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A Middle East Free of Weapons of Mass Destruction: A Utopia?

By Pierre Goldschmidt, Commentary by
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Cover image: A bulldozer crushes casings of chemical weapons in Iraq, 1991 (credit: UNSCOM).

A Middle East Free of Weapons of Mass Destruction: A Utopia?

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The Nonproliferation Policy Education Center (NPEC), a 501(c)3 nonprofit organization, is a nonpartisan, educational organization founded in 1994 to promote a better understanding of strategic weapons proliferation issues. NPEC educates policymakers, journalists, and university professors about proliferation threats and possible new policies and measures to meet them.

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Preface

Henry Sokolski

November 2023

Earlier this summer, well before Hamas launched its raids against Israel, Pierre Goldschmidt, the International Atomic Energy Agency's (IAEA's) former Deputy Director for Safeguards, sent me an analysis of how to approach creating a nuclear weapons free zone in the Middle East. I agreed to publish it along with a commentary by Ariel Levite, the former Deputy Director of Israel's Atomic Energy Commission.

My thinking at the time was that the greater Middle East was at a critical juncture. Either the number of states in the region having nuclear weapons or nuclear weapons options will increase or the number will be frozen or decline. Saudi Arabia, Iran, the UAE, Turkey, Egypt and Algeria will either become Israel's nuclear equal (or come within weeks of doing so) or they will forgo the option. In any case, creating a nuclear weapons free zone in the region has been promoted for nearly a half century and is sure to be an issue in the upcoming Nuclear Nonproliferation Treaty Review Conference and Preparatory Committee meetings scheduled through 2026.

Yet, many analysts have dismissed going to zero nuclear weapons in the region as unrealistic. Certainly, with Israel so embattled, any movement toward creating a zone now will take even longer. On the other hand, current developments also suggest time may not be on anyone's side.

Less than a month after Hamas' first incursions, not one, but two elected Israeli parliamentarians, including a junior member of Israel's cabinet, publicly recommended Israel use its nuclear weapons against Hamas in Gaza. Meanwhile, Saudi Arabia's Crown Prince has fielded growing concerns that Iran might quickly get nuclear weapons by repeating his earlier public threat to acquire nuclear weapons if Tehran does.

In an effort to deflect this threat and to "stabilize" the region, the Biden Administration wants the Saudis to join the Abraham Accords. As a part of any such deal, the Crown Prince, though, has demanded that the United States green-light Saudi efforts to pursue a "peaceful" uranium enrichment program. This would effectively give the Kingdom a nuclear weapons option and would catalyze nuclear hedging throughout the greater Middle East.

It's unclear if such racing can be curbed in time. Pierre Goldschmidt lays out an incremental approach towards creating a weapons free zone in the region. Ariel Levite clarifies many of the serious reservations about proceeding now that most Israelis would likely have. Each makes

points worth our attention. The hurdles are real but so are the risks of not trying to surmount them.

One unmentioned point that is critical to any movement toward nuclear restraint in the region, fortunately, is entirely under U.S. control — official admission that Israel actually has nuclear weapons. U.S. citizens who currently hold security clearances must comply with a regulation that prohibits them from publicly mentioning, orally or in print, that Israel has nuclear arms. Yet, until American officials publicly recognize what elected Israeli officials and everyone in the region knows and has acknowledged — that Israel possesses nuclear arms — they will not be taken seriously on this topic.

This matters to any talks on nuclear arms in the region: America is the Middle East's most important outside actor, Israel's staunchest supporter, and the wealthiest and most powerful nation in the world. It's hoped that this monograph on how to move toward a nuclear free zone might at least help end this unnecessary official self-restraint.

A Middle East Free of Weapons of Mass Destruction: A Utopia?

Pierre Goldschmidt¹

July 2023

“Progress is the realization of utopias.”

Oscar Wilde

A. Introduction

Next year, it will be 50 years since the “Establishment of a nuclear-weapon-free zone in the Middle East” was first placed on the agenda of the United Nations General Assembly, at the request of Iran (under the Shah), later joined by Egypt (under President Anwar Sadat).²

In 1995, as part of a package of decisions that resulted in the indefinite extension of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), the NPT Review Conference called “*upon all States in the Middle East to take practical steps in appropriate forums aimed at making progress towards, inter alia, the establishment of an effectively verifiable Middle East zone free of weapons of mass destruction, nuclear, chemical and biological, and their delivery systems.*”³

At the 2010 NPT Review Conference, state parties agreed to work together with the UN Secretary General to convene a regional conference to discuss the issue in 2012.

The regional conference was set to be held in Finland in December 2012, and Finnish Undersecretary of State Jaakko Laajava was named as the facilitator. Although he worked tirelessly to convene this Conference in Helsinki, it never took place.

The failure of the 2015 NPT Review Conference to produce a final document, although disappointing, was not a surprise. As formulated by Andrey Baklitskiy, “*the issue of the creation*

1. Former Deputy Director General of the International Atomic Energy Agency (IAEA) and Head of its Department of Safeguards.

2. A/9693/Add.1.

3. Resolution on the Middle East. NPT/CONF.1995/32 (Part I)

https://unoda-web.s3-accelerate.amazonaws.com/wp-content/uploads/assets/WMD/Nuclear/1995-NPT/pdf/Resolution_MiddleEast.pdf

of a zone free of weapons of mass destruction in the Middle East was the straw that broke the camel's back in 2015.”⁴

As for the 2020 NPT Review Conference, postponed until August 2022 because of the Covid-19 pandemic, it failed to make any headway.

Although no guarantee of success can be given, it is obvious that the talks must continue.

After defining what constitutes a Weapons of Mass Destruction (WMD) free zone, this study analyzes what would be included in a Nuclear Weapons Free Zone (NWFZ) Treaty and how it would be verified.

The first issue considered is to determine which states should initially be included in the WMD free zone.

The next question is to find out under which conditions could Israel possibly join such a zone and give up its alleged weapons of ultimate deterrence, something that none of the NWSs have agreed to do so far notwithstanding their NPT commitment.

This will lead to considering what kind of IAEA safeguards-related measures would be applicable in the NWFZ, and which other commitments, unrelated to IAEA safeguards, would be included in the zone Treaty.

Finally, we will consider the very delicate question of the sequence of events leading to the IAEA verification of Israel's disarmament and to the entry into force of the NWFZ Treaty.

This study demonstrates that achieving a WMD free zone in the Middle East will be a long and difficult process. It also indicates that there is an indispensable need to move from grand visions and rhetorical declarations to concrete discussion about what would be included in the zone treaty, how it would be verified, and how enforcement and disarmament would take place. It identifies a number of practical win-win confidence-building measures that could be taken on the road towards a WMD free zone in the Middle East.

B. What Is a Weapons of Mass Destruction Free Zone?

There is no official definition of what constitutes a WMD free zone, and there is no precedent of such a zone anywhere in the world.

For the purposes of this study we will assume that a WMD free zone is a Nuclear Weapons Free Zone (NWFZ) and that all the parties to that zone have ratified the Chemical Weapons

4. The 2015 NPT Review Conference and the Future of the Non-proliferation Regime.

<https://www.armscontrol.org/act/2015-07/features/2015-npt-review-conference-future-nonproliferation-regime#bio>

Convention and the Biological and Toxin Weapons Convention.⁵ That definition does not address the very difficult issue of the limitations on means of the delivery of such weapons.

B.1. The Biological and Toxin Weapons Convention (BTWC)

The BTWC is a legally binding treaty that entered into force in 1975. It outlaws biological arms and commits the states-parties to prohibit the development, production, and stockpiling of biological and toxin weapons. It has been ratified by 183 states. Egypt, Haiti, Somalia, and Syria have signed but not ratified the BTWC. Ten states have neither signed nor ratified the Convention among which Israel.⁶

The major weakness of the BTWC is the absence of any formal verification regime to monitor compliance which limits its effectiveness. In case of a compliance issue that cannot be resolved bilaterally or multilaterally, states-parties may lodge a complaint for violation of the Convention with the UN Security Council. The Security Council can investigate the complaint, but this has never occurred.

B.2. The Chemical Weapons Convention (CWC)⁷

The CWC has been ratified by 193 states-parties, including Iraq in 2009 and Syria in December 2013.

Israel signed the Convention in 1993 but has yet to ratify it. Three states have neither signed nor ratified the convention: Egypt, North Korea and South Sudan (which, as a new state, has not yet had time to do so).

Syria's declared stockpile of chemical weapons has been destroyed following Syria ratification of the CWC in 2013. However, undeclared chemicals still exist and there is no projected timeline for their destruction. Unfortunately, Syria's accession to the treaty didn't stop the use of chemical weapons in Syria. In April 2020, the Organisation for the Prevention of Chemical Weapons (OPCW) issued a report blaming the Syrian air force for a series of chemical attacks using sarin and chlorine in late March 2017 on the central town of Latamneh.

5. These two Conventions have some loopholes, and it is therefore not certain that their ratification would be sufficient to reassure all the parties to the WMDFZ.

6. The other states are Chad, Comoros, Djibouti, Eritrea, Kiribati, Micronesia and Tuvalu.

7. https://www.opcw.org/sites/default/files/documents/CWC/CWC_en.pdf

A major challenge for the CWC is that while highly toxic chemicals such as chlorine and phosgene can be used as chemical weapons, chlorine is widely used for industrial purposes and phosgene in agriculture. It is therefore extremely difficult to regulate their use.

The CWC provides that in cases of particularly serious violation, the issue shall be brought to the attention of the UN General Assembly and the UN Security Council.

Israel has so far been reluctant to ratify the CWC due to an unwillingness to grant OPCW inspectors access to its military bases. It has been stated that Israel would ratify the Convention if Egypt does,⁸ and that Egypt has indicated that it will ratify the CWC only if Israel ratifies the NPT.⁹

Egypt and Israel should nonetheless be encouraged to simultaneously ratify the CWC (which Israel has already signed). Considering the fact that the other states-parties to the WMDFZ have already ratified the CWC, this would constitute a major achievement. As stated by Mark Fitzpatrick: Egypt and Israel “have absolutely no need to possess chemical weapons and for which use would go against their moral code.”¹⁰

C. A Multi-Stage Approach to a NWFZ Treaty in the Middle East

Existing NWFZ have been established to a large extent on the basis of trust between the states-parties.

This is in stark contrast to the situation prevailing in the Middle East which is characterized by distrust, and political and economic rivalry exacerbated by religious differences and sectarianism.

Israel and Syria are formally in a state of war. Iran does not recognize the existence of Israel. Turkey is fighting the Kurds in Syria which may become a battleground between Israel and Iran. Although Saudi Arabia and Iran agreed to resume relations in March 2023, their difference of political ideologies and governance will remain. Even if negotiations to establish diplomatic relations between Saudi Arabia and Israel are ongoing, Saudi Arabia has not yet recognized the State of Israel.

Under such conditions, a treaty establishing a NWFZ in the Middle East will be significantly different from those existing today (see Appendix 1) if only because it would be unimaginable to see inspectors from some states-parties undertaking fact-finding missions in other states-

8. although it is not sure that this reflects Israel's position.

9. “Why ratifying the Chemical Weapons Convention is in Israel’s best interest”, The Conversation, September 8, 2016. <https://theconversation.com/why-ratifying-the-chemical-weapons-convention-is-in-israels-best-interest-63889#:~:text=Israel%20says%20it%20will%20only,ambiguity%20about%20its%20nuclear%20capability.>

10. <https://www.iiss.org/blogs/survival-blog/2019/05/wmd-free-zone-middle-east>

parties to resolve a situation which may give rise to doubts about compliance with the provisions of the Treaty.

The paper will discuss: (1) the geographical delineation of the Zone; (2) why would Israel wish to join a NWFZ in the Middle East; (3) what would be included in the NWFZ Treaty; (4) how the IAEA could verify Israel's nuclear disarmament; and (5) how would the NWFZ Treaty come into force.

C.1. Which States Should Be Included in the Middle East Zone?

The political challenges to establishing a Middle East NWFZ become apparent when considering a seemingly simple and technical question: which countries should be included in the zone?

One approach is to follow the IAEA definition of the Middle East region, which comprises the 22 state-members of the Arab League plus Iran and Israel.¹¹ This is also the definition used in the Draft Final Document of the 2015 NPT Review Conference.¹² It differs, however, from the more commonly understood definition of the Middle East that includes the following sixteen states: Bahrain, Cyprus, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, Turkey, the United Arab Emirates, and Yemen.

The latter definition of the region is more logical than the one adopted by the United Nations and the IAEA. Indeed, it is hard to understand why, for example, the Comoros and Mauritania - but not Turkey (which has a border with Iran, Iraq and Syria) - should be considered as part of the Middle East. Moreover, since Algeria, Libya, and Tunisia (as well as the Comoros and Mauritania) have ratified the Pelindaba Treaty, attempting to include them in a Middle East NWFZ would add complications but no value.

In order to avoid an unnecessary debate about the definition of the Middle East, instead of considering the creation of a NWFZ in the whole Middle East, we will consider hereafter the establishment of a NWFZ limited to the following 14 states: Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, the United Arab Emirates, and Yemen.

11. International Atomic Energy Agency, "Application of IAEA Safeguards in the Middle East," Report by the Director General at the Board of Governors General Conference, September 2, 2011, (footnote 1)..

https://www.iaea.org/About/Policy/GC/GC55/GC55Documents/English/gc55-23_en.pdf.

12. 2015 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, "Draft Final Document: Volume I", May 21, 2015.

<http://www.reachingcriticalwill.org/images/documents/Disarmament-fora/npt/revcon2015/documents/DraftFinalDocument.pdf>, foot-note 2, page22.

Including Turkey might be required in particular by Israel since in the fall of 2019, Turkish President Recep Tayyip Erdoğan suggested that Turkey might be questioning its stance with regard to nuclear weapons:

“Several countries have missiles with nuclear warheads, not one or two. But [they tell us that] we can’t have them. This I cannot accept.”¹³

This was clearly a reference to Israel and its undeclared nuclear arsenal. While President Erdoğan’s statement may have been political posturing, it is an indication that the situation in Turkey may be more volatile than in the past and could change quickly if, for instance, Iran was to withdraw from the NPT.

Given that Turkey is a member of NATO hosting nuclear weapons on its territory, including Turkey in the NWFZ, while making a lot of sense, would significantly complicate the issue.

Except for the situation concerning Turkey, the geographical coherence and logic of the proposed nuclear-weapon-free zone are clearly shown on the following map¹⁴:



13. “Turkey Shows Nuclear Weapons Interest”, ACA, October 2019

<https://www.armscontrol.org/act/2019-10/news/turkey-shows-nuclear-weapons-interest>

14. https://www.google.com/search?q=map+of+the+middle+east&rlz=1C1MSAA_enBE682BE682&sxsrf=ALeKk02qqbJ65xsrNmca6JQFnsrtiM8tLA:1593536870397&tbm=isch&source=iu&ictx=1&fir=zu_VNE6pHW1JHM%252Cqr5drqOGcbIkJM%252C_&vet=1&usg=AI4_-kSbV6ASQ5VvNpbCfh-errrvqgxQ_Q&sa=X&ved=2ahUKEwiJp-K4g6rqAhXN_aQKHd90Au8Q9QEwAnoECAYOIA&biw=1920&bih=969#imgrc=j7ebPht0g9KNLM

The status of the relevant nuclear-related agreements of these states is today as follows:

State	SQP (1)	Mod SQP (2)	CSA (3)	AP (4)	Broader Conclusion (5)	CTBT (6)	CPPNM (7)	CPPNM- A (8)
Bahrain		V				V	V	V
Egypt			V	No (9)		Signed	No	No
Iraq			V	V		V	V	No
Iran			V	Signed		Signed	No	No
Israel			(10)			Signed	V	V
Jordan			V	V	V	V	V	V
Kuwait		V			V	V	V	V
Lebanon		V				V	V	
Oman	V					V	V	
Qatar		V				V	V	V
Saudi Arabia	V	No (11)				No	V	V
Syria			V	No		No	V	V
UAE			V	V		V	V	V
Yemen	V					Signed	V	

(1) A Small Quantities Protocol (SQP) safeguards agreement waives a number of articles included in a full Comprehensive Safeguards Agreement (CSA). While this limited safeguards system might have been justifiable when it was agreed to by the IAEA Board of Governors in 1974, it is entirely inadequate in today's environment. For instance, an "SQP State" would be entitled to procure equipment for a centrifuge enrichment facility and to build such a facility without having to declare these activities until 6 months before introducing nuclear material in that facility.

(2) In 2005, the IAEA Board of Governors recognized that the SQP in its original form constituted a weakness in the IAEA safeguards system and decided to make an SQP unavailable to a State with an existing or planned

nuclear facility. The Board published a modified SQP (Mod SQP)¹⁵ which, inter alia, requires the State to submit to the IAEA an initial report on all nuclear material and to notify the IAEA as soon as a decision has been taken to construct or to authorize construction of a nuclear facility.

(3) CSA = IAEA Comprehensive Safeguards Agreement (Infcirc/153 corrected). Under a CSA, the IAEA has the right and obligation to ensure that safeguards are applied on all nuclear material in the territory, jurisdiction, or control of the State for the exclusive purpose of verifying that such material is not diverted to nuclear weapons or other nuclear explosive devices.

(4) AP = Additional Protocol (Infcirc/540 corrected). Under the Additional Protocol, the IAEA is granted expanded rights of access to information and locations in the States. For States with a CSA, the Additional Protocol aims to fill the gaps in the information reported under a CSA. By enabling the IAEA to obtain a much fuller picture of such States' nuclear programs, plans, nuclear material holdings and trade, the Additional Protocol increases the IAEA's ability to provide much greater assurance on the absence of undeclared nuclear material and activities in those States.¹⁶

(5) The "broader conclusion" represents the determination by the IAEA that it not only "found no indication of the diversion of declared nuclear material from peaceful nuclear activities" but also found "no indication of undeclared nuclear material or activities", and that "on this basis, the Secretariat concluded that, for these States, all nuclear material remained in peaceful activities."¹⁷ This conclusion cannot be drawn for countries with no AP in force.

(6) CTBT = Comprehensive Nuclear-Test-Ban Treaty.¹⁸

(7) The Convention on the Physical Protection of Nuclear Material (CPPNM) was adopted in October 1979 and came into force in February 1987.¹⁹

(8) On 8 July 2005, the Parties to the CPPNM adopted by consensus an Amendment which entered into force on 8 May 2016. "Whereas the obligations for physical protection under the CPPNM covered nuclear material during international transport, the Amendment to the CPPNM makes it legally binding for states-parties to protect nuclear facilities and material in peaceful domestic use, storage and transport. It also provides for expanded cooperation between and among States regarding rapid measures to locate and recover stolen or smuggled nuclear material, mitigate any radiological consequences of sabotage, and prevent and combat related offences."²⁰

(9) Egypt which has one of the most advanced nuclear programs in the region, has not signed the Additional Protocol, making it impossible for the IAEA to draw the broader conclusion. It has also refused to join the African Nuclear-Weapon-Free Zone (the Pelindaba Treaty).²¹

15. GOV/INF/276/Mod.1 and Corr.1 https://www-pub.iaea.org/MTCD/Publications/PDF/svs22_web.pdf

16. <https://www.iaea.org/topics/additional-protocol>

17. <https://www.iaea.org/sites/default/files/19/06/statement-sir-2018.pdf>

18. <https://www.ctbto.org/our-mission/the-treaty>

19. https://media.nti.org/documents/cppnm_membership.pdf

20. <https://www.iaea.org/publications/documents/conventions/convention-physical-protection-nuclear-material-and-its-amendment>

21. It is also worth noting that, since at least 2006, the Muslim Brotherhood has called for Egypt to develop its own nuclear deterrent: "We [Egyptians] are ready to starve in order to own a nuclear weapon that will represent a real deterrent and will be decisive in the Arab-Israeli conflict. — *Dr. Hamdi Hassan, Spokesman, Muslim Brotherhood Parliamentary Caucus, 2006.*" Egypt: The Muslim Brotherhood Bomb? by Raymond Stock September 7, 2012. <https://www.meforum.org/3335/egypt-muslim-brotherhood-bomb>

(10) “The IAEA applies safeguards in Israel pursuant to an INFCIRC/66-type safeguards agreement of 4 April 1975 concluded between the IAEA, Israel and the United States of America (INFCIRC/249) which was extended by a Protocol of 28 September 1977 (INFCIRC/249/Add.1).” Pursuant to this safeguards agreement, “the IAEA applies safeguards to Israel’s research reactor located at the Soreq Nuclear Research Centre (SNRC) operated by the Israel Atomic Energy Commission. It was supplied by the USA and reached criticality first in June 1960. Other nuclear facilities under safeguards include a uranium storage facility and a heavy water and material storage facility, both at the SNRC.”

(11) Saudi Arabia’s old-style SQP was the very last to be approved by the IAEA Board of Governors in June 2005. It did not enter into force until January 2009²² (while, according to Article III.4 of the NPT, it should have been concluded within 18 months after Saudi Arabia ratified the NPT in 1988).

On September 14, 2020, IAEA Director General Rafael Grossi told the Agency’s Board of Governors: “*In 2020, the old standard SQP is simply not adequate*” and on June 5, 2023, he told the Board “*I reiterate my call for States with small quantities protocols (SQP) based on the old standard text to amend or rescind them.*”²³

In the IAEA Safeguards Statement for 2022, it is written that “*the Agency may no longer be able to draw a safeguards conclusion for such States unless the States concerned respond positively to the repeated calls by the Director General to amend or rescind such SQPs.*”

Considering that, since 2011, Saudi Arabia has signed nuclear cooperation agreements with France, South Korea, China, Russian Rosatom, Kazakhstan and others, and that a 30 kWt low power research reactor is under construction in Riyadh by Argentina’s INVAP²⁴, it should not only rescind its “old-SQP” but sign and ratify a CSA.

Also, Saudi Arabia insists it will not accept the so-called nuclear gold standard, a promise to refrain from enriching or reprocessing, to which neighboring United Arab Emirates (UAE) agreed in its bilateral agreement for civil nuclear cooperation with the United States.²⁵

In an interview that aired August 6, 2012, on Al Tahrir TV, a retired Egyptian army general, Abdul-Hamid Umran said that Egypt should obtain nuclear weapons to deter Israel and few days later he repeated the sentiment, stating: “We should follow the Iranian model and deceive the international community.”

<https://www.memri.org/reports/retired-egyptian-general-abd-al-hamid-umran-egypt-should-obtain-nuclear-weapons-deter-israel> and <https://www.memri.org/tv/retired-egyptian-general-abd-al-hamid-umran-calls-egyptian-nuclear-program-we-should-follow>

None of the above statements calling for nuclear weapons reflect the official position of Egypt; nonetheless, one should not forget that Mohamed Morsi, who was a leader of the Muslim Brotherhood, has been President of Egypt from June 2012 to July 2013. It shows how rapidly things can change.

22. <https://www.iaea.org/sites/default/files/20/01/sg-agreements-comprehensive-status.pdf>

23. <https://www.iaea.org/newscenter/statements/iaea-director-generals-introductory-statement-to-the-board-of-governors-5-jun-2023>

24. The project was officially launched in November 2018, when construction was reported to be well under way. <https://world-nuclear.org/information-library/country-profiles/countries-o-s/saudi-arabia.aspx>

25. <https://www.armscontrol.org/act/2019-10/features/nonproliferation-gold-standard-new-normal>

C.2. Why Would Israel Wish to Join a NWFZ in the Middle East?

The only precedent of a non-NPT state possessing nuclear weapons that voluntarily decided to eliminate its nuclear arsenal and then joined the NPT as a Non-Nuclear-Weapon State (NNWS) is South Africa.

It is likely that, if Israel voluntarily decides to become a NPT-NNWS, it will follow the South African pathway, and would eliminate its nuclear weapons and destroy all nuclear-weapons-related facilities before joining the NPT and the Zone Treaty and allow the IAEA to verify that there are no undeclared nuclear material and facilities in the country.

As foreseen under Article 6 of the Pelindaba Treaty, each party to a NWFZ in the Middle East would have, inter alia:

- (a) To declare any capability for the manufacture of nuclear explosive devices;
- (b) To dismantle and destroy any nuclear explosive device that it has manufactured prior to the coming into force of this Treaty;
- (c) To destroy facilities for the manufacture of nuclear explosive devices or, where possible, to convert them to peaceful uses.

A major problem is that once Israel has complied with those almost irreversible requirements, any of the other parties to the zone could sooner or later “in exercising its national sovereignty, have the right to withdraw from this Treaty” by giving an advanced notice of maximum 12 months.²⁶

This eventuality will not be taken lightly by Israel. Iran has threatened to withdraw from the NPT on several occasions. The seriousness of this possibility is underscored by the IAEA’s past findings that, “Iran has carried out activities relevant to the development of a nuclear explosive device.”²⁷

In May 2006, in a letter to United Nations Secretary General Kofi Annan, the Iranian parliament threatened to force the government to withdraw from the NPT if the United States and its allies continued pressuring Tehran to suspend uranium enrichment.²⁸

26. It is important to note that withdrawal clauses are included in all international treaties. For instance, each State Party to the NPT can withdraw from the Treaty by giving a notice of withdrawal to all other Parties to the Treaty and to the UN Security Council 3 month in advance.

27. IAEA Board of Governors, “Implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions in the Islamic Republic of Iran”, GOV/2011/65, November 8, 2011, para. 53. The report contains a 12-page Annex describing the weaponization activities undertaken by Iran, including the development of fast-acting detonators; initiation of high explosives and associated experiments; hydrodynamic experiments; studies involving the modeling of spherical geometries, consisting of components of the core of an HEU nuclear device subjected to shock compression; etc.

28. <https://eng-archive.aawsat.com/theaawsat/news-middle-east/iran-threatens-to-quit-nuclear-treaty>

Iran has since issued several similar threats, in particular after the United States' unilateral withdrawal from the Joint Comprehensive Plan of Action (JCPOA) in May 2018²⁹. More recently, on 20 January 2020, after Britain, France and Germany declared Iran in violation of the JCPOA and launched a dispute mechanism that could eventually see the matter referred back to the Security Council and the re-imposition of U.N. sanctions, Iranian Foreign Minister Javad Zarif, said: *"If the Europeans continue their improper behavior or send Iran's file to the Security Council, we will withdraw from the NPT."*³⁰

In 2011, Former Saudi Intelligence Chief Prince Turki Al-Faisal said that Saudi Arabia would have to develop nuclear weapons if Iran succeeded in acquiring them.³¹ And in 2018, Saudi Arabia's Crown Prince Mohammed bin Salman told CBS News that the Kingdom *"does not want to acquire any nuclear bomb, but without a doubt if Iran developed a nuclear bomb, we will follow suit as soon as possible."*³² Given the availability of technical support (e.g., from countries such as Pakistan) to begin developing uranium enrichment capabilities, such statements should not be regarded lightly.

A NWFZ anywhere in the world will reach its goal and survive in the long term only if it is perceived to be and remains a win-win agreement by all states-parties.

Egypt and Iran have been advocating the establishment of a NWFZ in the ME since 1974 in order to force Israel to give up its alleged nuclear arsenal and join the NPT as a NNWS. It is however doubtful that Egypt, which signed a peace treaty with Israel in 1979, still fears that Israel could **use** nuclear weapons against it, except, possibly, in the extreme circumstance where Israel's survival under a (possibly coordinated) attack from its neighbors (including Egypt) would be at stake.

This is precisely the case that was considered by the International Court of Justice in 1996 when it was asked for an advisory opinion on "Is the threat or use of nuclear weapons in any circumstance permitted under international law?" The court concluded, that

29. The JCPOA commonly known as "the Iran nuclear deal", is an agreement on the Iranian nuclear programme reached on July 14, 2015, between Iran and the five permanent members of the UN Security Council (China, France, Russian Federation, United Kingdom, United States) plus Germany (together with the European Union). It was unanimously endorsed on 20 July 2015 by the legally binding resolution 2231 of the UN Security Council.

30. https://www.reuters.com/article/us-iran-nuclear/iran-has-not-ruled-out-talks-to-end-nuclear-dispute-says-official-idUSKBN1ZJ0ML?mkt_tok=eyJpIjoiTURZMU1XTTRabUUwTjJWbCIiInQiOiJBak9tbkExWIB6aDk0Mlpyb2c0YmRDQtdEeE50N2FUTFZWRFZWR2xGXC9kRkd2U2ZBcTlyK1RKcDU0K1hlaU1UKzE1NHBDWxo2NUFzMjlKTUpCbG93dmtrb0ExYVRhdEpvRXgydm1QUWhicDFiRFBVSUZRD0p6ajMrUm4wMGFCTjhqbFwvIn0%3D

31. "Prince Turki: "We must obtain nuclear weapons too."
<https://defaiya.com/news/Regional%20News/KSA/2011/12/09/prince-turki-we-must-obtain-nuclear-weapons-too>

32. <https://www.reuters.com/article/us-saudi-iran-nuclear/saudi-crown-prince-says-will-develop-nuclear-bomb-if-iran-does-cbs-tv-idUSKCN1GR1MN>

“in view of the current state of international law, and of the elements of fact at its disposal, the Court cannot conclude definitively whether the threat or use of nuclear weapons would be lawful or unlawful in an extreme circumstance of self-defence, in which the very survival of a State would be at stake.”

The question is therefore to find out under which conditions could Israel possibly accept to give up its weapons of ultimate deterrence, something that none of the Nuclear Weapons States have agreed to do so far notwithstanding their NPT commitment.³³

Only Israel can validly answer that question. But it is interesting to consider what could possibly constitute a win-win scenario.

The first condition would be that all states-parties formally recognize the existence of the State of Israel and establish normal diplomatic relations with that country³⁴. In exchange Israel would likely be required to “*immediately and completely cease all settlement activities in the occupied Palestinian territory, including East Jerusalem*” as stipulated in December 2016 under UNSC resolution 2334.³⁵ At the same time, the other states-parties will have to commit to stop all military and financial support to Hezbollah³⁶ and Hamas.³⁷

At this stage nothing would be irreversible: diplomatic relations can be suspended overnight, and as Iran has demonstrated in the past even recognizing another state's existence can be reversed.³⁸

Before considering the dismantlement of any existing nuclear weapons or related facility, Israel would likely require that all the states-parties to the NWFZ adopt the so-called “nuclear gold standard” described below, a commitment strongly rejected by Iran, and other states of the region.

33. Moreover, the Strategic Concept for the Defense and Security of the Members of the North Atlantic Treaty Organization Adopted by Heads of State and Government at the NATO Summit in Lisbon 19-20 November 2010 states that:

17. Deterrence, based on an appropriate mix of nuclear and conventional capabilities, remains a core element of our overall strategy. The circumstances in which any use of nuclear weapons might have to be contemplated are extremely remote. As long as nuclear weapons exist, NATO will remain a nuclear alliance.

18. The supreme guarantee of the security of the Allies is provided by the strategic nuclear forces of the Alliance, particularly those of the United States; the independent strategic nuclear forces of the United Kingdom and France, which have a deterrent role of their own, contribute to the overall deterrence and security of the Allies.

34. That would imply in particular that, Syria and Israel conclude a peace treaty ending the formal state of war existing between the two nations. The faith of the occupied Golan would have to be dealt with at a later stage.

35. [https://undocs.org/Home/Mobile?FinalSymbol=S%2FRES%2F2334\(2016\)&Language=E&DeviceType=Desktop&LangRequested=False](https://undocs.org/Home/Mobile?FinalSymbol=S%2FRES%2F2334(2016)&Language=E&DeviceType=Desktop&LangRequested=False)

36. In 2016 the six-nation Gulf Co-operation Council has designated Lebanon's Hezbollah movement a terrorist group. <https://www.bbc.com/news/world-middle-east-35706761>

37. including a ban on the transfer of any type of rockets and missiles to non-state actors.

38. After the establishment of the State of Israel in 1948, Iran was the second Muslim-majority country to recognize Israel as a sovereign state after Turkey. In the immediate aftermath of the 1979 Iranian Revolution, Iran cut off all official and diplomatic relations with Israel which it refers to as the Zionist entity.

Despite today's extremely unfavorable political environment, for the purposes of this study, we will assume that the necessary preliminary diplomatic progress has been made, and we will examine what should be included in a Middle East nuclear-weapon-free zone treaty.

D. Content of a NWFZ Treaty in the Middle East

We will consider first what kind of IAEA safeguards-related measures would be applicable in the NWFZ, and then which other commitments, unrelated to IAEA safeguards, would be included in the Treaty.

D.1. IAEA Safeguards-Related Measures Applicable in the NWFZ

The Parties to the NWFZ Treaty would have to conclude with the IAEA and bring into force a CSA and an AP before the Treaty enters into force.

However, this will not be sufficient to convince all the states-parties that the IAEA can effectively and efficiently verify compliance with the Treaty's undertakings. Indeed, contrary to widespread belief, even the Additional Protocol does not provide the Agency “access at all times to all places and data and to any person...”, a right articulated in Article XII.A.6 of the IAEA Statute.

The Need for Broader Access Rights

Experience has taught us, that when a state is found to be in non-compliance with its safeguards agreements (or in breach of its obligation to comply with its safeguards agreements) and does not show full transparency and cooperation in resolving questions or inconsistencies with regard to its nuclear programme (both past and present), the Agency will temporarily need expanded verification rights going beyond those granted under a Comprehensive Safeguards Agreement and the Additional Protocol.

This was already clearly reflected in the IAEA's report of September 2005 on Iran, where it is stated:

“In view of the fact that the Agency is not yet in a position to clarify some important outstanding issues after two and a half years of intensive inspections and investigation, Iran's full transparency is indispensable and overdue. Given Iran's past concealment efforts over many years, such transparency measures should extend beyond the formal requirements of the Safeguards Agreement and Additional Protocol and include access to individuals, documentation related to procurement, dual use equipment, certain

military owned workshops and research and development locations. Without such transparency measures, the Agency's ability [...] to verify the correctness and completeness of the statements made by Iran will be restricted."³⁹

The IAEA has been investigating Iran's nuclear program for 20 years since it discovered in early 2003 that Iran did not disclose all its nuclear material and facilities in accordance with its Comprehensive Safeguards Agreement but has still not been able to draw the "broader conclusion."⁴⁰

Iran signed the AP in December 2003, but 20 years later there is no sign that it will be ratified by the Majles. Therefore, since 2003 Iran has implemented the AP, from time to time on a voluntary basis, and "provisionally" since the conclusion in July 2015 of the Joint Comprehensive Plan of Action (JCPOA).

Yet, on 9 March 2020, IAEA Director General Rafael Grossi stated that:

"The Agency has identified a number of questions related to possible undeclared nuclear material and nuclear-related activities at three locations that have not been declared by Iran. The Agency sought access to two of the locations. Iran has not provided access to these locations and has not engaged in substantive discussions to clarify the Agency's questions."⁴¹

Experience has demonstrated that denial of prompt access to locations has almost always been an indication of undeclared activities.

Broader and prompt access rights are all the more necessary that the IAEA Safeguards Implementation Report (SIR) for 2018 highlights the fact that:

"For Agency inspectors to conduct their verification activities effectively, they must be able to access installations and perform the verification activities within agreed timeframes. In 2018, access restrictions to locations, material, facility records and other relevant documentation were experienced in a number of States."⁴²

and also, that:

"Several States did not provide timely access for Agency inspectors or the equipment or services necessary to facilitate the conduct of verification activities; limited the scope

39. IAEA GOV/2005/67 para. 50 <https://www.iaea.org/sites/default/files/gov2005-67.pdf>

40. See paragraph 15 of the IAEA "Safeguards Implementation Report for 2018", GOV/2019/22, 6 May 2019. https://armscontrollaw.files.wordpress.com/2019/05/sir-2018_6may2019dstr.pdf

41. IAEA Director General's Introductory Statement to the Board of Governors, 9 March 2020 <https://www.iaea.org/newscenter/statements/iaea-director-generals-introductory-statement-to-the-board-of-governors-9-march-2020>

42. See para. 43. <https://www.iaea.org/sites/default/files/19/06/statement-sir-2018.pdf>

of activities during inspections, including by not permitting environmental sampling; or did not provide access for inspectors to conduct the necessary verification activities, as provided for in relevant safeguards agreements and as requested by the Agency. This included limitation of access to areas of facilities where nuclear material was not present and access to locations where the purpose of Agency activities was to assure the absence of undeclared nuclear material or activities.”⁴³

This unfavourable situation is largely due to the limitations of IAEA inspectors' access rights, not only under a CSA but also under the Additional Protocol. Some of the main AP access rights deficiencies can be summarized as follows⁴⁴:

- access to information: *the AP does not specify deadlines for States to respond to the Agency's requests.* The state should have to provide the Agency with the required information within 24 hours;
- access to persons: the Agency is not allowed to freely interview people working at nuclear facilities. This situation must be corrected by providing *access to individuals at their usual occupational location* or such other location deemed relevant by the Agency;
- access to locations: *there is no time limit for the state to provide the access requested by the Agency,* as experienced on many occasions by the IAEA. This must be corrected;
- access to data and documents: there is no obligation in the CSA or the AP for a state to submit, upon request by the Agency, the *original documents* supporting the state's declarations (possibly for forensic analysis) and to provide copies of any relevant document, nor the right for the Agency to access these documents at the location where they are normally used or stored. Also, there is *no time limit in the AP for providing access to documents.*

The deep mistrust among states in the Middle East and some non-compliance cases from the region demonstrate that to provide the necessary confidence in the IAEA verification system in this specific NWFZ, its verification rights need to go beyond those available under a CSA and the Additional Protocol.⁴⁵

The problem is that these additional “transparency measures” have not been defined officially in any precise way.⁴⁶ And when they are requested under an IAEA Board of Governors resolution,⁴⁷ they are not legally binding on the state concerned. This is why they must be clearly defined in

43. https://armscontrollaw.files.wordpress.com/2019/05/sir-2018_6may2019dstr.pdf

44. For a detailed description of the limitations to the Agency's verification authority under the AP and the way they could be corrected, see “IAEA Safeguards: Dealing preventively with non-compliance”, P. Goldschmidt, 12 July 2008. https://carnegieendowment.org/files/Goldschmidt_Dealing_Preventively_7-12-08.pdf

45. and not only until the IAEA has been able to draw the “broader conclusion” for each state-party to the NWFZ, as has been suggested in the past.

46. As an example, under its Resolution 1737 (2006) the Security Council decided “that Iran shall provide such access and cooperation as the IAEA requests to be able...to resolve all outstanding issues, as identified in IAEA reports.”

47. as was for instance the case for Iran on September 12, 2003, and February 4, 2006.

the zone treaty, be included in a specific safeguards agreement concluded with the IAEA, and ratified by each state-party to the NWFZ Treaty.

The above-mentioned shortcomings of the AP have been addressed in the “Model Temporary Supplementary Protocol” (MTCP) described in the document “Concrete Steps to Improve the Non-proliferation Regime.”⁴⁸

The parties to the NWFZ in the ME should conclude with the IAEA a specific safeguards agreement along the lines described in the MTCP. Its provisions are consistent with Article XII.A.6 of the IAEA Statute.

This specific safeguards agreement should reassure the states-parties to the NWFZ that the Agency is able to verify in a timely manner the absence of undeclared nuclear material, equipment and activities in all the states-parties, to verify the correctness and completeness of their declarations to the Agency, and to determine whether or not previously undeclared nuclear material and activities have been undertaken in furtherance of a nuclear weapons program.

These broader access rights must not exclude military sites, since it would be likely for the military (or related actors) to be involved in nuclear activities associated with a weapons program should one exist. At the same time, military sites may contain sensitive information that would not be relevant to the Agency’s investigation. Therefore, the Agency’s activities on such sites may need to be conducted under “managed access” conditions, which protect such information while allowing the Agency to reach its objective.⁴⁹

Settlement of Dispute and Special Inspections

Because many of the 14 states of the NWFZ considered in this study distrust each other, it is not envisaged that they could constitute a common organization with inspectors from states-parties in charge of verifying compliance with the terms of the Treaty and of undertaking “special inspections” and fact-finding missions as foreseen in the treaties of Tlatelolco, Rarotonga, Bangkok and Pelindaba.

48. “Concrete Steps to Improve the Non-proliferation Regime”, Carnegie Paper No. 100, April 2009, page 27 and following. https://carnegieendowment.org/files/improve_nonpro_regime.pdf

49. This issue has been addressed in the JCPOA concluded in July 2015 between Iran and the P5 plus Germany. Nevertheless, the language used in its Annex 1, § Q, remains ambiguous and subject to interpretation. It provides that: “§74. Requests for access ... will be made in good faith, with due observance of the sovereign rights of Iran, and kept to the minimum necessary ... In line with normal international safeguards practice, such requests will not be aimed at interfering with Iranian military or other national security activities but will be exclusively for resolving concerns regarding fulfilment of the JCPOA commitments and Iran’s other non-proliferation and safeguards obligations.”

If a Party to the NWFZ Treaty “*suspects that some activity prohibited by the Treaty has been carried out or is about to be carried out*”⁵⁰ by another state-party, it can of course bring the matter to the attention of the suspected state in an attempt to resolve the issue bilaterally or by sharing the information with all the states-parties to the Treaty.

But if the complaining party fears that by doing so, the party in potential breach of the NWFZ Treaty could rapidly eliminate any evidence of the prohibited activities, it will have no other choice than to inform the IAEA Department of Safeguards and provide the evidence necessary for the Director General to decide if an unannounced special inspection is warranted.

It is therefore crucial for all states-parties to have full confidence that the IAEA can effectively, efficiently and promptly accomplish such special inspections and its other verification tasks.

Pursuant to paragraph 73 of the CSA, a special inspection can be invoked “if the Agency considers that information made available by the State [...] is not adequate for the Agency to fulfill its responsibilities under the Agreement.” Paragraph 18 provides that, if the Board of Governors decides that action by the state is “essential and urgent”, the Board shall be able to call upon the state to take the required action without delay. In February 1992, the Board reaffirmed the Agency’s right to undertake special inspections, when necessary and appropriate.

However, the IAEA’s record of invoking special inspections is not promising. Public records indicate the Agency requested special inspection only twice: once in 1992 at Romania’s request to verify past undeclared activities, and, again, in 1993 when the IAEA requested a special inspection to investigate inaccuracies in North Korea’s initial declaration.

More recently the IAEA has preferred to rely solely on requests for voluntary access to undeclared sites. However, if such a request is refused (or significantly delayed) as has been the case for instance in Iran and Syria, and the only consequence is that the Director General reports at each Board meeting that no progress has been made, members of the Zone will lack the necessary confidence in the capacity of the Agency to investigate in a timely manner the possible existence of prohibited activities in the NWFZ. The NWFZ Treaty will therefore have to include a clause making clear the procedures and modalities of implementing special inspection and what would be the consequences if it cannot take place as required.

State System of Accounting and Control (SSAC)

A CSA provides under its Article 7 “that the State shall establish and maintain a system of accounting for and control of all nuclear material subject to safeguards under the Agreement, and that such safeguards shall be applied in such a manner as to enable the Agency to verify, in ascertaining that there has been no diversion of nuclear material from peaceful uses to nuclear

50. Article 16 of the Tlatelolco Treaty.

weapons or other nuclear explosive devices, findings of the State's system. [...]The Agency, in its verification, shall take due account of the technical effectiveness of the State's system.”

The Safeguards Statement for 2022 has a section on “Areas of difficulty in safeguards implementation” stressing once more that:

“The performance and the effectiveness of State or regional authorities responsible for safeguards implementation (SRAs) and of their respective systems of accounting for and control of nuclear material (SSACs/RSACs) have a significant impact upon the effectiveness and efficiency of Agency safeguards implementation. The effectiveness of some SRAs is affected by issues identified by the Agency in one or more of the following areas: provision of safeguards information to the Agency; provision of access to the Agency to conduct in-field verification activities; technical effectiveness of SSACs; and States’ cooperation and logistical support related to the Agency’s verification activities in the field or at Headquarters. [...]

Moreover, not all SRAs have the necessary legal authority, independence from nuclear facility or LOF operators, resources or technical capabilities to implement the requirements of safeguards agreements and APs.”⁵¹

These deficiencies are not new. The SIR for 2008⁵² reports that

“The Agency was informed in 2004 by Egypt’s SSAC, the Atomic Energy Authority (AEA), that it did not have the authority necessary for it to exercise effective control of all nuclear material and activities in the State.”

This deficiency was supposed to be corrected in the course of 2006, but the reporting failures by Egypt mentioned in the SIR for 2012 might indicate that the situation had still not been satisfactorily resolved at the time.⁵³

As a confidence building measure, the IAEA should provide an assessment of the SSACs for the 14 states expected to be part of the NWFZ, and report explicitly in its annual Safeguards Implementation Report which states of the zone lack an effective SSAC and which states have deliberately and without good reason delayed access to locations and facilities or the taking of environmental samples.

51. Safeguards Implementation Report for 2022

<https://www.iaea.org/newscenter/news/iaea-draws-safeguards-conclusions-for-188-states-safeguards-implementation-report-2022>

52. <https://www.iaea.org/sites/default/files/es2008.pdf>

53. “Serious Deficiencies Exposed by Latest IAEA Safeguards Implementation Report”, 25 June 2013

<https://carnegieendowment.org/2013/06/25/serious-deficiencies-exposed-by-latest-iaea-safeguards-implementation-report-pub-52158>

Irreversible Facility-Specific Safeguards

One of the main outstanding safeguards loopholes is the absence of a requirement for IAEA safeguards to remain in force should a state leave the NPT. Currently, if any Non-Nuclear-Weapon State (NNWS) withdraws from the NPT, its Comprehensive Safeguards Agreement with the IAEA (and its Additional Protocol) would automatically lapse under the terms of that agreement. As a result, the withdrawing state may use previously safeguarded nuclear material and facilities, in particular enrichment and reprocessing facilities, to produce nuclear weapons (as North Korea did after its withdrawal in 2003) without violating any international treaty.

In order to address this issue all the states-parties to the NWFZ would have to conclude with the IAEA a facility-specific safeguards agreement for every nuclear fuel-cycle facility⁵⁴. In contrast to Comprehensive Safeguards Agreements, facility-specific safeguards agreements – known as INFCIRC/66-type agreements – do not lapse if the state withdraws from the NPT.⁵⁵

Under normal circumstances and as is the case already today, for NNWSs, INFCIRC/66 safeguards agreements concluded with the IAEA are and will continue to be subsumed under their existing Comprehensive Safeguards Agreements. They would become operational only if the latter were terminated.

This approach does not create a new safeguards standard, as the Model Additional Protocol did in 1997. Instead, it involves the simple adoption of an older type of safeguards. Therefore, it should face fewer political obstacles and, beyond some paperwork at the outset, would impose no additional safeguards or financial burden on the state or the IAEA.

D.2. NWFZ Commitments Unrelated to IAEA Safeguards

No Nuclear Explosive Device

As in the Pelindaba Treaty, the NWFZ Treaty would prohibit states-parties “*from conducting research on, developing, manufacturing, stockpiling, acquiring, possessing, or having control over **any** nuclear explosive device by any means anywhere.*” Moreover, as negotiated in the JCPOA, prohibitions should explicitly include not to engage in activities, including at the R&D level, that could contribute to the design and development of a nuclear explosive device, including uranium or plutonium metallurgy activities.⁵⁶

54. or possibly all nuclear facilities.

55. Facility-specific agreements can be terminated only if the recipient state returns or transfers to a third state all supplied nuclear material, equipment, and facilities previously subject to safeguards or if those items and materials are “no longer usable for any nuclear activity relevant from the point of view of safeguards or had become practicably irrecoverable.” IAEA, “The Agency’s Safeguards System,” INFCIRC/66/Rev.2, September 16, 1968.

56. See paragraph 16 and Section E of Annex I of the JCPOA.

As foreseen under Article 6 of the Pelindaba Treaty, each party to the NWFZ in the Middle East Treaty would have:

- (a) To declare any capability for the manufacture of nuclear explosive devices;
- (b) To dismantle and destroy any nuclear explosive device that it has manufactured prior to the coming into force of this Treaty;
- (c) To destroy facilities for the manufacture of nuclear explosive devices or, where possible, to convert them to peaceful uses.

Ratifying the Comprehensive Nuclear-Test-Ban Treaty (CTBT)

As for the Semipalatinsk Treaty, the NWFZ Treaty would require its members to comply fully with the CTBT⁵⁷ which should be ratified before joining the Treaty.⁵⁸ To that end, Egypt, Iran, Israel, Saudi Arabia, Syria and Yemen should ratify the CTBT in a coordinated way and within an agreed period of time.

The ratification of the CTBT by those six states would, de facto, establish a Nuclear-Test-Free Zone (NTFZ) in the Middle East since the other eight states of the zone, have already done so.⁵⁹

A NTFZ in the Middle East would represent a concrete step in building nuclear confidence in the region and would be a win-win measure for all concerned. It would not single out any state, and thus would not give any state an incentive to block progress. Moreover, it could occur without waiting for the recognition of Israel by Iran and some Arab states, and the conclusion of a peace treaty between Israel and Syria.

It is encouraging that the Executive Secretary of the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO), Lassina Zerbo, stated in January 2016 that having Iran and Israel ratify the CTBT together would “certainly” lead to ratification by Egypt, which would in turn help lead to a NTFZ in the Middle East.⁶⁰ This view might, however, be too optimistic since Egypt's policy

57. The CTBT, has 196 member states, 183 that have signed the treaty and 164 that have ratified it. But the treaty has not entered into force because it still needs ratification by eight countries that had nuclear power reactors or research reactors when the U.N. General Assembly adopted the treaty in 1996: the United States, China, Iran, Israel, Egypt, India, Pakistan and North Korea.

https://en.wikipedia.org/wiki/Comprehensive_Nuclear-Test-Ban_Treaty

58. As of today, all states in the ME zone have ratified the CTBT, except Egypt, Iran, Israel and Yemen who have signed but not ratified the Treaty, and Saudi Arabia and Syria who have not yet signed it. In June 2016 Israel Prime Minister Netanyahu reiterated his country's support for the Treaty, adding that its ratification depended “on the regional context and appropriate timing.”

<https://www.ctbto.org/press-centre/news-stories/2016/working-on-the-when-of-israels-ratification/>

59. Bahrain, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, and the United Arab Emirates have ratified the CTBT.

60. Edith M. Lederer, “UN Official: Iran, Israel Could Ratify Nuke Test Ban Treaty,” Associated Press, January 29, 2016. <https://www.timesofisrael.com/un-official-iran-israel-could-ratify-nuke-test-ban-treaty/>

since the mid-1990s has been to refuse the adoption of any additional non-proliferation measure until Israel joins the NPT.

It is hard to see why Iran would object to the ratification of the CTBT in coordination with Egypt, Israel, Saudi Arabia, Syria and Yemen, since it has declared in the preamble of the JCPOA that “*Iran reaffirms that under no circumstances will Iran ever seek, develop or acquire any nuclear weapons.*”⁶¹

Moreover, it is worth recalling Khamenei's Fatwa⁶² stating that the production and use of nuclear weapons are “haram”, i.e. forbidden under Islam. It should, however, be specified “under Shia Islam” but obviously not under Sunni Islam since the Islamic Republic of Pakistan has an arsenal of nuclear weapons.

It should also be underlined that neither in the JCPOA's preamble nor in Khamenei's Fatwa⁶³ is it stated that “*in no circumstances will Iran ever seek, develop or acquire any “peaceful nuclear explosive device.”*” Knowing the subtlety and sense of nuance of Iranian leaders this should not be overlooked. Finally, there appears to be a contradiction between Khamenei's Fatwa and Iran's numerous threats to withdraw from the NPT, since few people would believe that a country would withdraw from the NPT for reasons other than the acquisition of nuclear weapons.

As stated in August 2014 by Jordan's Prime Minister Abdullah Ensour:

“Of all the relevant international norms, the CTBT in particular should come naturally to peace-loving countries. By banning nuclear test explosions, this Treaty prevents the military use of nuclear technology, blocking the path to the one weapon capable of ending human civilization. Unlike other multilateral instruments, the CTBT has no repercussions whatsoever for the civilian use of nuclear technology.

The CTBT's entry into force would mark a milestone on the way to a world free of nuclear weapons. It would show progress in the disarmament promise made by nuclear weapon States decades ago and thus strengthen the international commitment to the NPT. It would certainly give fresh momentum to the aspiration of a nuclear-weapon-free zone in the Middle East.”⁶⁴

It should be stressed that the sole purpose of the CTBT is to verify the undertaking of each State Party “not to carry out any nuclear weapon test explosion or any other nuclear explosion, and to prohibit and prevent any such nuclear explosion at any place under its jurisdiction or control.” It does not verify that the states-parties are not designing and developing nuclear explosive devices.

61. [https://undocs.org/S/RES/2231\(2015\)](https://undocs.org/S/RES/2231(2015))

62. stated orally in October 2003 and cited in an official statement by the Iranian government at a meeting of the IAEA in August 2005.

63. It is generally considered that a Fatwa has no legal standing and can be reversed or contradicted.

64. https://www.ctbto.org/fileadmin/user_upload/pdf/Spectrum/2014/Spectrum22_p6.pdf

Therefore, as mentioned above, under the NWFZ in the Middle East Treaty, the Parties would have to undertake not to engage in activities, including at the R&D level, that could contribute to the design and development of a nuclear explosive device, as specified in Annex I of the JCPOA.⁶⁵

This is all the more important that under the NPT and a Comprehensive Safeguards Agreement a State is entitled, without having to report to the IAEA:

- to study and test the effect of shock waves on non-nuclear materials;
- to develop high explosives for high precision applications such as shaped charges;
- to undertake theoretical studies of the effect of nuclear explosions; or
- to develop or procure neutron sources e.g. for applications such as oil logging that can also be used as initiators in nuclear weapons;

as long as no nuclear material is used in any of these experiments.

It should moreover be acknowledged that it is extremely difficult for the Agency to verify that no nuclear material is being used in such activities since the Agency's access rights to locations where such experiments may be taking place - particularly military sites - are very limited, even when measures of the Additional Protocol are being implemented.

The Nuclear Gold Standard

From an international perspective, the best guarantee that the nuclear programs of the states-parties to the NWFZ Treaty are and will remain exclusively peaceful is for the parties to adopt the so-called "nuclear gold standard,"⁶⁶ a legally binding obligation to forswear enrichment and reprocessing activity and technology.

This is all the more important since the NPT does not prohibit a country from pursuing nuclear fuel cycle related activities as long as they are declared to the Agency in accordance with the State's safeguards agreement. These activities can include:

- mining or producing natural uranium, even if it is not justified economically;
- constructing an enrichment facility to produce either low enriched uranium (LEU) or weapons-grade high enriched uranium (HEU) long in advance of any demonstrated national need and even if it is not economically justified;

65. See paragraph 16 of the JCPOA.

66. See "The Nonproliferation Gold Standard: The New Normal?", Arms Control Association, October 2019, [Victor Gilinsky and Henry Sokolski. https://www.armscontrol.org/act/2019-10/features/nonproliferation-gold-standard-new-normal](https://www.armscontrol.org/act/2019-10/features/nonproliferation-gold-standard-new-normal)

- processing spent nuclear fuel and separating the plutonium contained therein, even if there is no technical or economic justification for doing so and no plan to recycle this material; and
- converting uranium of any enrichment level, or plutonium, into metal form e.g. for research reactor fuel or for purely scientific purposes.

Under the nuclear gold standard most if not all existing nuclear fuel-cycle facilities would have to be dismantled or mothballed.

The United Arab Emirates was the first nation to adopt this standard in December 2009.⁶⁷

So far both Saudi Arabia and Jordan have refused to conclude, with the United States, a 123 Agreements containing the gold standard. It is expected that Iran will also resist the adoption of the nuclear gold standard. Indeed, since 2003, President Rouhani has repeatedly stated that Iran will never give up its *right to enrich uranium*.

Iran has justified the development of an indigenous enrichment capacity as a guarantee that the fuel supply of its nuclear power plants will not be disrupted for political reasons as was the case in the early 1990s when EURODIF, the French enrichment company, refused to deliver enriched uranium to Iran.⁶⁸

This risk of fuel supply disruption is presently extremely low, first because there is presently an overcapacity of enrichment services worldwide, and additional enrichment capacities can be installed within a short period of time; and second because if the United States or even the European Union would, for whatever political reason, refuse to deliver enrichment services to Iran, Russia⁶⁹ and China (which together possess 60% of the world enrichment capacity) would remain reliable sources of supply.

The very small risk of fuel supply disruption for political reasons has been further reduced thanks to the creation of the IAEA Low Enriched Uranium (LEU) Bank. It is a physical reserve of LEU owned and controlled by the IAEA and available for eligible IAEA Member States in case the supply of LEU to a nuclear power plant is disrupted due to exceptional circumstances and the Member State is unable to secure LEU from the commercial market or by any other means. With the arrival of the first LEU shipment from France on 17 October 2019, the IAEA LEU Bank became fully operational.⁷⁰

67. See “UAE 'meets nuclear gold standard'“

<https://www.thenational.ae/uae/uae-meets-nuclear-gold-standard-1.498185>

68. Iran and Foreign Enrichment: A Troubled Model, Arms Control Association, 2006.

<https://www.armscontrol.org/act/2006-01/iran-nuclear-briefs/iran-foreign-enrichment-troubled-model>

69. Already in February 2006 Moscow offered to enrich Iran's uranium in Russia.

<https://www.rferl.org/a/1066052.html>

70. <https://www.iaea.org/topics/iaea-low-enriched-uranium-bank>

In 2012, Hamad al-Kaabi, the UAE envoy to the IAEA, said during a conference that “*The UAE view is that for a country to develop nuclear power starting from scratch, it makes no commercial sense or technical sense to develop full enrichment facilities.*”⁷¹ It is doubtful that even for a country with more advanced nuclear expertise such as Iran it would make much economic sense.

If members to the Zone adopt the nuclear gold standard, the EU3+3⁷² should formally commit to provide, at competitive market conditions, the necessary fuel assemblies to operate their nuclear power plants and research reactors.

In addition, the United States could commit to cancel all nuclear-related economic sanctions affecting Iran once the latter has adopted the nuclear gold standard, and the IAEA has reached the so-called “broader conclusion.” It is not clear what form such a US commitment should take to reassure Iran that the US would not reject it later on under whatever pretext as it did with the JCPOA.

Multinational Enrichment Facilities

Another idea to address the fear of fuel supply disruption that has been discussed is the concept of a multinational enrichment facility owned and operated by a group of Middle East states. Iran proposed it would be located in Iran, possibly in a “free-trade zone.” This proposal does not provide the non-proliferation assurance level of the gold standard and is unlikely to be acceptable for some of the other parties to the NWFZ.

Contrary to conventional wisdom, it is not necessarily in the interest of a state or an electrical company with a small nuclear program to become a minority shareholder in a multinational enrichment facility (MEF). Doing so would make the shareholder almost exclusively dependent upon one supplier, with little possibility of benefiting from the competition of multiple suppliers. Becoming a partner in a MEF is like getting married. Those entering such a project ought to know that getting divorced will be difficult, long, and costly.

Multinational Fuel Procurement Arrangements

An additional idea that could be more practical to the Middle East nuclear energy market than a MEF is a Multinational Fuel Procurement Arrangements. It is virtually impossible for an electrical utility envisaging the construction or operation of its first NPP to diversify its fuel supply sources. Therefore, it may be useful for states that are constructing their first nuclear

71. “UAE Promotes Nonproliferation “Gold Standard” for Nuclear Energy Programs”, NTI, April 19, 2012.

<https://www.nti.org/gsn/article/uae-promotes-nonproliferation-gold-standard-nuclear-energy/>

72. The EU3+3 are France, Germany and the United Kingdom (the EU3) plus China, Russia and the USA.

power plants (NPPs)⁷³ and are located in the same region, such as those belonging to the Gulf Cooperation Council (GCC),⁷⁴ to establish a common multinational fuel procurement company. Given its size, such a company would be in a better commercial position to diversify its fuel supply sources and negotiate better economic terms thanks to competition between suppliers.⁷⁵ It is suggested that if Iran, Saudi Arabia and the UAE would set up a common fuel procurement company it would considerably limit the potential disruption of fuel supply for political reasons and would be more feasible and economic than participating in a multinational enrichment facility. It would also constitute a major confidence building measure among the partners.

The “nuclear gold standard” represents a most valuable objective for a NWFZ in the ME but, provided all fuel-cycle facilities have been placed **under irreversible safeguards**, it should not be a stumbling block for moving towards such a zone. As long as the gold standard has not been agreed by all states-parties, they would have, under the NWFZ Treaty, to give up all reprocessing-related activities; and to limit to a few hundred kilograms their stockpile of enriched uranium with an enrichment of maximum 5% U-235.

These two conditions are similar to those presently included in the JCPOA, which provides that:

“For 15 years Iran will not, and does not intend to thereafter, engage in any spent fuel reprocessing or construction of a facility capable of spent fuel reprocessing, or reprocessing R&D activities leading to a spent fuel reprocessing capability, with the sole exception of separation activities aimed exclusively at the production of medical and industrial radio-isotopes from irradiated enriched uranium targets.”⁷⁶

and that:

“During the 15-year period, and as Iran gradually moves to meet international qualification standards for nuclear fuel produced in Iran, it will keep its uranium stockpile under 300 kg of up to 3.67% enriched uranium hexafluoride (UF₆) or the equivalent in other chemical forms.”⁷⁷

Under the NWFZ Treaty these undertakings would be permanent and not limited to 15 years as specified in the JCPOA.

73. which is the case in all countries in the region interested in nuclear energy aside of Iran

74. Saudi Arabia, Kuwait, the United Arab Emirates, Qatar, Bahrain, and Oman

75. Such a fuel procurement company was set up in Belgium in 1977 to cover the needs of the seven NPPs operated by two different electrical utilities. It proved to be extremely effective.

76. Paragraph 12 of the JCPOA.

77. Paragraph 7 of the JCPOA.

No Armed Attack of Nuclear Facilities

The Pelindaba Treaty provides under its Article 11 that “*Each Party undertakes not to take, or assist, or encourage any action aimed at an armed attack by conventional or other means against nuclear installations in the African nuclear-weapon-free zone.*”

Given the past experience of nuclear facilities being a target during armed conflict, it is expected that Iran and possibly other states will insist to have a similar provision included in a NWFZ Treaty in the Middle East. There has been four such cases in the region:

1. in September 1980 Iran bombed the Osirak nuclear site in Iraq;⁷⁸
2. in June 1981 Israel bombed the Osirak nuclear research reactor under construction;
3. during the Iran-Iraq war (1980-1988) Iraq bombed Iran’s Bushehr NPP three times;⁷⁹
4. in September 2007, Israel bombed the Syrian undeclared Al-Kibar nuclear reactor under advanced construction (in cooperation with North Korea) near Deir ez-Zor.⁸⁰

It is worth mentioning those facts because in the Syrian case for instance Israel did not believe that seeking an IAEA investigation - possibly leading to UNSC action (or inaction because of the exercise of its veto right by one of the UNSC's permanent members) - would have eliminated the risk posed by the Al-Kibar facility:

“Had Israel brought the matter to the IAEA, Israel would have had reason to fear that Syria would have followed the Iranian example: stalling for time, delaying inspections, removing evidence, asserting (however falsely) that the site was peaceful in nature, and claiming that it had disguised the unit in order to protect it from possible attack.”⁸¹

Once declared to the IAEA and placed under Agency's safeguards, not much could have prohibited the completion and operation of the reactor.⁸²

Israel's reluctance to trust international organizations to guarantee its security has probably been reinforced by the inability of permanent members of the Security Council to take timely and decisive action against North Korea and Iran before it was too late.

Although it will likely be a point of contention, the Treaty establishing a NWFZ in the ME should include the commitment “*not to take, or assist, or encourage any military action by conventional*

78. <https://unredacted.com/2012/03/09/document-friday-when-iran-bombed-iraqs-nuclear-reactor/>

79. <https://www.upi.com/Archives/1987/11/19/Iraq-hits-Iranian-nuclear-plant-again-strikes-two-oil-tankers/1676564296400/>

80. The reactor was modeled on one used by North Korea to produce weapons-grade plutonium.

81. <https://www.armscontrol.org/act/2008-08/features/israel%E2%80%99s-airstrike-syria%E2%80%99s-reactor-implications-nonproliferation-regime>

82. Can one imagine what could have happened if the Al-Kibar reactor, loaded with nuclear fuel, had been under the control of the Islamic State, which dominated most of the Deir ez-Zor Governorate from 2014 to 2017?

or other means against nuclear installations.” All the cases mentioned above relate to nuclear reactors under construction. A compromise solution might be to limit the commitment “not to take, or assist, or encourage any military action, by conventional or other means, against any operating nuclear reactor declared to the IAEA and covered by a CSA.”⁸³

Nuclear fuel-cycle facilities which can be of dual-use (in particular if a state withdraws from the NPT) would not be included. Therefore, if the nuclear gold standard is required under the NWFZ Treaty, there should be no objection to the above formulation.

Export Controls and Physical Protection

As required under the Semipalatinsk Treaty, the states-parties of the NWFZ in the ME:

- would undertake to adopt export controls wherein they commit not to provide source or any special fissionable material or related equipment to any NNWS that has not concluded an IAEA Comprehensive Safeguards Agreement and an **Additional Protocol**.
- would have to agree to maintain measures of physical protection of nuclear material, facilities, and equipment that are at least as effective as those recommended by the Convention on Physical Protection of Nuclear Material (CPPNM) as amended.

E: Israel's Nuclear Disarmament and the Entry into Force of the NWFZ Treaty

The only precedent of a non-NPT state possessing nuclear weapons that voluntarily decided to eliminate its nuclear arsenal and then joined the NPT as a NNWS is South Africa.

It is likely that, if Israel voluntarily decides to become a NPT-NNWS, it would follow the South African pathway, and would eliminate any nuclear weapons and destroy all nuclear-weapons-related facilities before joining the NPT and allowing the IAEA to verify that there are no undeclared nuclear material and facilities in the country.

The following sequence of events is expected to take place once the 14 states-parties to the Middle East NWFZ Treaty have agreed on its content:

1. The IAEA would publish the text of the Treaty in the form of an Information Circular;
2. All states-parties would sign the Treaty and submit it for ratification to their respective parliaments with the understanding that it would come into force automatically once Israel joins the NPT as a NNWS;

83. if necessary with the possible addition of “*in a state in full compliance with its safeguards obligations.*”

3. All states-parties would conclude with the IAEA the specific safeguards agreements required under the NWFZ Treaty. Their ratification would automatically come into force once Israel joins the NPT;
4. At this point, Israel would follow the South African pathway, and voluntarily eliminate any possible nuclear weapons (or component thereof) and destroy all nuclear-weapons-related facilities. Whether Israel would do that before the Agency has been able to draw the “broader conclusion” for all the other states-parties is an open question.
5. Israel would then join the NPT and the NWFZ Treaty would automatically enter into force, as well as the corresponding safeguards agreements;
6. The IAEA Department of Safeguards would start the verification that there are no undeclared nuclear material and facilities in Israel by implementing the Treaty specific safeguards agreement.

As underlined in 2015 by Vertic:⁸⁴

“The IAEA Department of Safeguards - which fulfills the IAEA verification mandate - has included its role in verifying nuclear disarmament within its Long-Term Research and Development Plan (2012-2023). One of the Department’s overarching strategic objectives is to ‘contribute to nuclear arms control and disarmament, by responding to requests for verification and other technical assistance’. Member States reiterated their desire for the IAEA to fulfill this objective by passing a resolution at the 2014 General Conference noting that ‘the Agency must remain ready to assist, in accordance with its Statute, with verification tasks under nuclear disarmament [. . .] that it may be requested to carry out.’”

The IAEA has gained considerable experience in verifying that all nuclear weapons-related material, equipment and activities had been eliminated or placed under IAEA safeguards in Iraq, South Africa and Libya as briefly summarized in Appendix 2.

In Iraq the IAEA was operating under a legally binding UNSC⁸⁵ resolution deciding that Iraq shall unconditionally accept urgent on-site inspections and the destruction and removal of all its nuclear-weapon-usable materials and all assets relevant to the design and production of nuclear weapons. Verification in Iraq was placed under the responsibility of an “Action Team” which was reporting directly to the IAEA Director General and was not part of the Department of Safeguards. According to two leaders of the IAEA Action Team, the Agency’s rights of access were “*unique in scope and far beyond anything that a state would voluntarily concede.*”⁸⁶

84. “The IAEA and Nuclear Disarmament Verification: A Primer”, Vertic Research Reports, Number 11, September 2015.

<https://www.vertic.org/media/assets/Publications/VM11%20WEB.pdf>

85. UN Security Council of resolution 687 (8 April 1991)

86. “An overview of the IAEA Action Team activities in Iraq” by Garry Dillon and Jacques Baute. [https://inis.iaea.org/collection/NCLCollectionStore/ Public/33/034/33034358.pdf](https://inis.iaea.org/collection/NCLCollectionStore/Public/33/034/33034358.pdf)

This is in stark contrast with the experience gained in South Africa and Libya. These two states having voluntarily decided to eliminate their nuclear weapons programs, provided full transparency and openness with respect to access to information, and demonstrated their willingness to facilitate access to any location that the IAEA had identified. Therefore, there was no need to set up a kind of Action Team, and all required verification activities were undertaken by the IAEA Department of Safeguards as will most likely be the case in Israel.

South Africa ratified the Additional Protocol in September 2002 and attained a full bill-of-health when the IAEA drew the “broader conclusion” in 2010.

Libya ratified the AP in August 2006 and the IAEA was able to draw the “broader conclusion” in 2008. At the end of 2022, the IAEA had still not been able to draw the broader conclusion for Iraq.

F. Conclusion

This study demonstrates that the achievement of a WMDFZ in the Middle East will be a long and difficult process. It also indicates that there is an indispensable need to move from grand visions and rhetorical declarations to concrete discussion about what would be prohibited under the zone, how it would be verified, and how enforcement and disarmament would take place. These should be complemented by identifying step by step confidence-building measures.

A first practical and balanced regional confidence-building measure would be for Egypt, Iran, Israel, Saudi Arabia, Syria and Yemen to ratify the Comprehensive Nuclear Test Ban Treaty⁸⁷ in a coordinated way and within an agreed period of time.

The ratification of the CTBT by those six states would, de facto, establish a Nuclear-Test-Free Zone (NTFZ) in the Middle East since the other eight states of the zone (Bahrain, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, and the United Arab Emirates) have already ratified the CTBT.

A NTFZ in the Middle East would represent a major concrete step in building nuclear confidence in the region and would be a win-win measure for all concerned. It would not single out any state, and thus would not give any state an incentive to block progress. Moreover, it could occur without waiting for the recognition of the State of Israel by Iran and some Arab states and the conclusion of a peace treaty between Israel and Syria.

87. The CTBT, has 196 member states, 183 that have signed the treaty and 164 that have ratified it. But the treaty has not entered into force because it still needs ratification by eight countries that had nuclear power reactors or research reactors when the U.N. General Assembly adopted the treaty in 1996: the United States, China, Iran, Israel, Egypt, India, Pakistan and North Korea.

https://en.wikipedia.org/wiki/List_of_parties_to_the_Chemical_Weapons_Convention

If the United States and China would lead by example and ratify the CTBT that could help tremendously.⁸⁸

Another significant confidence building measure that can take place without any political or security agreements between the parties to the future WMD Free-Zone, is for all of them to place their nuclear fuel-cycle facilities under irreversible safeguards agreements.

The greatest difficulty will be for the countries of the region to find a way to negotiate a treaty containing undertakings similar to those described in this study, and to agree on the sequence of commitments made by each of them, bearing in mind that for Israel, accession to the NPT would de facto be an irreversible decision.

Although the preliminary steps contemplated here appear to an outside observer to be in the interest of all parties, they cannot be expected to take place in the foreseeable future: Iran has never been closer to becoming a nuclear threshold state,⁸⁹ tension between Iran and Israel has rarely been higher, and Israel settlement policy in the occupied Palestinian territories has never been further from the requirement contained in UNSC resolution 2334.

What makes legally binding commitments necessary for the creation of a nuclear-weapon-free zone in the Middle East is that none of their leaders have forgotten what happened to Muammar Gaddafi in Libya a few years after he gave up his weapons of mass destruction program.

Nor will they forget Russia's unprovoked invasion of Ukraine, in cynical defiance of the Budapest Memorandum of December 1994 which commits the Russian Federation, the United Kingdom and the United States to respect the independence, sovereignty and existing borders of Ukraine, and reaffirms their obligation to refrain from the threat or use of force against the territorial integrity or political independence of Ukraine, as soon as Ukraine gives up the Soviet nuclear weapons stationed on its soil and join the NPT as a non-nuclear-weapon state.⁹⁰

At the UN General Assembly's First Committee meeting on 30 October 2019, Israel's representative said that as long as a culture of non-compliance with arms control and non-proliferation treaties persists in the Middle East, it will be impossible to promote any regional disarmament process.⁹¹

88. Conversely, the mere fact that the Trump administration could have considered the possibility of carrying out the first US underground nuclear test since 1992 as was reported in May 2020, can only be counterproductive. https://www.washingtonpost.com/national-security/trump-administration-discussed-conducting-first-us-nuclear-test-in-decades/2020/05/22/a805c904-9c5b-11ea-b60c-3be060a4f8e1_story.html

89. A "nuclear threshold state" is defined here as a state capable of manufacturing more than one nuclear device in a few months' time and possessing the necessary delivery means.

90. "Memorandum on security assurances in connection with Ukraine's accession to the Treaty on the Non-Proliferation of Nuclear Weapons." Budapest, 5 December 1994.

91. <https://www.un.org/press/en/2019/gadis3637.doc.htm>

Let us be clear: until the concrete confidence-building measures suggested here are adopted, the creation of a WMD-free zone in the Middle East will remain utopian.

In the meantime, the members of the UN Security Council should devote more time and attention to strengthening the non-proliferation regime and better deterring any state from withdrawing from the NPT.⁹²

92. “Dealing Preventively with NPT Withdrawal”, January 23, 2020.
http://npolicy.org/event_file/Pierre_Goldschmidt_Dealing_Preventively_with_NPT_Withdrawal_140220_1509.pdf

Appendix 1: Existing Nuclear-Weapons Free Zones (NWFZ)

The five main NWFZ existing today are: the 1967 Treaty of Tlatelolco (Latin America), the 1985 Treaty of Rarotonga (South Pacific), the 1995 Treaty of Bangkok (Southeast Asia), the 1996 Treaty of Pelindaba (Africa), and the 2006 Treaty of Semipalatinsk (Central Asia). Their main characteristics can be summarized as follows.

The Treaty of Tlatelolco

The “Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean” or Tlatelolco Treaty, covers the entire Latin American and Caribbean region and large sectors of the Pacific and Atlantic Oceans.⁹³

The treaty aims to prohibit and prevent in the region the testing, use, manufacture, production, or acquisition by any means whatsoever of any nuclear weapons, by the Parties themselves, directly or indirectly, on behalf of anyone else, or in any other way.

It was opened for signature in February 1967 and entered into force in April 1969, one year before the entry into force of the NPT (which was open for signature in 1968).

The Tlatelolco Treaty has established an elaborate organization for verifying compliance with its terms and reporting cases of non-compliance.

For instance, under Article 16:

When so requested, by any Party which suspects that some activity prohibited by the Treaty has been carried out or is about to be carried out, the Council established by the Treaty shall immediately carry out a *special inspection*.

The Contracting Parties undertake to grant the inspectors carrying out such special inspections full and free access to all places and all information which may be necessary for the performance of their duties and which are directly and intimately connected with the suspicion of violation of this Treaty.

The Council shall send to the United Nations Security Council and General Assembly, and to the Council of the Organization of American States, for its information, a copy of any report resulting from any special inspection.

In addition, Article 20 provides that:

93. https://media.nti.org/documents/tlatelolco_treaty.pdf

All cases in which any Contracting Party is not complying fully with its obligations under the Treaty shall be brought to the attention of the Party concerned, with appropriate recommendations.

If such non-compliance constitutes a violation of this Treaty which might endanger peace and security, the case shall be reported simultaneously to the UN Security Council and the General Assembly and to the Council of the Organization of American States. It shall likewise be reported to the IAEA for such purposes as are relevant in accordance with its Statute.

The Treaty of Tlatelolco is the only NWFZ Treaty which allows the parties to “*carry out explosions of nuclear devices for peaceful purposes, including explosions which involve devices similar to those used in nuclear weapons.*” (Article 18.1).

This loophole has fortunately been corrected now that all states-parties have ratified the CTBT except Cuba which has not yet signed it.

The Argentina–Brazil Agreement

“Over the course of 1990 and 1991, the Governments of Argentina and Brazil agreed bilaterally to use the nuclear material and facilities under their jurisdiction or control exclusively for peaceful purposes, to establish a *bilateral inspectorate* (the Brazilian–Argentine Agency for Accounting and Control of Nuclear Materials (ABACC)), and to conclude with the IAEA a joint agreement for the application of safeguards to all nuclear material in nuclear activities in Argentina and Brazil.

The resulting quadripartite comprehensive safeguards agreement concluded between Argentina, Brazil, ABACC and the IAEA, which entered into force in 1994, is a unique example of a safeguards agreement concluded at the request of States party to a bilateral non-proliferation arrangement.”⁹⁴

What is remarkable is that the Tlatelolco NWFZ was established among states that were not members of the NPT. Argentina joined the NPT only in February 1995 and Brazil as late as September 1998.

It is worth noting that, more than half a century after the entry into force of the Tlatelolco Treaty, the IAEA has still not been able to draw the so-called “broader conclusion” regarding the absence of undeclared nuclear material and activities in Brazil and Argentina.

94. <https://www.iaea.org/sites/default/files/16/12/legalframeworkforsafeguards.pdf>

The Rarotonga Treaty

The “South Pacific Nuclear Free Zone Treaty” or Treaty of Rarotonga⁹⁵ bans the use, testing, and possession of nuclear weapons within the borders of the zone.

It was signed by the South Pacific nations⁹⁶ on 6 August 1985, came into force on 11 December 1986, and has since been ratified by all of those states.

Each Party undertakes not to manufacture or otherwise acquire, possess or have control over any *nuclear explosive device* by any means anywhere inside or outside the South Pacific Nuclear Free Zone; and to prevent in its territory the testing of any nuclear explosive device.

The Treaty has a “Complaints Procedure” that includes a number of successive actions (with no time limit on any of them), including “special inspections” undertaken by inspectors from the states-parties.

If a Consultative Committee of the states-parties “has decided that the Party complained of is in breach of its obligations under this Treaty, or that the above provisions have not been complied with, or at any time at the request of either the complainant or complained of Party, the Parties shall meet promptly at a meeting of the South Pacific Forum.”

There is no provision for bringing the matter to the attention of the IAEA or the UN Security Council.

Australia is the only member of the Rarotonga Treaty that has significant nuclear activities. It is also the very first NNWS for which the IAEA drew the “broader conclusion.”

The Bangkok Treaty

The Treaty on the “Southeast Asia Nuclear Weapon-Free Zone”⁹⁷ or Bangkok Treaty, was signed in December 1995, and entered into force in March 1997. The zone is comprising the territories of all states in Southeast Asia⁹⁸ and their respective continental shelves and Exclusive Economic Zones (EEZ).

It is noteworthy that “*territory*” means “the land territory, internal waters, territorial sea, archipelagic waters, the seabed and the subsoil thereof and the airspace above them.”

95. <http://disarmament.un.org/treaties/t/rarotonga/text>

96. Australia, the Cook Islands, Fiji, Kiribati, Nauru, New Zealand, Niue, Papua New Guinea, The Solomon Islands, Tonga, Tuvalu, Vanuatu and Western Samoa.

97. <http://disarmament.un.org/treaties/t/bangkok/text>

98. Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippine, Singapore, Thailand and Vietnam.

Each state-party undertakes not to, anywhere inside or outside the Zone, test or use nuclear weapons (including any explosive device). Presently all the states-parties have ratified the Comprehensive Nuclear-Test-Ban Treaty (CTBT).⁹⁹

Each state-party has to conclude an agreement with the IAEA for the application of full scope safeguards to its peaceful nuclear activities not later than eighteen months after the entry into force for that state-party of the Treaty. There is no requirement to have an Additional Protocol (AP) in force since such a protocol did not exist at the time, but all of the states-parties have at least signed the AP except Brunei Darussalam.

A state-party shall have the right to request that a fact-finding mission (of inspectors from the states-parties) be sent to another state-party to resolve a situation which may give rise to doubts about compliance with the provisions of the Treaty.

In case that there is a breach of the Treaty by a state-party, and that state-party fails or refuses to take all the steps necessary to bring itself in full compliance, an internal Commission shall decide on any measure it deems appropriate to cope with the situation, including the submission of the matter to the IAEA and, where the situation might endanger international peace and security, the Security Council and the UN General Assembly.

The Treaty of Pelindaba

The African Nuclear Weapons Free Zone Treaty,¹⁰⁰ also known as the Treaty of Pelindaba, was signed in 1996 and came into force in July 2009.¹⁰¹

It prohibits states from conducting research on, developing, manufacturing, stockpiling, acquiring, possessing, or having control over any nuclear explosive device by any means anywhere.

The Treaty allows each Party “to conduct all activities for the peaceful use of nuclear energy under strict non-proliferation measures to provide assurance of exclusively peaceful uses.” However the only requirement is for the parties “to conclude a comprehensive safeguards agreement with IAEA for the purpose of verifying compliance with the undertakings.”

Because in 1996 the Model Additional Protocol to Comprehensive Safeguards (CSA) had not yet been approved by the IAEA Board of Directors, the Pelindaba Treaty does not require the ratification of that Protocol. For those states-parties which do not have concluded an AP with the

99. <https://www.un.org/disarmament/wmd/nuclear/ctbt/>

100. <http://disarmament.un.org/treaties/t/pelindaba/text>

101. <https://www.unidir.org/files/publications/pdfs/the-treaty-of-pelindaba-on-the-african-nuclear-weapon-free-zone-297.pdf>

IAEA, it is impossible for the Agency to draw the broader conclusion of the absence of undeclared nuclear material and activities.¹⁰²

For the purpose of ensuring compliance with their undertakings under this Treaty, the Parties agreed to establish the African Commission on Nuclear Energy (the Commission).

If the Commission considers that there is sufficient substance in a complaint to warrant an inspection in the territory of a Party, the Commission may request the IAEA to conduct such inspection as soon as possible. The Commission may also designate its representatives to accompany the Agency's inspectorate team.

The Organization of African Unity may, if necessary, refer the matter to the UN Security Council.

The Commission may also establish its own inspection mechanism.

The Pelindaba Treaty is unique in that it is the only NWFZ which includes one state - South Africa- that possessed nuclear weapons after ratifying the NPT (in 1991), and one member - Libya - which, although having ratified the NPT in 1975, admitted in 2003 that it had an undeclared nuclear weapons program.¹⁰³

The Treaty of Semipalatinsk

The Central Asian Nuclear-Weapon-Free Zone (CANWFZ) treaty, or Semipalatinsk Treaty¹⁰⁴ is the most recent NWFZ treaty. It is a legally binding commitment by Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan not to research, develop, manufacture, stockpile, acquire, possess or have any control over any nuclear weapons or other nuclear explosive device.

The treaty was signed by the five states on 8 September 2006. By November 2008 the treaty had been ratified by all states-parties, and it entered into force in March 2009.

All five Permanent Members of the UN Security Council signed the Protocol to the treaty on May 6, 2014, which provides legally binding assurances not to use or threaten to use nuclear weapons against Semipalatinsk Treaty parties. As of today, all Permanent Members of the Security Council except the United States have ratified the Protocol.

Member states undertake to conclude with the IAEA and to bring into force a CSA and an AP within 18 months after the treaty's entry into force.

102. Among the 41 African states having ratified the Pelindaba Treaty, three have signed but not ratified the AP: Algeria, Tunisia and Zambia, and two have not signed the AP: Ethiopia and Zimbabwe. All the other states have ratified the AP.

103. South Africa ratified the Pelindaba Treaty in 1998 and Libya did so in 2005.

104. <https://treaties.un.org/doc/Publication/UNTS/No%20Volume/51633/Part/I-51633-080000028023b006.pdf>

The agreement between the Central Asian states is also **the first of the NWFZ treaties to require its members to comply fully with the CTBT.**¹⁰⁵

The Parties also undertake to adopt export controls wherein they commit not provide source or any special fissionable material or related equipment to any non-nuclear weapon state (NNWS) that has not concluded an IAEA Comprehensive Safeguards Agreement and an **Additional Protocol** thereby going beyond the export conditions adopted by the Nuclear Supplier Group (NSG).

Further, the states agree to maintain measures of physical protection of nuclear material, facilities, and equipment that are at least as effective as those recommended by the Convention on Physical Protection of Nuclear Material (CPPNM) as amended.¹⁰⁶

The Semipalatinsk Treaty “does not provide for the establishment of an organization or commission to oversee implementation and compliance/verification. It does, however, provide for annual consultative meetings to review compliance, but no direct linkage exists between this function and IAEA safeguards.”¹⁰⁷

Dispute between the parties involving the interpretation of application of the Treaty shall be settled by negotiations or by other means as may be deemed necessary by the parties. Quite remarkably it is not foreseen to bring any non-compliance issue to the attention of the IAEA or the UN Security Council.

105. The five states had ratified the CTBT already before joining the Semipalatinsk Treaty.

106. The amended text was adopted by consensus 10 July 2005 and entered into force in May 2016.
<https://www.iaea.org/sites/default/files/infocirc274r1m1.pdf>

107. <https://www.nti.org/learn/treaties-and-regimes/central-asia-nuclear-weapon-free-zone-canwz/>

Appendix 2: IAEA experience in verifying states disarmament

The IAEA has gained considerable experience in verifying that all nuclear weapons-related material, equipment and activities had been eliminated or placed under IAEA safeguards in Iraq, South Africa and Libya.

1. The Case of Iraq

Disarming Iraq started in 1991 after its withdrawal from Kuwait, and the adoption by the UN Security Council of resolution 687, setting out the terms of the ceasefire agreement and deciding that Iraq shall unconditionally accept urgent on-site inspections and the destruction and removal of all its nuclear-weapon-usable materials and all assets relevant to the design and production of nuclear weapons.

A description of the IAEA Action Team experience in Iraq was admirably described in 2001 by Demetrius Perricos who was the Deputy Leader of the Action Team.¹⁰⁸

Two Leaders of the IAEA Action Team, Garry Dillon (until October 1999) and Jacques Baute, have also reported on their experience.¹⁰⁹ They concluded that the IAEA's rights of access were “unique in scope and far beyond anything that a state would voluntarily concede.”

2. The Case of South Africa

Before South Africa joined the NPT and concluded a Comprehensive Safeguards Agreement (Infcirc/394) with the IAEA in 1991, some of its nuclear facilities¹¹⁰ were inspected under an INFCIRC/66-type safeguards agreements. Such agreements may include provisions for the safeguarding of non-nuclear materials (such as heavy water and zircaloy), non-nuclear facilities (heavy water production plants) which is not the case under a CSA.

After deciding to terminate its nuclear weapons program in 1989, South Africa proceeded with dismantling its weapons and related infrastructure, including the destruction of weapons-related documentation without the presence of the IAEA.

108. “Understanding the Lessons of Nuclear Inspections and Monitoring in Iraq: A Ten-Year Review: Perricos”, Institute for Science and International Security, June 14-15, 2001. <https://isis-online.org/perricos>

109. <https://inis.iaea.org/collection/NCLCollectionStore/Public/33/034/33034358.pdf>

110. The Atomic Energy Corporation's SAFARI-1 research reactor and hot cell complex, in Pelindaba; and the Koeberg nuclear power reactor units 1 and 2.

How the IAEA gained assurance that all nuclear material used in South Africa's nuclear weapons program had been returned to peaceful use and had been placed under IAEA safeguards, cannot be better described than by three senior IAEA safeguards inspectors involved in this verification challenge. Here is a brief summary of their report.¹¹¹

“South Africa's accession to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) on 10 July 1991 was promptly followed by the signing of a comprehensive safeguards agreement with the IAEA on 16 September 1991. In November 1991, a team of senior IAEA safeguards officials carried out the first inspections under the comprehensive safeguards agreement.

On 24 March 1993, State President de Klerk announced that South Africa had developed and subsequently dismantled a “limited nuclear deterrent capability” involving the design and manufacture of seven gun-assembled devices.

The news prompted the IAEA to augment its safeguards team in South Africa with, among other specialists, nuclear weapons experts. The team's assignment was extended to include assessing the status of the former nuclear weapons program and ascertaining that all nuclear material involved in the program had been recovered and placed under safeguards.

Objectives to inspections took on added dimensions. Assurances were sought that:

- all nuclear material in South Africa had been placed under IAEA safeguards and had been returned to peaceful use,
- all nuclear weapons, their components, and related manufacturing equipment had been destroyed,
- all nuclear weapons-related installations had been fully decommissioned or converted exclusively to peaceful nuclear use, and
- mechanisms that allowed for early detection of restoration of any nuclear weapons capability were put in place.

These objectives were based on the IAEA's rights and obligations under the safeguards agreement and on the stated policy of the South African Government for full transparency with respect to the country's former nuclear weapons program.

111. “Nuclear verification in South Africa, Verifying South Africa's declared nuclear inventory, and the termination of its weapons program, was a complex task”, by Adolf von Baeckmann, Garry Dillon, and Demetrius Perricos, IAEA BULLETIN, 1/1995.

<https://www.iaea.org/sites/default/files/publications/magazines/bulletin/bull37-1/37105394248.pdf>

South African State System of Accounting and Control (SSAC) and facility operators provided insight into the facilities and their operating procedures.

The complex task of assessing the *completeness* of the declared nuclear inventory was carried out by a team of senior members of the IAEA Department of Safeguards. It required cooperation from the State authorities regarding the provision of access to defunct facilities and historical operating records.

Remaining records, in the form of “build history” logbooks for the completed weapons and the experimental devices, were examined and compared with the dismantling listings. Identification numbers of remaining components were compared and found to be consistent with those shown in the records.

The IAEA team visited all facilities identified as having connection with the former nuclear weapons program. It is appropriate to record the active co-operation of the South African authorities in arranging for access to all facilities that the team requested to visit - both those facilities which had been provisionally listed by the South African authorities as having direct connection with the former nuclear weapons program, or with peripheral activities, and additional facilities identified by the team.

By the end of 1994¹¹², the team found no indication to suggest that there remained any sensitive components of the nuclear weapons program which had not been either rendered useless or converted to commercial non-nuclear applications or peaceful nuclear usage.

These general conclusions had strong technical bases and were significantly supported by the transparency and openness of the South African authorities with respect to access to information and locations, in particular the stated and demonstrated willingness of the authorities to facilitate access to any location that the IAEA may identify.

“It is clear that the IAEA would not have been able to achieve the level of confidence it has about the dismantlement of South Africa's nuclear weapons program if South Africa had not provided as extensive cooperation as it did.”¹¹³

South Africa ratified the Additional Protocol in September 2002, and attained a full bill-of-health when the IAEA drew the “broader conclusion” in 2010, allowing for the implementation of “integrated safeguards.”

South Africa ratified the BTWC already in 1975 and the CWC in 1995.

112. Shortly thereafter Nelson Mandela became President of South Africa on 9 May 1994.

113. SANDIA Report, August 2018, “Lessons from Past Nuclear Disarmament: What Worked, What Did Not.” <https://www.osti.gov/servlets/purl/1464881>

3. The Case of Libya

Libya became a party to the NPT on 26 May 1975, and its Comprehensive Safeguards Agreement pursuant to the NPT entered into force on 8 July 1980 (INFCIRC/282).¹¹⁴

Libya became a party to the Biological and Toxin Weapons Convention in 1982.

“On December 19, 2003, Libya announced it would dismantle its weapons of mass destruction (WMD) programs and open the country to immediate and comprehensive verification inspections. Libya pledged to eliminate its nuclear weapons programs, subject to International Atomic Energy Agency (IAEA) verification; eliminate ballistic missiles with a 300 km range or greater and a payload of 500 kilograms; accept international inspections to fulfill Nuclear Nonproliferation Treaty (NPT) obligations; and sign the Additional Protocol. Further, Libya would eliminate all chemical weapons stocks and munitions and accede to the Chemical Weapons Convention (CWC); and allow immediate inspections and monitoring to verify these actions. Since December 2003, Libya has also agreed to abide by the Missile Technology Control Regime (MTCR) guidelines and signed the Comprehensive Test Ban Treaty.”¹¹⁵

How Colonel Gaddafi was convinced by British and American negotiators to take this decision has been well described by two prominent investigation journalists, Douglas Frantz and Joseph Meyer.¹¹⁶

Following Gaddafi's announcement:

- IAEA inspectors went to Libya on 27 December 2003.
- On 6 January 2004, Libya acceded to the CWC which entered into force on 5 February 2004. OPCW inspectors visited Libya for the first time immediately thereafter.
- On 6 January 2004, Libya ratified the Comprehensive Test Ban Treaty.
- On January 22, 2004, documents containing nuclear weapons design information was sent to the United States¹¹⁷ and days later, U.S. officials airlifted about 55,000 pounds of documents and components from Libya's nuclear and ballistic missile programs to Oak Ridge, Tennessee.

114. See “Chronology of Libya's Disarmament and Relations with the United States”, Arms Control Association, January 2018. <https://www.armscontrol.org/factsheets/LibyaChronology>

115. Disarming Libya: Weapons of Mass Destruction, April 22, 2004 – September 22, 2006
<https://www.everycrsreport.com/reports/RS21823.html>

See also: <https://www.nytimes.com/2003/12/21/world/secret-diplomacy-won-libyan-pledge-on-arms.html>

116. <https://www.latimes.com/archives/la-xpm-2005-mar-13-fg-libya13-story.html>

117. As mentioned in the IAEA report GOV/2004/12 of 20 February 2004 (§30): “Libya has acknowledged that it had received [from A.Q. Khan, the former head of Pakistan's enrichment facility] documentation related to nuclear weapon design and fabrication from a foreign source. Libya has stated that these documents were the only such documentation existing in Libya. Libyan authorities stated, however, that two copies of these documents were provided to the UK and the USA prior to the Agency's visit in December 2003. The Agency placed the original documents under its seal on 31 December 2003. The documents were reviewed by Agency experts on 20 January 2004, and again placed under Agency seal before being transferred to the USA.

- On 25 February 2004, a tripartite contract between Libya, the Russian Federation and the IAEA was signed to ship fresh highly enriched uranium (HEU) from Libya to Russia.¹¹⁸
- Libya signed the Additional Protocol on 10 March 2004 and committed, pending its entry into force, to act as if the AP were in force as of 29 December 2003.¹¹⁹

As stated in the IAEA Board report of 28 May 2004: “*Libyan authorities have provided prompt, unhindered access to all locations requested by the Agency and to all relevant equipment and material declared to be in Libya. The Agency has held extensive discussions with senior Libyan nuclear authorities in an attempt to gain a complete understanding of Libya’s past nuclear activities.*”¹²⁰

Thanks to Libya's cooperation, already in September 2004, at a hearing before the U.S. House of Representatives, Assistant Secretary of State for Verification and Compliance Paula DeSutter, could declare in her testimony that:

“We have verified with reasonable certainty that Libya has eliminated or has set in place the elimination of all its WMD and MTCR-class missile programs. [...]

The results of Libya's decision are truly breathtaking. I would not have thought it possible 10 months ago that all significant components of Libya's nuclear program would be in Tennessee -- or elsewhere outside the country -- rather than in Tripoli. All this is only possible because of the strategic commitment by Libya to rid itself of WMD and long-range missiles.

It is even more significant that Libya's commitment was not made with preconditions. There was no freeze proposal, no attempts at concealment or delaying tactics as we see in North Korea and Iran, no deals other than a mutual commitment to act in good faith.”¹²¹

Libya ratified the AP in August 2006, and the IAEA was able to draw the “broader conclusion” in 2008.

On 11 January 2018, the Director-General of the OPCW, Ambassador Ahmet Üzümcü, applauded the complete elimination of Schedule 2 chemical materials¹²² removed from Libya which were transported to Germany for destruction. The Director General stated: “Today’s event

118. https://isis-online.org/uploads/isis-reports/documents/IAEA_Libya_28May2004.pdf

119. <http://www.securitycouncilreport.org/atf/cf/%7B65BF9B-6D27-4E9C-8CD3-CF6E4FF96FF9%7D/Disarm%20GOV200412.pdf> point 7.

120. https://isis-online.org/uploads/isis-reports/documents/IAEA_Libya_28May2004.pdf

121. <https://2009-2017.state.gov/s/l/2004/78305.htm>

122. these are the second most dangerous products as defined in the “Annex on Chemicals” of the CWC <https://www.opcw.org/chemical-weapons-convention/annexes/annex-chemicals/annex-chemicals>

marks a historic occasion for disarmament and international security. It heralds the end of Libya's chemical demilitarization process."¹²³

123. <https://www.opcw.org/media-centre/news/2018/01/opcw-director-general-praises-complete-destruction-libyas-chemical-weapon>

An Israeli Vision of a Middle East NWFZ

Ariel (Eli) Levite

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Preface

Pierre Goldschmidt, in his insightful essay, lays out a comprehensive vision of a Middle Eastern Weapons of Mass Destruction Free Zone (WMDFZ) from a detached, analytical perspective. One that truly concentrates primarily on one element of such a regional Zone, namely a Nuclear Weapons Free Zone (NWFZ). It is rather demanding, in fact practically impossible to match his contribution by presenting “The Israeli Vision” of such a Zone if only because Israel rejects out of hand the Egyptian initiative to create an unprecedented WMDFZ. And no corresponding Israeli vision of a NWFZ really exists. For Israelis, the whole idea of creating such an arrangement presently seems so far out of sight, in fact out of mind, to belie any symmetric effort to capture its official thinking on this initiative. This was true before the merciless Hamas onslaught on Israel recently, and this traumatic event virtually guarantees that in any foreseeable future, Israel will prioritize retention of indigenous capabilities, freedom of action and bilateral assistance of its allies to defend itself over any multilateral security arrangement that encroaches on the former.

Moreover, even the effort to devote some intellectual, let alone diplomatic, energy to such an exercise (which the UNGA has endorsed over Israeli objections) looks, to the Israeli government, out of touch with present geostrategic realities. They deem preoccupation with such exercises naïve to the point of being not merely futile but even irresponsible because they both inspire false hopes for progress and divert precious energy from creating a truly constructive regional environment for such deliberations.

Under these circumstances, the best one can do is to complement Goldschmidt's formidable tour d'horizon with a personal perspective on the creation of such a Zone. While this perspective is informed by some past official Israeli statements on this matter, it necessarily draws heavily on one's own experience in working the issue in the context of the late and lamented demise of the Middle East Arms Control and Regional Security (ACRS) multilateral Working Group in the 1991–1994-time frame. It is further enriched by more generic work undertaken since at the Carnegie Endowment on nuclear nonproliferation, arms control, and disarmament.

Outlook on the Nuclear Option

A key to understanding Israeli attitude towards the NWFZ concept lies with deciphering its core toward its nuclear option. As I personally read it, for Israelis the nuclear option serves a couple of fundamental goals all at once. It provides an existential hedge against an uncertain future in which one of its foes might try to challenge its very existence. It serves not merely to deter adversaries but also to reassure its own population, world Jewry, Israeli allies, and even foreign investors that Israel can prevent and withstand even the most acute threats to its security. It serves to alert some of Israel's allies that failing to stop alarming proliferation trends in the Middle East or depriving Israel of material and other support might force it to turn its restrained nuclear option into a full-fledged nuclear posture. Finally, Israelis firmly believe that their current nuclear posture, and the reassurance about it that it has provided over the years, make their nuclear option highly responsible, non-provocative, and in no way a catalyst to nuclear proliferation in or beyond the Middle East or a hindrance to dealings with other nuclear programs of genuine concern.

Three nuances of this approach are worth noting. First, that the nuclear option is designed to enable Israel to address *by itself* all types of threats to Israel, not merely nuclear ones. Historically these included massive conventional attacks (territorial and others) against its heartland and population centers, as well as employment of biological and chemical weapons. Second, Israel believes that these threats might even originate from outside to the Middle East region, regardless of how some define it, potentially emanating directly or indirectly for further away lands, such as Pakistan. Third, Israel's approach factors in the permissive attitude the international community manifests towards alarming nuclear activity in regional countries (especially Iran) and practical acquiescence to these states' encroachment (and in some blatant cases also outright cheating, as has been and remains the case not only with Iran but also Syria), on their safeguards and even NPT obligations.

Nor is Israel oblivious to the prospect that external assistance to nuclear programs in the region (such as the support the DPRK has provided Syria) could rapidly transform the capabilities of its regional foes. This implies that confining one's outlook to contemporary indigenous capabilities of countries in the region hardly provides the basis for a realistic threat assessment or a timely early warning. Hence Israel's highly restrained nuclear option must remain robust enough to cope with rapid transformation in the nuclear threat scene because its own surge capacity to deal with such a scenario is inherently limited and very difficult to reconstruct if ever given up.

Implications for an NWFZ

Many of the positions that Israel has formally adopted in the past toward negotiating a NWFZ (and others it can be expected to espouse in the future) derive directly from the core tenets of Israel's approach outlined above. These are likely to translate into the following seven principles.

First, Israel would need to verify other nations' conduct by itself, employing its national technical means, leveraging and reinforcing them by bilateral and multilateral instruments enshrined in any denuclearization agreement. Neither global treaties nor global monitoring and verification arrangements would suffice to give Israel an adequate level of confidence that the key parties it is worried about would truly comply with their disarmament or nonproliferation obligations.

Second, Israel will not settle for IAEA Safeguards, even in their most elaborate form (namely the AP- INCIRC 415), to serve as the core of a multinational verification scheme of a Middle Eastern NWFZ. While these, as Goldschmidt envisages, would be an important component of such a regime, political, legal, and operational concerns will make Israel insist on a tailor-made arrangement. Having witnessed repeated politicization of IAEA decision making on delicate matters both at the organizational (the Secretariat) level, as well as within its Board of Governors level, Israel has to assume that political pressures could well preclude the Agency from exercising its legal mandate to the fullest (e.g. on demanding and carrying out Special Inspections without the consent of the Inspected State Party (ISP), on inspecting military facilities, on gaining access to sites, documents, and people). Israel would similarly have to assume that politics could dissuade the Agency from fully reporting disconcerting findings in a timely fashion and/or subsequently preclude the Agency from reporting such cases to the UN Security Council.

To address these concerns in the context of a Middle East NWFZ, one might anticipate Israel to look for several synergistic multinational remedies to this predicament. Safeguards focused on fissile material holdings and activities would have to be complemented by a verification regime focused on the entire spectrum of nuclear weaponization and militarization activities, including possible nuclearization of dual capable missiles and other means of delivery. The former could be modeled on an expanded version of the principles (though not the implementation modalities) of Section T of the JCPOA and/or Annex II of the NSG Guidelines. The latter could be partially inspired by the MTCR as well as HCOG, but in both cases, beyond the vexing issues associated with delineating their scope, serious consideration would also have to be given to both the organizational aspects and the operational modalities, to ascertain that they would strike the right balance between responsiveness, intrusiveness, accountability, and protection of sensitive information and assets of the ISPs.

Third, Israel must assume that in extremis, it might have to act on its own on warnings of alarming nuclear developments in the region. Given the profound implications this requirement poses for its defense and military planning, Israel must insist on building a sufficiently robust compliance regime into any denuclearization agreement. What it may look like would have to be given

serious consideration. Perhaps it could assume the form of a snap back sanctions arrangement, inspired by the JCPOA model, that Israel could unilaterally trigger. But sanctions by themselves will likely prove insufficient to dissuade and respond to treaty violations. Hence the only way to partially offset the necessity for Israel to rely exclusively on unilateral coercive measures might be credible international guarantees for enforcement actions.

Fourth, the proven utility of its nuclear option for both deterrence and reassurance purposes inevitably means that Israel would have to assume profound risks in the event that the NWFZ would require it to cap, downgrade, and/or open up its nuclear capabilities. Consequently, it is virtually inconceivable that Israel would agree to seriously contemplate undertaking such a step before a fundamental (and largely irreversible) transformation of its relationship with all Arab states and Iran had taken place. Such transformation would have to include both formal recognition and extended period political normalization between Israel and *all* its neighbors. These conditions have been an important lubricant of any serious arms control or regional disarmament arrangements elsewhere in the world.

Fifth, for the same reason, Israel would likely have to insist that NWFZ would go into effect as the very last step of an elaborate and prolonged regional process of confidence and security building, arms control, as well as chemical and biological disarmament.

Sixth, for purposes of an NWFZ, Israel would adopt a much broader definition of the Middle East than the one Pierre Goldschmidt envisages, one encompassing all Arab states as well as Iran, but perhaps excluding Türkiye as a core regional state. Israel would have to insist that entry into force of a Middle Eastern NWFZ would be dependent on accession by them all, deeming any omissions glaring and unacceptable. Nor is Israel likely to even enter negotiations on such a Zone before all key states in this region come to the table and meet the fourth and fifth conditions above for fear that it would be later subjected to pressure to make further concessions to any package that was already agreed upon with the others in order to accommodate demands from some significant absentees. Moreover, as with other nuclear free zones, Israel would probably expect commitments toward the Zone from regional states to be complemented by binding subsidiary arrangements from all other nuclear weapons states, and other states bordering on the region (e.g., Türkiye). These would have to guarantee neither to deploy on land, assist (or allow transfer) in the region of nuclear technologies inconsistent with the Zone's obligations, and assist in the monitoring of compliance with those obligations, if requested to.

Seventh, Israel is painfully conscious of the fact that significant territories in the region are not controlled by internationally recognized governments, and that in several other areas such governments do exist but are in no position to effectively control and impose their authority across their entire territory where powerful non-governmental military or para-military organizations operate (for example in Lebanon and Iraq, and even Syria). Some of these not only possess but also periodically employ advanced military capabilities against Israel. This leaves Israel with little choice but to insist on finding creative yet effective solutions to address this

lacuna, fearing that WMD programs or capabilities might be developed or concealed there, as in the case of Afghanistan. There are no inspiring precedents that one may draw here, which could make addressing this challenge a particularly acute sticking point.

Finally, we ought to consider one other salient issue that has not yet received attention. Namely, which nuclear and related activities and facilities would be deemed permissible under an NWFZ. The more advanced and comprehensive the indigenous capabilities permitted under the NWFZ, the broader and tighter the verification and enforcement regime would have to be, and the greater will be Israeli insistence on its ability to unilaterally trigger action to address and redress compliance concerns. In parallel, Israel can be simultaneously expected to insist on measures to protect itself against false allegations and abusive demands for inspections by other parties. While it is unclear what type of a balance can be struck here that would assuage both Israeli concerns, it does seem plausible that Israel would insist on broader and tighter restrictions on activities than those permissible under other NWFZ's, such as development of a so called "peaceful Nuclear Explosive Device" allowed under the Tlatelolco Treaty.

A similar dilemma would likely arise about a withdrawal clause from a Middle East NWFZ treaty. It seems a safe bet that Israel would insist on its right to withdraw from such a treaty in all circumstances in which it would deem its implementation to encroach on its national security, either because the treaty mechanisms fail to address proliferation concerns or are being abused to harass Israel. It will be difficult to reconcile such an Israel demand with a likely expectation from other participants that they enjoy an equal right of withdrawal. What will make this issue even more salient is the dilemma of whether parties withdrawing from this treaty would be entitled to retain sensitive nuclear assets they have accumulated before it went in force, permitting them to sustain a de facto nuclear hedge just in case one becomes necessary down the road but also raising concerns about faithful compliance with its core obligations.

A heated debate is also likely to follow in Israel on how to strike an acceptable balance between insisting on unilateral privileges under a NWFZ treaty (exceptionalism) and settling for parity in return for receiving ironclad security guarantees for assistance and backing in situations when other parties to the Zone significantly abuse their membership.

Concluding Thoughts

Israel approaches the proposals to establish a regional NWFZ or WMDFZ skeptically, viewing them first and foremost as a crude means to disarm Israel prior to challenging its very existence. Israel's show of diplomatic flexibility to address the nuclear disarmament issue in ACRS as well as follow-up UN sponsored settings has met with very disappointing Arab reactions, further reinforcing this conclusion and causing Israeli positions to harden further. The recent Hamas attack, which Iran so visibly supports, is bound to make Israel even less likely to repeat its flexible diplomatic approach. Perhaps Israel's attitude would undergo some change if one or more other

states in the region succeed in crossing the nuclear threshold. Although, such a development is more likely than not to lead to the opposite result, namely causing Israel's attitudes to harden further. Barring such a phase shift one cannot realistically expect Israel to view more favorably nuclear disarmament talks of any type.

One could envisage Israel re-entering regional security talks in the Middle East, contemplating some regional arms control arrangements, and even joining (or as appropriate, acceding) several global nonproliferation or arms limitation treaties. In the right context, Israel might even be amenable to accepting and implementing some such measures in the nuclear realm (a CTBT immediately comes to mind here). But it is practically inconceivable that any government in Israel would ever seriously consider negotiating, let alone joining, an NWFZ before regional conditions fundamentally change for the better. Israel does not subscribe to the view that creation of an NWFZ would facilitate progress toward regional accommodation and views the sequence as completely reversed.

It is most likely, therefore, that, absent a radical transformation of the Middle East and Israel's role therein, Israel would not consider a NWFZ a plausible scheme to explore. And even then, its skepticism is bound to manifest itself in its positions on the sequence and composition of negotiating such a treaty as well as the timing and conditions for its implementation.

About the Authors

Pierre Goldschmidt was a nonresident senior associate at the Carnegie Endowment from mid-2005 to the end of 2017. Goldschmidt was the deputy director general and head of the Department of Safeguards at the International Atomic Energy Agency (IAEA) from May 1999 to June 2005. The Department of Safeguards is responsible for verifying that nuclear material placed under safeguards is not diverted to nuclear weapons or other nuclear explosive devices and that there is no undeclared nuclear material or activities in non-nuclear-weapon states party to the Nuclear Non-Proliferation Treaty. Before the IAEA, Goldschmidt was director general of SYNATOM, the company responsible for the fuel supply and spent-fuel management of seven Belgian nuclear plants, for twelve years. He was a member of the Directoire of EURODIF, the large French uranium-enrichment company, for six years. Goldschmidt was a member of the European Nuclear Society's High Scientific Council and has headed numerous European and international committees, acting as chairman of the Uranium Institute in London (now the World Nuclear Association), the Organisation des Producteurs d'Énergie Nucléaire in Paris, and the Advisory Committee of the EURATOM Supply Agency. In November 2005, he became doctor honoris causa of the University of Brussels. He was nominated Chevalier de la Légion d'Honneur (France) in 2009 and knighted by the king of Belgium in 2012. Among a number of cultural and scientific awards, he received the 2008 Joseph A. Burton Forum Award of the American Physical Society. Goldschmidt is the author of more than 100 publications, including: "A Top-Down Approach to a NWFZ in the Middle East" (EU Non-Proliferation Consortium Seminar, November 5, 2012); "The Iranian Nuclear Issue: Negotiating a Win-Win Solution after Baghdad" (NATO Parliamentary Assembly, May 26, 2012); and "Safeguards Noncompliance: A Challenge for the IAEA and the UN Security Council" (*Arms Control Today*, Vol. 40, January/February 2010).

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Missile Defense" (with Shlomo Brom), in Kelleher, Catherine Mcardle and Peter Dombrowski (eds.), *Regional Missile Defense from a Global Perspective*, Stanford University Press, 2015.

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