objectives, definitions, scope, verification measures and institutional arrangements. While the participants generally acknowledged the importance of negotiating such a treaty, they expressed few views on behalf of the States concerned. Instead, the discussions and questions revolved mainly around the issue's relevance to the Pacific region, matters related to historical nuclear testing in the region and reasons for the current deadlock preventing the entry into force of the Comprehensive Nuclear-Test-Ban Treaty. Participants highlighted the responsibility of the nuclear-weapon States to address damage caused by nuclear testing, including through compensation to the Pacific Island States and affected people, as well as through the clearance of residual radioactive waste.

### **Regional workshop for Western and Central Africa, 5 and 6 February 2019**

The regional workshop for States from Western and Central Africa took place on 5 and 6 February 2019 in Malabo, Equatorial Guinea, through cooperation with the United Nations Regional Centre for Peace and Disarmament in Africa

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Affairs at the Institute for International Science and Technology Policy, located in George Washington University's Elliott School of International Affairs. As of this writing, she was Director of the Global Security Program at the Union of Concerned Scientists.

(UNREC), based in Lomé, Togo.<sup>62</sup> The attendees included representatives from 10 States: Burundi, Democratic Republic of the Congo, Equatorial Guinea, Gambia, Ghana, Liberia, Nigeria, Rwanda, Sao Tome and Principe, and Sierra Leone. A representative from the Economic Community of West African States (ECOWAS) also participated.

Following opening remarks delivered on behalf of the European Union by Mr. Olivier-Antoine Reynes, Chargé d’Affaires of the Embassy of France, and Mr. Werner Grohe, First Secretary at the Embassy of Germany, the workshop benefited from expert presentations by Dr. Annette Schaper, Senior Research Associate at the Peace Research Institute Frankfurt, and Mr. Ignacio Cartagena Núñez, Subdirector-General for Non-Proliferation and Disarmament of the Ministry of Foreign Affairs and Cooperation of Spain.

The expert speakers presented historical background illustrating why an FMCT was important; described related efforts within the frameworks of the Conference on Disarmament, the General Assembly and the Group of Governmental Experts; explained recent developments and challenges for negotiating an FMCT in the context of the wider non-proliferation regime; and underscored such an agreement as a high disarmament priority.

Other expert presentations focused on the potential elements of a future FMCT—in particular its definitions for fissile materials, nuclear fission and the nuclear fuel cycle, as well as its possible scope and verification mechanisms—and the institutional arrangements of a future treaty. A representative of the UNODA Geneva Office introduced the work of the High-level Fissile Material Cut-off Treaty Expert Preparatory Group, including its final report, and the representative of ECOWAS gave a presentation on the relevance of a future FMCT for his

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<sup>62</sup> The workshop was organized in Equatorial Guinea on the recommendation of UNREC to assure the highest possible participation from the region.

organization's work and mandate, including how and whether ECOWAS saw ways to advance the issue at the subregional level. He noted that an FMCT would be thematically anchored in the Directorate of Peacekeeping and Regional Security's Small Arms and Light Weapons Division, which was the responsible organ within ECOWAS for disarmament matters, and he suggested that the organization could take practical measures such as developing a common position on an FMCT (as it had done in the Arms Trade Treaty context), adding fissile materials to regional control lists of dual-use goods and creating an FMCT regional group of experts.

The participants generally acknowledged the importance of negotiating and implementing an FMCT, and they called for more information-sharing, outreach and advocacy so their respective Governments could better understand both the potential treaty's substance and the issues at stake. Their discussions were concentrated primarily on aspects relevant to Africa, including potential economic repercussions of a future treaty for the continent's uranium sector, the importance and means of finding a common regional position and the threat that nuclear arms represent generally for all States.

### **Regional workshop for Eastern and Southern Africa, 22 and 23 May 2019**

The regional workshop for States from Eastern and Southern Africa was held on 22 and 23 May 2019 in Pretoria, South Africa, and organized in cooperation with UNREC. The event drew representatives from 12 States—Botswana, Eswatini, Ethiopia, Guinea Bissau, Kenya, Lesotho, Malawi, Namibia, South Africa, Uganda, Zambia and Zimbabwe—as well as representatives from the African Commission on Nuclear Energy (AFCONE). Representatives from the local embassies of Norway, the Russian Federation and the United States attended parts of the workshop.

Mr. Raul de Luzenberger, Deputy Head of the European Union Delegation to South Africa, delivered opening remarks on behalf of the European Union. He was joined during the opening by Mr. Msingathi Sipuka, National Sustainable Development Goals Advisor for South Africa at the United Nations Development Programme.

The attendees received briefings from two expert speakers: Ms. Sharon Squassoni, Research Professor of the Practice of International Affairs at George Washington University, and Mr. Johann Kellerman, Director for Disarmament and Non-Proliferation at the Department of International Relations and Cooperation of South Africa. As a former member of both the Group of Governmental Experts and the High-level Fissile Material Cut-off Treaty Expert Preparatory Group, Mr. Kellerman provided a historical overview of efforts to negotiate an FMCT, including relevant work carried out in the frameworks of the Conference on Disarmament, the General Assembly, the Group of Governmental Experts and the Expert Preparatory Group. The experts also presented technical information in areas such as defining fissile materials, the nuclear fuel cycle and the current global distribution of stocks. Other briefings addressed potential elements of a future FMCT with a focus on its definitions and scope and on verification and institutional arrangements.

The AFCONE representative discussed how an FMCT would fit into the Commission's work and mandate, as well as how and whether AFCONE could advance the issue at the subregional level. Noting that AFCONE was attempting to strengthen cooperation with the African Regional Cooperative Agreement for Research, Development and Training related to Nuclear Science and Technology (AFRA), the official added that the Commission supports five African networks created through AFRA to deal with nuclear issues. In addition, he noted that AFCONE had been meeting regularly with OPANAL with a view to strengthening cross-regional cooperation. The representative said that negotiating an FMCT fit within other

AFCONE priorities, such as promoting African ratification of or accession to the African Nuclear-Weapon-Free Zone Treaty (Pelindaba Treaty), the Comprehensive Nuclear-Test-Ban Treaty and the Treaty on the Prohibition of Nuclear Weapons.

In the ensuing discussions, attendees considered various ways to build the necessary political will to support an FMCT, including means to elaborate a more unified African position on negotiating such a treaty. In this regard, the African Union was considered to be the key forum. Participants generally acknowledged the importance of both negotiating an FMCT and strengthening intra-African cooperation and coordination on the topic. Notably, AFCONE participation triggered discussions on the relationship of a future FMCT and the Pelindaba Treaty, as well as established global instruments such as the Treaty on the Prohibition of Nuclear Weapons and the Nuclear Non-Proliferation Treaty.

### **Regional workshop for Latin America, 18 and 19 June 2019**

The regional workshop for States from Latin America was held in Lima, Peru, on 18 and 19 June 2019. Organized in cooperation with the United Nations Regional Centre for Peace, Disarmament and Development in Latin America and the Caribbean, the meeting drew representatives from 13 States: Bolivia (Plurinational State of), Brazil, Chile, Costa Rica, Cuba, Dominican Republic, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Peru and Uruguay. Other attendees included representatives of three regional organizations—namely, CARICOM, the Economic Commission for Latin America and the Caribbean (CELAC) and the Organization of American States—and experts from civil society organizations such as the National Autonomous University of Mexico, the Fundación No-proliferación para la Seguridad Global and the Parliamentarians for Global Action.

Mr. Ignacio Cartagena Núñez of the Ministry of Foreign Affairs and Cooperation of Spain and Mr. Jean du Preez of the James Martin Center for Nonproliferation Studies took part in the workshop as expert speakers. Mr. Vincent Ringenberg, Head of the Political Section of the European Union Delegation in Lima, delivered opening remarks on behalf of the European Union.

The experts briefed the participants on historical discussions on a future treaty, while also providing insights into related work done in the framework of the Conference on Disarmament, the General Assembly and the Group of Governmental Experts. In addition, representatives from Brazil and Mexico who had been members of the High-level Fissile Material Cut-off Treaty Expert Preparatory Group shared insights on the Group's discussions and its final report. In other expert presentations, topics explored were possible elements of an FMCT; expected basic undertakings on production, acquisition, assistance, facilities and stocks; key treaty provisions, costs and verification declarations; and the compliance and implementation process.

Participants considered whether a future treaty would be a non-proliferation or a disarmament treaty, with some stressing that any effective future treaty would need to include the nuclear-weapon States and oblige them to disarm. Several participants also noted the contemporaneous focus on ensuring the entry into force of the Treaty on the Prohibition of Nuclear Weapons.<sup>63</sup>

Addressing the relevance of a future treaty for the Caribbean, the representative from CARICOM stressed that while the issue of fissile material was not prominently discussed in the region, it could be linked to the higher regional priority of maritime security as it concerned nuclear waste. With regard to Latin America, participants noted that the Treaty for

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<sup>63</sup> The Treaty on the Prohibition of Nuclear Weapons entered into force on 22 January 2021, 90 days after gaining its fiftieth State party.

the Prohibition of Nuclear Weapons in Latin America and the Caribbean (Treaty of Tlatelolco), which established a nuclear-weapon-free zone in that region, was the first treaty of its kind. It was also stressed that OPANAL, established in accordance with the Treaty of Tlatelolco, provided the most elaborate institutional structure of any nuclear-weapon-free zone. Participants also acknowledged that the current international political climate posed challenges for multilateralism, as reflected in pressure on existing disarmament and non-proliferation regimes and in the difficulty of bringing States to the negotiating table. Attendees added that achieving progress on nuclear disarmament would require broader awareness-raising and discussion in order for civil society and the general public to generate the necessary political pressure.

### **Expert meeting for Latin America and the Caribbean, 19 June 2019**

The expert meeting for Latin America and the Caribbean was held in Lima on 19 June 2019, back-to-back with the above-mentioned regional workshop for Latin America, at the Regional Office of the International Labour Organization. It brought together members of the High-level Fissile Material Cut-off Treaty Expert Preparatory Group (Brazil and Mexico), as well as experts from regional organizations (CARICOM, CELAC and the Organization of American States), civil society and academia (National Autonomous University of Mexico, La Fundación No-proliferación para la Seguridad Global and Parliamentarians for Global Action) with the aim of facilitating contributions of regional expertise and experience for future FMCT negotiations. Participants also identified possible ways to further advance this matter at the regional and international levels. The discussions were structured by pre-distributed guiding questions on a future treaty's general relevance; its negotiating mandate and venue; its objectives and purpose; and its scope and definitions as they regard fissile material production, production facilities, treaty verification, declarations

of fissile material, verification tools, legal and institutional arrangements, governance, compliance, amendment and review, entry into force, duration and withdrawal.

Participants discussed the benefits of having scientific experts elaborate the technical aspects of a future FMCT prior to negotiations, given the highly technical content of a potential agreement. They also discussed ways for regional organizations to advocate for an early start to negotiations on an FMCT; in this regard, some attendees saw regional organizations potentially providing support through related awareness-raising and outreach.

### **Latin America in-country visit, 19 June 2019**

An in-country event was held exclusively for Peruvian national authorities at the Regional Office of the International Labour Organization in Lima on 19 June 2019.<sup>64</sup> The participants included representatives of the ministries of foreign affairs, defence, justice, interior, energy and mines of Peru; the Peruvian Institute of Nuclear Energy; the counter-terrorist and criminalistics directorates of the Peruvian National Police; the Peruvian Armed Forces; and the Permanent Mission of Peru to the United Nations in New York.

Mr. Peter Kolarov of the UNODA Geneva Office introduced the participants to the issue of a potential FMCT, providing historical background on relevant discussions in intergovernmental bodies and expert groups, as well as technical information concerning definitions for terms including fissile materials, nuclear fission, the nuclear fuel cycle and nuclear weapons. Mr. Marcelo Câmara, Head of the Disarmament and Sensitive Technologies Division of the Brazilian Ministry

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<sup>64</sup> Peru, a State member of the Conference on Disarmament, had previously expressed interest in convening a national round-table session in Lima. Similar in-country capacity-building events that had been scheduled in other States needed be cancelled due to the COVID-19 pandemic.



of External Relations and a former member of the High-level Fissile Material Cut-off Treaty Expert Preparatory Group, shared insights on the Group's work and elaborated on Brazil's previous proposal<sup>65</sup> to pursue a framework treaty that could continuously be extended by means of protocols. In addition, the Ministry of Foreign Affairs of Peru outlined the country's position on a future treaty, indicating that its stance was guided by respect for international law and the need to stigmatize nuclear weapons. The Ministry further noted that Peru had participated in the negotiation of the Treaty on the Prohibition of Nuclear Weapons and was currently in the process of ratifying the Treaty. Given Peru's goal to strive towards a world free of nuclear weapons, the Peruvian authorities expressed readiness to join negotiations on an FMCT—potentially outside the Conference on Disarmament, if necessary, due to the current deadlock.

### **Expert meeting for the Asia-Pacific and Africa, 17 and 18 December 2019**

Scientists and other experts from Africa and from Asia and the Pacific met in Bangkok on 17 and 18 December 2019 to discuss possible ways both to advance negotiations on a future FMCT and to facilitate contributions of regional expertise and experience to such negotiations. Organized by the UNODA Geneva Branch in cooperation with UNRCPD and UNREC, the meeting gathered experts from Algeria, Namibia and South Africa; representatives of AFCONE, the IAEA and the national atomic energy authorities of Japan and Kazakhstan; and scientific experts from the University of British Columbia, George Washington University, Jawaharlal Nehru University and Harvard University. As at the previous expert meeting for the Caribbean and Latin America, the discussions were moderated by Mr. Jean du Preez of the James Martin Center for Nonproliferation Studies and structured by a set of pre-

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<sup>65</sup> [CD/1888](#).

distributed guiding questions on the following elements: a future treaty's general relevance, its negotiating mandate and venue, its objectives and purpose, and its scope and definitions in the areas of fissile material production, production facilities, treaty verification, declarations of fissile material, verification tools, legal and institutional arrangements, governance, compliance, amendment and review, entry into force, duration and withdrawal.

Participants in the meeting were briefed by the following expert speakers: Ms. Sharon Squassoni of George Washington University; Mr. Johann Kellerman of the Department of International Relations and Cooperation of South Africa; Mr. Du Preez; and Mr. Toshio Sano, former Ambassador and Permanent Representative of Japan to the Conference on Disarmament.

The organizers aimed to facilitate dialogue among selected scientific experts, former members of the Group of Governmental Experts and the High-level Fissile Material Cut-off Treaty Expert Preparatory Group, and representatives of regional organizations on options for advancing FMCT negotiations and on other nuclear-security and nuclear-energy-related issues. The meeting also enabled regional experts to exchange views on (i) the continued importance and relevance of a future FMCT, and (ii) how the objective of advancing negotiations on such a treaty fit within the work of respective regional organizations. Additionally, participants shared perspectives on how to further advance this topic at the regional and international levels.<sup>66</sup>

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<sup>66</sup> United Nations Office for Disarmament Affairs, [“Expert meeting to facilitate dialogue on possible negotiations of a Fissile Material Cut-Off Treaty \(FMCT\) concludes in Bangkok”](#), 2 January 2020.



## V. Regional perspectives

This section summarizes the views shared by regional stakeholders on a future FMCT during the workshops and expert meetings described in Part IV. These points are organized by each of the major themes addressed.

### **Relevance of a future FMCT**

Throughout the regional workshops and expert meetings, many participants from the three targeted regions expressed the belief that an FMCT remained important even though the negotiations for such a treaty had been deadlocked for more than 20 years. One participant sounded a hopeful note in this regard, suggesting that disarmament and non-proliferation treaties negotiated during arms control “springtime” would continue to bind States through the “winter”, until the return of “spring” finally allows further progress.

In a similar vein, it was observed that, with the exception of recently abrogated instruments such as the Intermediate-Range Nuclear Forces Treaty, ratifiers of disarmament-related

treaties such as the Chemical Weapons Convention<sup>67</sup> and the Comprehensive Nuclear-Test-Ban Treaty had generally remained party to such agreements.

Other participants, meanwhile, advised keeping “realistic” expectations with respect to a potential FMCT, noting that, while the technical aspects had been well defined, its future prospects would depend on a commitment by all States with nuclear-weapon programmes. It was added that the interest of non-nuclear-weapon States in minimizing nuclear material and contributing to arms control might have diminished as the 1995 promise of an FMCT had gone unfulfilled.

The consultative process also highlighted how the negotiating environment for a future FMCT may be affected by unrelated international and regional issues, as Governments consider such international security matters holistically. Participants in the discussions generally considered negotiations on an FMCT to be a less important priority than advancing the Treaty on the Prohibition of Nuclear Weapons and progress towards nuclear disarmament, tackling issues in the framework of the 2030 Agenda for Sustainable Development, and responding to matters such as climate change, poverty and human trafficking. In addition, many States from the consulted regions possessed limited expertise on issues related to a future FMCT, contributing to their relatively low interest. It was also observed that because treaties establishing nuclear-weapon-free zones covered most of the targeted regions, many of the States consulted were already legally bound not to produce fissile material for nuclear weapons or other nuclear explosive devices under their Nuclear Non-Proliferation Treaty safeguards agreements and regional commitments.

African representatives, including from AFCONE, observed that an FMCT was “not really a priority for Africa”

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<sup>67</sup> The Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction is also known as the Chemical Weapons Convention.

as a region, pointing instead to the universality of the Pelindaba Treaty as the continent's most important disarmament and non-proliferation objective. Other high priorities for Africa included achieving the entry into force of the Treaty on the Prohibition of Nuclear Weapons, as well as access to the benefits of nuclear science and technology for peaceful purposes, especially nuclear medicine. Such representatives further observed that, while African States supported nuclear disarmament in general, they considered instruments such as the Comprehensive Nuclear-Test-Ban Treaty and the Arms Trade Treaty to be far more relevant and important to their interests than a prospective FMCT. In the words of one African participant, "an FMCT would be nice to have, but it is not a requirement".

Regarding the potential advantages of an FMCT, there was a widely held view in the consulted regions that such a treaty would benefit them only if it had a strong disarmament character. In this regard, participants strongly favoured covering past production of fissile material for weapons purposes in a future treaty, as the non-proliferation benefits of a treaty limited to future production would be less relevant in the consulted regions.

Others, however, welcomed the potential for an FMCT to strengthen the global non-proliferation regime, especially given the fragmentation and tension of the current international security climate. Along similar lines, several participants suggested that, because of the vast changes in the global security environment since 1995, when the negotiating mandate of an FMCT was agreed upon, it had become even more important to advance the negotiation of a treaty to halt production of weapons-grade fissile material.

### **Role of regional organizations in advancing negotiations**

In general, participants from all three regions considered regional organizations to have only a limited role in advancing

negotiations on a future FMCT. Their reasons for holding this view ranged from a lack of capacity and resources, to different priorities and areas of focus on the part of the organizations concerned.

With regard to the prospects for a common African position on an FMCT, it was observed that, in the relatively rare instances that the African Union had expressed itself on a disarmament or non-proliferation issue, its focus was on a matter of direct importance to African nations, such as anti-personnel landmines or the proliferation of small arms and light weapons. A number of African participants commented that a future FMCT should have a nuclear disarmament character in order to foster a common African position. In addition, some noted that AFRICOM would have a limited role in advancing an FMCT, given the organization's limited funding and its primary focus on achieving the universalization and implementation of the Pelindaba Treaty, including the advancement of nuclear science and technology for peaceful uses in Africa.

Some similar themes emerged in Latin America and the Caribbean, where regional and subregional organizations such as CARICOM apply their limited financial resources, technical staff and expertise to provide a collective voice to small States that themselves have very limited resources. In this context, efforts towards an FMCT had generally been overshadowed by competing priorities that these organizations and their member States deemed more important. Likewise, it was pointed out that supporting the Treaty on the Prohibition of Nuclear Weapons and the Comprehensive Nuclear-Test-Ban Treaty were higher priorities for the much larger CELAC, as the political priorities of various member States posed challenges to advancing a common regional position on an FMCT. It was also pointed out that promoting a common view on an FMCT would be a particular challenge in the current international security context, as CELAC members did not consider such an agreement to be a high priority. According to some participants, the heavy focus of regional organizations on tackling shared socioeconomic

challenges meant that individual States would need to assume greater role in advocating for an FMCT. To this end, some participants believed that while regional workshops were an important means to enhance knowledge about the need for such a treaty, their focus should be broadened to include wider participation from civil society.

In Asia and the Pacific, a region shared by four nuclear-armed States and numerous countries strongly opposed to nuclear weapons, it would be difficult for the region to reach even a general shared understanding on nuclear non-proliferation and disarmament, let alone the need for an FMCT. Moreover, Asia lacks an effective regional organization to advance a common position on such a treaty. While organizations such as the Association of Southeast Asian Nations, the Shanghai Cooperation Organisation and the Pacific Islands Forum are important actors in the broader security context, the role of the region's three nuclear-weapon-free zones,<sup>68</sup> as well as Mongolia's single-State nuclear-weapon-free status, were considered to be far more important in unifying non-nuclear-weapon States in the region. As in Africa, many participants from Asia and the Pacific considered their obligations under regional treaties establishing nuclear-weapon-free zones to be the highest priority.

## **Negotiating forum**

As the stalemate in the Conference on Disarmament persisted into its third decade, the question of whether the Conference continued to be the most appropriate forum for negotiating an FMCT was a central theme in the three regions consulted. Recent negotiations for other multilateral disarmament treaties had taken place in the General Assembly or in specially mandated subsidiary bodies, and participants

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<sup>68</sup> South Pacific Nuclear-Free Zone; Southeast Asia Nuclear Weapon-Free Zone; and Nuclear-Weapon-Free Zone in Central Asia.

considered the potential of these processes to provide alternative negotiating forums for an FMCT.<sup>69</sup>

It was commonly observed that the 65 States members of the Conference on Disarmament did not adequately represent views from all regions, especially those of smaller States in Africa, the Caribbean, South-East Asia and the Pacific.<sup>70</sup> It was also noted that States members from these regions generally aligned their positions with those taken by the Group of 21<sup>71</sup> and, in the context of the General Assembly, by the larger Non-Aligned Movement.

Participants from all three regions expressed the view that, while many States outside the Conference on Disarmament were interested in an FMCT, they did not prioritize the issue as members of that body might. Several participants, most notably from smaller States without representation in the Conference on Disarmament, questioned the relevance of the consultative process given the limited perceived ability of their countries to influence the proceedings. As one experienced regional representative stated, “Politeness should not be confused

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<sup>69</sup> Treaties negotiated outside the Conference on Disarmament include the Anti-Personnel Mine Ban Convention of 1997 (i.e., Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction), the Convention on Cluster Munitions of 2008 and the Treaty on the Prohibition of Nuclear Weapons of 2017.

<sup>70</sup> The States members of the Conference on Disarmament from Africa are Algeria, Cameroon, Democratic Republic of the Congo, Egypt, Ethiopia, Kenya, Morocco, Nigeria, Senegal, South Africa, Tunisia and Zimbabwe. The Conference on Disarmament members from Asia-Pacific are Australia, Bangladesh, China, Democratic People’s Republic of Korea, India, Indonesia, Iran (Islamic Republic of), Iraq, Japan, Kazakhstan, Malaysia, Mongolia, Myanmar, New Zealand, Pakistan, Republic of Korea, Sri Lanka and Viet Nam. The Conference on Disarmament members from Latin America and the Caribbean are Argentina, Brazil, Chile, Colombia, Cuba, Ecuador, Mexico, Peru and Venezuela (Bolivarian Republic of).

<sup>71</sup> The Group of 21 comprises members of the Conference on Disarmament that are also members of, or observers to, the Non-Aligned Movement.



with support or enthusiasm for a particular cause.” Moreover, representatives from many countries in these regions, including active members of the Conference on Disarmament, said their Governments were not likely to regard a future FMCT as an attractive option if it included only nuclear non-proliferation, and not nuclear disarmament, within its scope.

Since the rules of procedure of the Conference on Disarmament effectively allow just one State member to block an agreement to begin negotiations, some regional participants considered a potential ad hoc body of the General Assembly to be a more appropriate negotiating forum. However, it was also observed that the substantive divides over an FMCT would likely remain consistent across forums, and the States responsible for blocking progress in the Conference on Disarmament would therefore continue to hinder agreement in the General Assembly. Additionally, some participants argued that meaningful FMCT negotiations must be conducted within the United Nations framework with the involvement of nuclear-armed States, and the problem thus lay not with the negotiating forum but rather with a lack of commitment by several nuclear-armed States inside and outside the Nuclear Non-Proliferation Treaty.

Some participants considered that, although the Conference on Disarmament had historically been a useful forum for advancing legally binding multilateral measures in response to arms-related threats, its reliance on consensus had become a burden in recent decades, when a small number of States members established conditions for allowing negotiations to move forward. In this context, it was observed that exploring potential alternative forums for negotiating an FMCT would not spell an end to the Conference on Disarmament.

### **Negotiating mandate: Objectives and purpose**

Almost 25 years after the Conference on Disarmament agreed to the negotiating mandate for an FMCT based on the

report of its Special Coordinator ([CD/1299](#)), participants from the three regions considered whether that mandate still remained relevant in the current security environment. In this regard, it was pointed out that the mandate was formulated specifically for negotiations in the Conference on Disarmament, with a view to seeking agreement on the indefinite extension of the Nuclear Non-Proliferation Treaty in 1995. Furthermore, some attendees believed that the mandate was flawed from the start, as the Conference on Disarmament was inherently not fully inclusive and non-discriminatory.

It was also argued that differences over the scope of an FMCT had dissuaded States from entering into negotiations on the basis of the Shannon report and the mandate contained therein, and defining the scope would thus constitute the very purpose of the negotiations. Other participants disagreed with this notion, arguing that the long-standing impasse in the Conference on Disarmament was due not to the 1995 mandate, but rather to competing and linked priorities of some of its members.

Participants from across the three regions felt strongly that a future FMCT should have incorporated nuclear non-proliferation and nuclear disarmament objectives while laying a practical foundation for additional disarmament efforts. Many also held the view that, in order to seek to reduce and/or eliminate pre-existing fissile material accessible for additional nuclear weapons or other nuclear explosive devices, an FMCT should address past production of fissile material as defined in the treaty itself.

Mr. Marcelo Câmara, the participant from Brazil who had served on the Group of Governmental Experts and the High-level Fissile Material Cut-off Treaty Expert Preparatory Group, referred to the country's proposed draft framework agreement<sup>72</sup> introduced to allow the Conference on Disarmament to

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<sup>72</sup> [CD/1888](#).

commence negotiations. The proposed structure envisaged (i) a framework or umbrella treaty containing provisions on objectives, definitions and final clauses; (ii) a protocol banning the production of fissile material for nuclear weapons or other nuclear explosive devices, including a verification mechanism; and (iii) a second protocol dealing with fissile material as defined in the framework or umbrella treaty which is not, at the moment of entry into force, contained in a nuclear weapon or in any other nuclear explosive device, including a verification mechanism. The final clauses of the framework or umbrella treaty would define the modalities for participation in the protocols. Three reasons were offered for why a framework treaty should be considered: (i) it would offer room for flexibility on the treaty's scope; (ii) it would establish from the inception a two-step framework whose main elements are considered agreeable, even if they are not all agreed at the same time; and (iii) it would provide predictability on the way forward. It was also argued that a pragmatic approach towards negotiating the treaty was more needed than ever before, and proposals on how to move forward would have to be acceptable to the States with nuclear weapons.

According to one view that was expressed, negotiators could bridge the gaps between opposing positions using a step-by-step approach that would require declaring and codifying moratoriums on the production of fissile material by all nuclear-armed States. Such moratoriums, once in place, could be replaced by a legal agreement. Others were sceptical, however, stating that, while the establishment of moratoriums by all nuclear-armed States would be an important confidence-building measure, it would not provide a sufficient legal basis for a future FMCT.

### **Treaty scope**

Participants from all three regions considered whether the treaty should focus only on fissile material production for military purposes or also cover existing stocks and/or material

declared to be held “in excess of military requirements”. Although they generally agreed on the need to prohibit future production of HEU and plutonium for weapons purposes, there were several differences of opinion on including past production. Participants from Latin America and the Caribbean, as well as many from Africa and from Asia and the Pacific, said that a future FMCT should include material declared as exceeding military needs, as well as material produced prior to the treaty’s entry into force. It was also suggested that a future treaty should provide for a repository to store declared “excess” material under international safeguards. In this context, while participants pointed out the inherent challenge of verifying a State’s “self-declaration” of such material, they underscored the importance of preventing “perfect” from becoming “the enemy of the good” in helping a future treaty to gain traction.

Proponents of including such “excess” material in a future FMCT argued that doing so would be in line with the obligations made by nuclear-weapon States under article VI of the Nuclear Non-Proliferation Treaty; that it would further protect against the proliferation of materials from both Nuclear Non-Proliferation Treaty nuclear-weapon States and *de facto* nuclear weapon possessors; and that it would serve to equalize the respective safeguards burdens of nuclear-weapon States and non-nuclear-weapon States—a necessity for any FMCT regime to be truly “non-discriminatory”. Furthermore, it was noted that including “excess” material in a future treaty would (i) eliminate a potential loophole under which a State could produce new military fissile material and falsely declare that it predated the agreement, and (ii) help prevent the acquisition of military-grade nuclear materials by terrorists.

Other attendees, however, challenged calls for a future FMCT to cover fissile material held in excess of military requirements. Some of these participants, most notably from Asia and the Pacific, questioned how “excess” stocks would be defined, how such stocks would subsequently be declared by States and how these stocks would eventually be reduced under

an FMCT. Opponents also pointed to the strong opposition of most nuclear-armed States, as well as the technical difficulty of accounting for all historical stocks, to argue that a strict focus on future production was more feasible. In addition, it was noted that an FMCT covering existing stocks would likely be harder for nuclear-weapon States to support.

Participants were also asked to consider whether a future FMCT should (i) cover fissile material production for civilian purposes, and (ii) prohibit civilian production of plutonium and civilian enrichment of uranium to more than 20 per cent. While participants across the three regions expressed strong views against including civilian production of fissile material under a future FMCT, they differed on the civilian production and stockpiling of HEU. While banning HEU in the civilian sector was considered important, some said that the determining factor of such a ban should be the intended use of a particular uranium supply and not its physical characteristics, and the ultimate aim should be to prevent the diversion of HEU to military programmes in States that already possessed nuclear weapons.<sup>73</sup> Along similar lines, it was suggested that prohibiting uranium enrichment above 20 per cent would only make sense if all HEU production were banned, because (i) it would be very difficult to selectively enforce a ban on enrichment beyond a specific level, and (ii) a ban would not significantly affect the relatively low cost of refining uranium already at 20 per cent to the 90 per cent level suitable for weapons. With regard to the established peaceful use of HEU in the production of medical isotopes, it was pointed out that (i) such isotopes would be more expensive to produce with low-enriched uranium (LEU), including any LEU produced by down blending stockpiled HEU, and (ii) some types of medical isotopes could not be produced with only LEU.

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<sup>73</sup> In this context, some participants noted that most countries were moving away from the use of HEU in the civilian sector, where the risk of terrorist access far outweighed the potential benefits.

With regard to the potential risk that weapons-grade fissile material could be diverted from non-proscribed uses, such as naval propulsion, participants considered whether a future FMCT should cover these uses. There was general agreement that the continued use of weapons-grade material in naval reactors would require special consideration during the negotiation of a future treaty. The challenge, it was pointed out, would be to verify that a given quantity of HEU was indeed being used to operate a sensitive military asset. Furthermore, participants noted that plans by Brazil and possibly Argentina to launch nuclear-powered submarines would need to be resolved prior to the adoption of an FMCT. They also highlighted the need to address implications from the possible use of reactors in military space vehicles.

### **Treaty definitions**

There was a general agreement across the regions consulted that, for any future FMCT to be effective, it must establish specific definitions for fissile material, fissile material production and fissile material production facilities as they relate to the treaty. These definitions, it was pointed out, should be based on the scope and requirements of the future treaty's verification regime.

While not discussed in detail, there was a general agreement that fissile material should be defined in terms of the IAEA safeguards concept of special fissionable material, as outlined in article XX of its Statute, as well as the IAEA safeguards concept of unirradiated direct use material.<sup>74</sup> Similarly, there was a widely held view that an FMCT should define weapons-grade material as containing at least (i) 90 per cent uranium-235 or uranium-233, or (ii) more than 95 per cent plutonium-239. Negotiators could determine specific isotopic compositions based on the treaty's scope and verification requirements.

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<sup>74</sup> *IAEA Safeguards Glossary*, 4.25.

It was also observed that new types of fissile material should be included if such material was developed in the future. Like the Chemical Weapons Convention, an FMCT should have provisions allowing its list of proscribed materials and facilities to be updated as the need arises.

Participants additionally considered whether tritium should be defined by the treaty, as well as how a definition could impact verification of the material's production, including in the civilian sector. While some argued that tritium should be excluded on the basis that it was not itself a fissile material, others highlighted the argument of certain members of the Group of Governmental Experts that tritium remained an important component in many nuclear weapons and should therefore be considered for inclusion.<sup>75</sup> It was also stated that tritium should be included in a future FMCT, despite the technical challenge of doing so, in order to make the treaty relevant from a nuclear disarmament perspective. It was further suggested that, at the very least, tritium should not be excluded from the negotiating mandate.

### **Fissile material production facilities**

Although participants did not discuss the matter of production facilities in great detail, they were generally of the view that a treaty should cover a broad range of these sites, including those involved in upstream enrichment and reprocessing. In this regard, it was pointed out that the scope of a future treaty should determine the range of production facilities it covered, including whether it extended to fuel fabrication sites. A question about the international community's capacity to identify clandestine production facilities, especially any located close to uranium mines, was also highlighted in the discussion. Others, meanwhile, called for a future FMCT to address facilities designed to store previously produced

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<sup>75</sup> See the note by the United Nations Secretary-General of 7 May 2015 ([A/70/81](#)).

material, including any that nuclear-armed States declared in excess of military requirements. According to this view, if the treaty ultimately included such “excess” fissile material, it should also include storage sites for the material.

Attendees made repeated reference to the importance of evaluating the intent of particular production facilities—a difficult task, especially for facilities that may be producing fissile material legitimately for civilian use. In this context, it was considered important for a future treaty to include all LEU production facilities, including those under appropriate safeguards in nuclear-armed States. Some participants said the onus should be on the producers of fissile material to provide assurances of non-diversion, adding that a manufacturer should not be allowed to produce and hold such material outside of international safeguards. Another argument was made that a complete ban on enrichment facilities would remove any ambiguity by gradually moving all fissile material production under international control.

### **Treaty verification**

In accordance with the Shannon report and the mandate contained therein (CD/1299), a future FMCT should be non-discriminatory, multilateral and internationally and effectively verifiable. In this context, participants stated that an FMCT verification standard should be designed to apply in a non-discriminatory manner to all States parties. It was also argued that an FMCT verification regime should have the aim of ensuring that nuclear-armed States did not clandestinely produce fissile materials either for weapons purposes or to increase their existing stockpiles.

According to one widely held view, existing IAEA verification standards should be integrated into the treaty as a means to facilitate non-discrimination, and the IAEA should be responsible for implementing verification. While it was not considered necessary to invent a new safeguards system,



new technologies could be introduced to apply safeguards in nuclear-armed States. It was also mentioned that effective technical solutions for verifying sensitive information could be developed or already existed (e.g., a “black box” approach), and care should be taken to ensure that commercially sensitive information was not disclosed. While the Model Comprehensive Safeguards Agreement and Additional Protocol were believed to offer a sufficient framework for Nuclear Non-Proliferation Treaty nuclear-weapon States to meet their obligations under an FMCT, some participants argued that requiring such arrangements would be too intrusive for every State that possessed nuclear weapons to accept. Widening the treaty’s scope would introduce additional complications.

The purpose of FMCT verification, it was stated, should be to verify that there was no increase in the amount of fissile material held by States parties for weapons purposes. Participants added that once an agreement was reached on what needs to be verified, a verification system could be designed with a view to monitoring relevant material and facilities. That would be of particular importance if the scope of the treaty included declared “excess” material, as the IAEA would need to devise a process for verifying that stocks of that material did not change over time. If such material was included in the treaty’s scope, its non-sensitive forms could become subject to the treaty in a manner equivalent to material produced for non-proscribed purposes. Additionally, all past production of fissile material would have to be accounted for and verified under a treaty in order to provide a clear baseline for assessing and verifying treaty compliance.

It was also mentioned that verifying “excess” material would require a mechanism to confirm its quantity and quality. Such a mechanism could be similar to the system used under the Trilateral Initiative, which was launched in 1996 to investigate the technical, legal and financial issues associated with IAEA verification of weapons-related fissile material in the Russian Federation and the United States.

## Declarations and other verification tools

Regional stakeholders generally agreed that, in order to facilitate effective verification, a future FMCT should require States parties to provide, within a specific time frame upon its entry into force, initial declarations of their fissile material production facilities and of all material covered under the treaty.<sup>76</sup> In this regard, participants anticipated difficulty in any associated effort to calculate how much weapons-grade fissile material could be harvested from residual nuclear material (e.g., by reprocessing), potentially leaving a loophole for clandestine production.

Participants believed that these initial declarations should be complemented by required ongoing declarations to capture any future production of fissile material, as well as any plans to construct new fissile material production facilities or change the status of existing ones. Furthermore, diverse verification tools were considered necessary for the FMCT verification regime to provide credible assurance that States parties remained in compliance with their treaty obligations and verification requirements. To close a potential loophole allowing material designated as naval reactor fuel to be used in nuclear weapons or other nuclear explosive devices,<sup>77</sup> participants saw a need to require (i) a means for States parties to declare both existing stocks and plans for future production, and (ii) verification arrangements suited to the highly secretive nature of naval fuels.

Participants were also asked to consider (i) what information should be included in FMCT declarations (e.g., inventories of fissile material, as well as designs and statuses of facilities that produce, process or handle such material); (ii) whether related downstream facilities handling fissile material and/or upstream facilities should be included; and

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<sup>76</sup> It was understood that the specific types of material to be covered under a treaty (e.g., material produced prior to its entry into force) should be subject to negotiation. For additional information, see “Treaty scope”.

<sup>77</sup> For more information, see “Highly enriched uranium for naval reactors”.

(iii) whether FMCT verification tools should include provisions for non-routine inspections, such as challenge inspections, as a means to detect and deter undeclared fissile material production.

In the context of these questions, it was pointed out that few “challenge” inspections had been attempted under existing verification regimes,<sup>78</sup> as such inspections were not considered effective. While several participants favoured an inspection modelled closely after those established under the Chemical Weapons Convention and the Comprehensive Nuclear-Test-Ban Treaty, the latter’s system was considered preferable because (i) it was seen as less prone to misuse, and (ii) it included a consultation and clarification process, which could be beneficial to avoid frivolous accusations and costly inspections.<sup>79</sup> In addition, participants suggested that the well-defined and robust inspection procedures of the Joint Comprehensive Plan of Action could be replicated for the States parties of a future FMCT. Similarly, the IAEA could be empowered to discuss any FMCT-related concerns with an accused violator, giving that State an opportunity to provide additional clarification. If such information failed to satisfy the Agency, it should be able to request more information or direct access to the facility concerned.

## Verification cost

Participants considered how to divide the costs of verification among States with nuclear weapons and non-nuclear-weapon States, including whether past and current producers of fissile material for nuclear weapons purposes should pay a larger share. Although the IAEA was widely

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<sup>78</sup> Under the Chemical Weapons Convention, for example, any State party may request the Technical Secretariat of the Organisation for the Prohibition of Chemical Weapons to undertake a challenge inspection to clarify any concerns over the potential non-compliance of another State party.

<sup>79</sup> According to one view, the considerable expense associated with challenge inspections could help deter treaty violations.

considered to offer the most cost-effective means of undertaking verification under a future FMCT, establishing an inspection regime could still require a significant increase in the Agency's safeguards budget, depending on the scope of the materials and facilities to be verified.<sup>80</sup> Participants saw a need to consider how an FMCT verification regime might affect other parts of the IAEA budget and activities, and they believed that all of the Agency's member States should share the cost burden of an associated spending increase.

Creating a new independent verification organization (e.g., a "fissile material cut-off treaty organization") could make sense for a variety of reasons, including the potential ability to independently and effectively verify compliance with a future treaty in a non-discriminatory, multilateral manner. The cost of such an organization would far exceed that of IAEA verification, however, and this high expense would likely endanger a future treaty's success. Furthermore, with the available cost estimates and studies for FMCT verification between 10 and 20 years old as of this writing, technical studies for verification options and costs would need to be updated with a view to reducing expenses through new technologies and approaches.

The United Nations scale of assessment was proposed as a baseline for evaluating the verification costs of a future treaty. At the same time, it was recalled that any increase in the IAEA safeguards budget would likely result in a demand, especially by the Group of 77 developing countries, for equal spending increases for other parts of the Agency, such as the Department of Technical Cooperation.

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<sup>80</sup> IAEA cost estimates (1995 and updated in 2010) for a comprehensive verification system based on a country-by-country database of 995 facilities: \$140 million (more or less similar to the IAEA safeguards budget). According to a 2008 [study](#) by the International Panel on Fissile Materials, the cost of verification under an FMCT could be less than the IAEA safeguards budget based on reduced costs at reprocessing plants.

Some participants argued that the signatories of a future FMCT would be willing to pay additional verification costs in return for the treaty's net security benefits.<sup>81</sup> While they agreed that all States should contribute towards such benefits, it was noted that non-nuclear-weapon States already under IAEA safeguards would receive no benefit beyond the verification carried out in nuclear-armed States. In response to that concern, especially in light of the confidentiality of any verification-related information, it was suggested that the additional cost be covered either by current and former State producers of fissile material for weapons purposes or by all States parties based on the United Nations scale of assessments. In addition, because the universality of a future FMCT could be threatened by an added financial burden on States—especially smaller States with less or no interest in an FMCT—it was suggested that a measure of assessment other than the United Nations scale also be considered.<sup>82</sup>

### **Institutional arrangements and compliance**

Participants considered how legal and institutional arrangements should be designed to ensure credible and impartial treaty implementation and enforcement, including whether such implementation and enforcement should be undertaken by the IAEA or by a new organization. While there was general support for providing the IAEA with the additional authority to verify compliance, others felt that the treaty should

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<sup>81</sup> As an example, participants pointed to the financing of verification arrangements in South Africa following its 1991 accession to the Nuclear Non-Proliferation Treaty.

<sup>82</sup> An alternate scale could be of particular importance if a new global financial crisis resulted in failure by States to pay assessed contributions towards verification under a future treaty. On the other hand, it was pointed out that because States with nuclear weapons programmes may benefit commercially from currently not having to open all their facilities to verification, a future FMCT verification system could provide an incentive for non-nuclear-weapon States by helping to level the commercial playing field.

be served by its own governing body, technical secretariat and cadre of inspectors. In this context, it was pointed out that the IAEA Board of Governors would not legally be able to consider all FMCT-related issues, since obligations under a future treaty would exceed the IAEA Statute.

In considering how FMCT compliance could be monitored in cooperation with the IAEA, discussants made reference to parallel mechanisms such as the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials, as well as arrangements developed under the Joint Comprehensive Plan of Action. They also identified a need for specialized equipment not currently used by IAEA inspectors, although sharing some equipment with the Agency could produce significant cost savings.

There was also general agreement that concerns over possible non-compliance would have to be met on a time frame consistent with the potential threat, and formal findings of non-compliance should be referred to the Security Council and the General Assembly. However, it was also pointed out that because the Security Council's five permanent members (P-5) were nuclear-weapon States, non-compliance by any of those States would pose a serious threat to international peace and security. Such a scenario would require innovative approaches, such as a measure to prevent a veto by any P-5 member found by the FMCT governing body to be in non-compliance. Implementing such an approach may be complicated, however, given the provisions of the United Nations Charter.

### **Entry into force**

Participants were asked to consider whether a future treaty should enter into force based on ratification by a simple, unqualified number of States; by a specified number of States with production facilities lacking safeguards; or by a certain number, or all, States with enrichment and reprocessing capabilities. There was general agreement that the entry-into-

force clause should serve both to enhance the credibility of an FMCT and to ensure that the treaty became operational in at least those States that had already unilaterally halted production of fissile materials for weapons. It was also noted that a higher threshold for entry into force would provide greater opportunity to develop needed safeguards provisions and techniques.

The entry-into-force provisions of the Chemical Weapons Convention (180 days after ratification by 65 unnamed States but not earlier than two years after opening for signature) were considered preferable to those of the Comprehensive Nuclear-Test-Ban Treaty (180 days after ratification by 44 States listed by name). However, it was considered important for a significant number of States, including at least a minimum number of States with nuclear weapons, to ratify a future treaty as a prerequisite for its entry into force. Others felt that for an FMCT to be effective, all States with nuclear weapons would need to ratify the treaty as a requirement for its entry into force. A purely numerical option would not be optimal for ensuring credibility, nor would any formula giving nuclear-armed States a de facto veto over the treaty's entry into force. A hybrid formulation, suggested as one alternative, could combine a numerical number of States (e.g., 45) with a minimum number of States with nuclear weapons (e.g., 5).

### **Possible establishment of a group of scientific experts**

In view of the important role played by the Group of Scientific Experts of the Comprehensive Nuclear-Test-Ban Treaty in establishing the International Monitoring System for that treaty's future verification regime, participants were asked to consider whether a similar group could help cut through some of the political and technical obstacles that had prevented negotiations on an FMCT for more than 20 years. A variety of opinions were shared in this regard, including comments that the technologies to verify compliance with a future FMCT already existed, unlike the verification technologies that the Group had to identify and develop for the Comprehensive

Nuclear-Test-Ban Treaty's International Monitoring System. Other participants, however, were of the view that an FMCT group of scientific experts could meet a similar need by focusing not only on the modalities of an FMCT verification system, but more importantly on maintaining momentum towards a treaty following the conclusion of the Group of Governmental Experts and the High-level Fissile Material Cut-off Treaty Expert Preparatory Group.





## VI. Conclusions

Based on the presentations and discussions of the regional events, the coordinators of the European Union-UNODA project have drawn the following conclusions for future consideration:

- i. Measured against the goals of the project and the envisaged results of the consultative process, the regional workshops, expert meetings and in-country visit can be said to have successfully provided participants with a detailed background and understanding of the possible elements of a future FMCT in order to facilitate participation by States in future negotiations. Moreover, the consultations further enhanced dialogue among representatives from Governments, regional organizations, academia and civil society in the three target regions on a possible future treaty, including its relevance and potential contribution to nuclear disarmament and non-proliferation. Participants at all of the events benefited from expert briefings on the possible elements of a future treaty, including insights on the respective work of the Conference on Disarmament, the Group of Governmental Experts and the High-level Fissile Material Cut-off Treaty Expert Preparatory Group. In addition, each event offered participants the opportunity to share national views and exchange ideas with a variety

of government officials and academic experts on elements that could be covered by a future treaty, challenges facing the negotiations and ways ahead. Against this background, the European Union initiative to sponsor the joint European Union-UNODA project was useful and widely welcomed.

Furthermore, given the limited expertise of many States from the regions concerned on issues related to a future FMCT, the combined results of the regional events and the reports of the Group of Governmental Experts and the High-level Fissile Material Cut-off Treaty Expert Preparatory Group served to enhance knowledge about and interest in the need for and elements of a possible future treaty, potentially contributing over time to traction on the matter in the three targeted regions. While the reports and recommendations of the Group of Governmental Experts and the Expert Preparatory Group showed limited direct impact on views in the targeted regions, the European Union Council Decision 2017/2284 project facilitated valuable discussions between members of these groups, other FMCT experts and a wide range of regional participants from Governments, regional organizations and civil society.

- ii. The outcome of the project was more nuanced with regard to its goals of (i) helping States in the targeted regions to develop a sense of ownership of the FMCT issue as a matter of importance and continued relevance, and (ii) identifying national needs and policy priorities of States in these regions. In the regional expert meetings, the participants from States members<sup>83</sup> of the Conference on Disarmament expressed differences on the scope of the future treaty that were as evident as those shared in the Conference

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<sup>83</sup> These participants included experts from States with nuclear weapons (i.e., China, India and Pakistan), as well as from Australia, Brazil, Japan, Kazakhstan and South Africa.

on Disarmament. In addition, for participants from many smaller countries in Africa, in the Pacific and in Latin America and the Caribbean, a future FMCT was seen as less important than long-held priorities such as supporting nuclear-weapon-free zones, the Comprehensive Nuclear-Test-Ban Treaty, the Treaty on the Prohibition of Nuclear Weapons and the Arms Trade Treaty; pursuing peaceful applications of nuclear energy and nuclear science; and advancing other security and socioeconomic aims.

From the perspective of the three targeted regions, an FMCT remained an unfulfilled promise made in the context of the indefinite extension of the Nuclear Non-Proliferation Treaty and its 2000 and 2010 Review Conferences. In this context, promoting a new treaty was not considered relevant in light of constraints within the United Nations disarmament machinery and the broader erosion of the nuclear disarmament and non-proliferation regime, including through the collapse of several existing agreements. In the words of one regional expert, “In a few years, there might not be any arms control treaties left.”

- iii. Participants from many States in the targeted regions did not appear to share the emphasis of the Group of Governmental Experts, the High-level Fissile Material Cut-off Treaty Expert Preparatory Group and other stakeholders on promoting the negotiation of an FMCT specifically within the Conference on Disarmament, as the Conference on Disarmament was not believed to account for the shifting priorities and interests of non-States members. While every project event specifically addressed possible avenues to further advance a future treaty at the regional and international levels, most participants from non-nuclear-weapon States in the targeted regions were not members of the Conference on Disarmament and did not consider engagement on an FMCT by their countries to be a high priority.

Consequently, the negotiating forum for a future treaty seemed to pose an even bigger stumbling block to talks than differences over their scope. Considering that the Comprehensive Nuclear-Test-Ban Treaty, the most recent treaty negotiated in the Conference on Disarmament, was still not in force some 25 years after its negotiation, and more than 20 years had passed without any meaningful negotiations on an FMCT, continued calls for an FMCT to be negotiated within the Conference on Disarmament in accordance with the Shannon report and the mandate contained therein were not seen as necessarily productive, and advocacy to this end would not be considered a useful allocation of resources and time for the majority of States from the targeted regions. For these reasons, seeking the negotiation of an FMCT in the context of the General Assembly, or elsewhere, may result in more interest and participation from States in the three targeted regions.

On the other hand, some experts emphasized that the current format and rules of procedure of the Conference on Disarmament remained attractive to the States that would be most affected by an FMCT, and these States appeared unlikely to participate in negotiations that do not operate by the principle of consensus of the Conference on Disarmament. Therefore, stakeholders could consider moving negotiations on an FMCT outside the context of the United Nations to a diplomatic conference based on consensus decision-making procedures.

- iv. None of the regional organizations represented in the consultations expected to change their priorities in order to advance negotiations on an FMCT.<sup>84</sup> All of these organizations instead indicated that their priorities were

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<sup>84</sup> While organizations such as CARICOM, CELAC and AFCONE addressed nuclear disarmament and non-proliferation issues on behalf of their member States in Africa and in Latin America and the Caribbean, there were no regional organizations taking a comparable focus in Asia and the Pacific.

driven by the interests of their members, which in the nuclear area pertained primarily to nuclear disarmament, nuclear-weapon-free zones and peaceful uses of nuclear energy.

- v. Given the relatively low level of interest in an FMCT expressed within these regions, there was no sufficient data to inform a comparative analysis of the implications of the process for each region.

Moreover, none of the regions was homogenous with respect to nuclear statuses and interests. Asia and the Pacific, for example, includes States that possess nuclear weapons, as well as countries covered under extended nuclear deterrence commitments by the United States. In Africa, there was overlap with Middle East concerns, especially as they related to Israel and the Islamic Republic of Iran. In both Africa and Latin America and the Caribbean, most countries saw the entry into force of the Treaty on the Prohibition of Nuclear Weapons and the Comprehensive Nuclear-Test-Ban Treaty as more important than an FMCT. As already noted, with the exception of a few countries in each region, most regional States and organizations did not consider a future FMCT to have much relevance for them compared to other security and socioeconomic priorities. Most of the consulted States believed that the narrow interpretation of the Shannon report and the mandate contained therein was outdated, and any future treaty must include both non-proliferation and disarmament objectives to be relevant to them. While not a unanimous position within all three regions, the vast majority of participants favoured a treaty that would prohibit not just future fissile material production for military purposes but also material declared in excess of military requirements.

- vi. The cost of creating and implementing a new verification system would be much higher than indicated by the

existing studies on this matter, which were two decades old as of this writing.

Furthermore, the cost of verification would be significantly greater for any treaty that included all fissile material declared in excess of military requirements, as well as associated facilities. States possessing production facilities in the targeted regions appeared unlikely to be willing to bear the burden of this cost; based on feedback from participants in the three regions, most of these countries would question the need for the additional expense.

From the perspective of many States in these regions, the production of fissile material for military purposes was a problem created by countries that currently or formerly possessed these facilities, and these States should therefore carry the financial burden for implementing a treaty designed to verify activities in only nine countries. Most States in the regions consulted would favour applying resources towards peaceful uses of nuclear energy and science, in particular nuclear medicine.

- vii. Despite the above concerns, it would be incorrect to conclude that the international community's decades-old aspiration to establish a multilateral instrument to ban the production of fissile material for military purposes is no longer viable. Interest in a future FMCT remains strong, even among individual countries in the three targeted regions. European Union Council Decision 2017/2284 and the reports of the Group of Governmental Experts and the High-level Fissile Material Cut-off Treaty Expert Preparatory Group served not only to further enhance knowledge of and interest in the need for a future treaty but also to stimulate interest among governmental, intergovernmental and civil society participants in these regions. The longer-term regional impact of the investment in the European Union-UNODA project—not to mention the related roles of the Group of Governmental Experts and

the Expert Preparatory Group reports—remain to be seen. However, any future initiatives aimed at enhancing support for an FMCT should be undertaken with recognition that, for many countries, other issues have assumed higher priority.

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