ASEAN's WMD Scorecard

The Association of Southeast Asian Nations in the Global Safety, Security and Nonproliferation Regimes

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Executive Summary

With several Southeast Asian countries set to invest in nuclear power programs, the time is ripe to examine their adherence to and implementation of nonproliferation treaties, conventions, and other related instruments. The steady growth of their biotech and chemical industries also makes such an analysis timely. This paper provides a dispassionate, fact-rich examination of the safety, security, and nonproliferation landscape in Southeast Asia. It is meant to serve as a baseline in assessing further Southeast Asian endorsement of relevant nonproliferation and other related instruments as the states of the region move forward with their nuclear energy plans and expand their bio-chemical industries.

The paper is organized in five parts. Part one analyzes the regional status of the main treaties and agreements governing the nuclear nonproliferation domain. Part two examines the status of the biological and chemical nonproliferation and disarmament instruments. Part three looks at the status of the arrangement in place dealing with ballistic missiles. Part four describes the Southeast Asian endorsement status of the nuclear safety and security conventions and codes of conduct. Finally, part five discusses the region's participation status in the ad hoc initiatives targeted at non-state actors.

The conclusions of the paper, of which all relevant information is summarized in the appendix in several tables, are threefold. First, adherence to and implementation of nonproliferation treaties, conventions, and other related instruments vary considerably in Southeast Asia, with some states having endorsed many texts and others only the main ones. Second, important progress has been made in recent years, but more remains to be done, particularly in nuclear safety and security and in terms of participation in and implementation of ad hoc initiatives targeted at non-state actors. Third, progress demands greater regional coordination and cooperation, which can be enhanced through active and applied track-II diplomatic forums.

Introduction

It was only in the 2000s that Southeast Asian nations began to consider investing seriously in nuclear power programs. The rationale for these decisions is the same as in other regions of the world: to meet rising electricity demands and ensure energy security, energy autonomy, and the diversification of supply. Prestige considerations associated with joining the nuclear power club and a strong marketing push by vendors may have also played a role in some countries.[1]

This surge of interest in nuclear energy has triggered a number of concerns. One concern is the possibility that nuclear materials could be diverted for military purposes. None of the countries of the Association of Southeast Asian Nations (ASEAN), however, have any plans to introduce uranium enrichment and plutonium reprocessing—the critical technologies for a nuclear weapon program. Moreover, proliferation ambitions are absent in the region. With the possible exception of Myanmar, where there have been lingering questions about its nuclear and missile intentions and capabilities (and alleged cooperation with North Korea), all other Southeast Asian states do not consider nuclear weapons and other weapons of mass destruction (WMD) to be useful for national security or national status purposes. Only Indonesia had a short-lived interest in acquiring nuclear weapons, but that was in the early 1960s and all states of the region have since declared Southeast Asia to be a nuclear-weapon-free zone (NWFZ). Yet many of them could do more to burnish their nonproliferation credentials. The Additional Protocol, for instance, is in force only in Indonesia, the Philippines, and Singapore. Numerous vulnerabilities also remain in national trade controls over dual-use goods and technologies, upon which the region's emerging nuclear energy programs (and growing biotech and chemical industries) rely heavily. These vulnerabilities have been exploited already, notably by A. Q. Khan, the Pakistani nuclear scientist and metallurgical engineer who ran an international proliferation network and manufactured centrifuge components in Malaysia.

Other concerns are linked to nuclear safety and security: the impact of a nuclear accident or a nuclear terrorist attack in Southeast Asia. In the aftermath of the Fukushima Daiichi nuclear disaster in Japan, in particular, worries have been raised about the safety of nuclear power in a region prone to earthquakes, tsunamis, floods, volcanic eruptions, where bureaucratic corruption is rampant, and where there is little safety culture. The presence of home-grown terrorist (and piracy) activity in Southeast Asia, most notably the *Jemaah Islamiyah* network, has added to these fears. Finally, in addition to the safety risks in the event of a nuclear accident and the physical security concerns relating to the theft of nuclear materials for a terrorist attack, the risks posed by nuclear waste have been at issue. The above-ground dry cask storage of spent fuel—the common practice used around the world to deal with the problem of waste management—not only creates political problems because of the "not-in-my-backyard" mentality (particularly in heavily populated areas), but it also presents a latent proliferation risk.

[1] For a comprehensive assessment of nuclear energy programs and their associated dangers in Southeast Asia and in the South Pacific, see *Preventing Nuclear Dangers in Southeast Asia and Australasia* (London: The International Institute for Strategic Studies, 2009).

This paper describes the status of WMD nonproliferation treaties, agreements, and other related instruments in the 10 ASEAN countries: Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.

Nuclear weapons

Nuclear Nonproliferation Treaty

The Nuclear Nonproliferation Treaty (NPT) is the linchpin of the global nonproliferation regime. It is the most universally accepted arms control treaty in history, with only three holdout states (India, Israel, and Pakistan) and one state which decided to withdraw (North Korea). The treaty was concluded in July 1968 and entered into force in March 1970. It is based on the three pillars of nonproliferation, disarmament, and peaceful use. It reflects two main bargains. In exchange for states parties without nuclear weapons (Non-Nuclear Weapons States or NNWS) agreeing not to manufacture or acquire them, 1) their inherent right to use nuclear technology for peaceful purposes is recognized and technology holders are required to cooperate in sharing the application of nuclear energy, and 2) the Nuclear Weapons States (NWS) (China, France, Russia, the United Kingdom, and the United States) agree to pursue negotiations toward nuclear disarmament, and all states parties agree to make progress toward general and complete disarmament. There is also a third implicit bargain: states agreeing not to manufacture or acquire nuclear weapons are more secure knowing that the majority of their neighbors have similarly agreed to do so.

The NPT is in force in every ASEAN state. Indonesia, Laos, Malaysia, the Philippines, and Singapore signed the treaty the year it came into effect or shortly thereafter and they all ratified it in the 1970s. Cambodia and Thailand acceded to it in 1972. Brunei Darussalam and Vietnam acceded only in 1985 and 1982, respectively. By 1992, when Myanmar completed its accession procedure, all ASEAN states were NPT parties. Cambodia's and the Philippines' commitment to the NPT is also reinforced by their respective constitutions. Article 54 of Cambodia's constitution, which was enacted in 1993, states that "The manufacturing, use, storage of nuclear, chemical, or biological weapons shall be absolutely prohibited." Similarly, Section 8 of the Philippines's constitution, which was enacted in 1987, declares that "The Philippines, consistent with the national interest, adopts and pursues a policy of freedom from nuclear weapons in its territory."

Among the ASEAN countries, only Indonesia had nuclear weapon aspirations. In the mid-1960s, under the leadership of President Sukarno, the country considered acquiring these weapons. In July 1965, Sukarno stated that "God willing, Indonesia will shortly produce its own atom bomb."[2] He was reportedly motivated by a perceived threat to Indonesian security from the West.[3] He may also have considered that nuclear weapon

[2] For a comprehensive account of Indonesia's short-lived ambitions to develop nuclear weapons, see Robert M. Cornejo, "When Sukarno Sought the Bomb: Indonesian Nuclear Aspirations in the Mid-1960s," *Nonproliferation Review*, vol. 7, no. 2, Summer 2000, pp. 31-43.
[3] *Ibid.*, pp. 36-37.

development would have helped him to build up domestic support at a time when the country was deeply divided politically. But Indonesia's ambitions were short-lived. After Suharto assumed command of the army and subsequently took over the presidency (1967), he agreed to international agreements on nonproliferation: Indonesia signed the NPT two years after it came into effect, in 1970, and ratified it in 1979. Since then, there has been no question about Indonesia's commitment to the NPT. Over the years, its emphasis has been on encouraging the NWS to take concrete steps toward disarmament, as is the case of many ASEAN states. In 1992, it created the Non-Aligned Movement (NAM) Working Group on Disarmament, which it has chaired and coordinated ever since. At the 1995 NPT Review and Extension Conference, it led the resistance from the NAM states against the indefinite extension of the treaty, advocating instead limited extension periods tied to concrete disarmament steps from the NWS. (Indonesia finally agreed to extend the NPT indefinitely, mainly due to the promise of a stronger five-year review mechanism.) To this day, Indonesia remains a champion of nuclear disarmament.

In more recent years, the opaque nature of Myanmar's military regime has led to rumors and speculations about its nuclear intentions and capabilities. Individuals and groups, notably regime defectors, have alleged on numerous occasions that Myanmar is secretly developing a nuclear weapon program in violation of its NPT obligations. In May 2010, for example, the pro-democracy dissident group Democratic Voice of Burma alleged the existence of covert nuclear (and missile) facilities and illicit cooperation with North Korea, supporting their report by a testimony and photographs of former Army Major Sai Thein Win, who had recently defected from Myanmar.[4] Although the report was endorsed by Robert E. Kelley, a former inspector at the International Atomic Energy Agency (IAEA) (who was also a co-author), a number of outside experts were skeptical of the allegations.[5]

As of March 2012, there was no evidence that Myanmar was developing a nuclear weapon program. In June 2011, Myanmar's vice president even reportedly told a visiting US delegation that his country had halted its nuclear research program because the "international community may misunderstand Myanmar over the issue."[6] Myanmar subsequently told the IAEA that "Myanmar is in no position to consider the production and use of nuclear weapons and does not have enough economic strength to do so."[7] Finally, during US Secretary of State Hillary Clinton's first visit to the country in November 2011, Myanmar denied any cooperation with North Korea and stated that it was committed to complying with United Nations Security Council resolutions 1718 and 1874 imposing sanctions against Pyongyang.[8]

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[4] For more information, see <http://www.dvb.no>.
[5] See, for instance, David Albright and Christina Walrond, "Technical Note: Revisiting Bomb Reactors in Burma and an Alleged Burmese Nuclear Weapons Program," *ISIS Report*, April 11, 2011.
[6] Quoted in David Albright and Andrea Stricker, "Myanmar Says Halted Nuclear Research Program: Verification Critical," *ISIS Report*, June 3, 2011.
[7] International Atomic Energy Agency, "Statement by the Leader of Myanmar Delegation H. E. U. Tin Win to the 55th Annual Regular Session of the IAEA General Conference," Vienna, Sept. 19-23, 2011.
[8] Hillary Rodham Clinton, "Press Availability in Nay Pyi Taw, Burma," Dec. 1, 2011.

Comprehensive Nuclear-Test-Ban Treaty

The Comprehensive Nuclear-Test-Ban Treaty (CTBT) obligates its parties "not to carry out any nuclear weapon test explosion or any other nuclear explosion." It is meant to limit both the development by nuclear-armed states of new or more powerful weapons and the spread of nuclear weapon technology to new states. Even though states may be able to manufacture rudimentary atomic weapons without testing, it is likely to be impossible for them to develop the more complex and more powerful thermonuclear weapons, which require testing.

The CTBT was opened to signature in September 1996. That same year, the Preparatory Commission for the CTBT Organization (CTBTO) was set up in Vienna: it is an interim organization tasked with building up the verification regime of the treaty in preparation for its entry into force and with promoting the treaty's universality.[9] As of March 2012, 182 states had signed it and 157 had ratified it. However, the CTBT will not enter into force until the states named in the treaty's Annex 2 (the 44 states that had nuclear power plants or research reactors at the time the treaty was concluded) have all ratified. Eight of these states have yet to do so: China, Egypt, India, Iran, Israel, North Korea, Pakistan, and the United States. Three of them have not signed the CTBT: India, North Korea, and Pakistan.

All ASEAN countries signed the CTBT the year it was open to signature or shortly thereafter. As of March 2012, however, only seven had ratified it. The three holdouts are Brunei Darussalam, Myanmar, and Thailand. It is unclear why these three states have not yet deposited their ratification instruments. It may be that a lack of information about the treaty and its value as well as legislative inertia in the face of competing political priorities account for the delay.

Among the ASEAN countries, there are two Annex 2 states, Indonesia and Vietnam, which ratified the treaty in 2012 and 2000, respectively. Indonesia's recent ratification is particularly noteworthy because Jakarta had stated that it would only ratify after the United States had done so. Its announcement in May 2010 that it would pursue ratification without waiting for the United States (and its subsequent delivery 18 months later) is evidence of Indonesia's strong willingness to lead on nonproliferation and disarmament issues. To commemorate the event, Indonesian Foreign Minister Marty M. Natalegawa declared that ratifying the CTBT showed Jakarta's "commitment to realize the vision of a world free of nuclear weapons."[10]

Bangkok Treaty

The Bangkok Treaty establishes the Southeast Asia Nuclear-Weapon-Free Zone (SEANWFZ). It prohibits its states parties to develop, manufacture or otherwise acquire,

[9] More information about the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization can be found at <http://www.ctbto.org/>.
[10] "FM Submits CTBT Instrument of Ratification to UN Secretary General," Indonesian Foreign Ministry Website, Feb. 7, 2012.

possess, or have control over nuclear weapons; station or test nuclear weapons anywhere inside or outside the treaty zone; take any action to assist or encourage the manufacture or acquisition of any nuclear explosive device by any state; provide source or special fissionable materials or equipment to any NNWS or any NWS unless subject to safeguards agreements with the IAEA; [11] and dump radioactive wastes and other radioactive matter at sea anywhere within the treaty zone as well as the dumping of radioactive wastes and other radioactive matter by anyone in territorial sea of states parties. The treaty zone covers the territories, continental shelves, and exclusive economic zones of the ten ASEAN countries. Verification is achieved through reports by members and the exchange of information, and through the application of IAEA safeguards. The treaty also provides for a Commission for SEANWFZ to oversee implementation and ensure compliance with the various provisions. Finally, the treaty includes protocols under which the five NWS undertake to respect SEANWFZ, not to contribute to any act which violates it, and not to use or threaten to use nuclear weapons against any state party or within the treaty zone.

The Bangkok Treaty was opened for signature in December 1995 and entered into force in March 1997. All ASEAN states signed the treaty in 1995. All ratified it within the next two years, with the exception of the Philippines, which only deposited its instrument of ratification in 2001. Since the late 1990s, one of the primary nonproliferation objectives of the ASEAN Secretariat has been ratification of the protocols by the five NWS: none of them have signed up to them, mainly because the treaty extends the exclusive economic zones of the states parties, potentially restricting the free passage of military ships through the region. In 2011, however, as part of its efforts as ASEAN chair, Indonesia pressed heavily for the acceptance of the Bangkok Treaty protocols by the five NWS. In October 2011, Indonesia and the NWS co-sponsored a resolution in support of the treaty in the UN General Assembly. One month later, ASEAN announced that it had negotiated a tentative agreement with the NWS. Although the specifics of this agreement remain unknown, all parties have referred to the negotiations as a success. It is unclear, however, how domestic ratification procedures would play out in the NWS.

International Atomic Energy Agency Membership

The IAEA was established in Vienna in July 1957. It is an international organization that seeks to promote the peaceful use of nuclear energy and to inhibit its use for military purposes. It provides scientific and technical cooperation as well as international safeguards against the misuse of nuclear technology and materials, and promotes nuclear safety and nuclear security standards and their implementation.

All ASEAN countries are members of the IAEA, with the exception of Brunei Darussalam, in large part due to its lack of nuclear infrastructure. Most of them joined the

[11] "Source material" includes uranium containing the mixture of isotopes occurring in nature, uranium depleted in the isotope 235 and thorium. "Special fissionable material" includes plutonium-239, uranium-233, and uranium enriched in the isotopes 235 or 233. These definitions are listed in Article XX of the IAEA Statute, which is available at <http://www.iaea.org/About/statute_text.html>.

Agency in the late 1950s and 1960s. Laos, however, only joined in 2011. Cambodia was a member of the IAEA between 1958 and 2003, when it withdrew because he had been in arrears with its dues for several years; it joined again in 2009 after concluding a dues repayment plan with the IAEA.

Comprehensive Safeguards Agreement

In accordance with Article III of the NPT, each NNWS is required to conclude a Comprehensive Safeguards Agreement (CSA) with the IAEA to enable the application of safeguards on all source and special fissionable material in all peaceful nuclear activities. The CSA is called full-scope safeguards because it is applied throughout the country. Safeguards measures, including on-site inspections, visits, and on-going monitoring and evaluation, enable the IAEA to verify that a state is living up to its nonproliferation obligations. The CSA limits the scope of IAEA verification to declared nuclear material and activities. The model text for CSA is published as IAEA document INFCIRC/153.[12]

Full-scope safeguards are in force in every ASEAN state. Seven of the ten ASEAN countries concluded these agreements in the 1970s and 1980s. Myanmar, Cambodia, and Laos concluded theirs in the 1990s and they came into force in April 1995, December 1999, and April 2001, respectively.

As of March 2012, no ASEAN state had been reported as having breached its NPT-required safeguards agreements. As previously noted, there have been lingering questions about Myanmar's nuclear intentions and capabilities, but judgment has been withheld on whether the country has undertaken any activities in violation of its international commitments. For instance, the 2011 State Department Compliance Report indicates that "The US Government continues to be alert to any indications of Burmese nuclear weapons-related activities or intentions to develop a nuclear weapons capability. As of the end of 2010, available information did not support a conclusion that Burma had engaged in activities prohibited by its NPT obligations or IAEA safeguards."[13]

Small Quantities Protocol

For states which have only very small quantities of nuclear material, the CSA allows them to conclude a Small Quantities Protocol (SQP) which holds in abeyance most of the operative provisions of the IAEA's verification tools. Over time, however, concerns have been raised because an SQP makes it difficult for the IAEA to evaluate a state's nuclear program (or lack thereof) or to confirm that a state meets or continues to meet the conditions required for having an SQP. This has led the IAEA Board of Governors to approve in September 2005 a modified SQP text that reduces the number of safeguards measures held in abeyance and makes an SQP unavailable to states with

[12] The document is available at <http://www.iaea.org/Publications/Documents/Infcircs/Others/infcirc153.pdf>.

[13] *Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments* (Washington, DC: Department of State, 2011), p. 18.

existing or planned facilities.[14] Since then, states that already have an SQP have been encouraged to amend it in line with the new provisions, and any state that signs a safeguards agreement with an SQP after September 2005 must accept the modified SQP version.

As of March 2012, five of the ten ASEAN countries had an SQP in force: Brunei Darussalam, Cambodia, Laos, Myanmar, and Singapore. Only Singapore, however, has adopted the modified SQP text (March 2008). Although Brunei, Cambodia, and Laos do not pose nuclear proliferation risks, their nonproliferation credentials would be burnished if they adopted the modified SQP text. Particularly because there have been questions about its nuclear intentions and capabilities, a good argument can be made that Myanmar should also accept the modified SQP text in order to reassure the international community that it does not engage in prohibited nuclear activities. To this day, however, Myanmar has refused to do so.

Additional Protocol

The Additional Protocol (AP) is a legal agreement that grants the IAEA complementary inspection authority to the one provided in underlying CSA. Its goal is to enable the IAEA inspectorate to provide assurance about both declared and possible undeclared activities, i.e., allowing it to verify not only the *correctness*, but also the *completeness* of state declarations. Under the AP, the IAEA is also granted expanded rights of access to information and sites. In other words, an AP considerably boosts the IAEA's ability to detect illicit nuclear activities, including those with no connection to the fuel cycle. The "Model Protocol Additional to the Agreement(s) between State(s) and the International Atomic Energy Agency for the Application of Safeguards" is published as IAEA document INFCIRC/540.[15]

Among the ASEAN countries, only three have an AP in force: Indonesia, the Philippines, and Singapore. Indonesia is the first ASEAN country to have had an AP in force (September 1999). In 2003, it became one of the few countries with which the IAEA was able to implement an "integrated safeguards" approach of combining safeguards tools in the most effective and cost-efficient way; for Indonesia, this included upgraded surveillance systems and short-notice inspections. Although the Philippines signed an AP in September 1997, it did not enter into force before February 2010 because members of the Senate, who are focused predominantly on domestic issues, refused to give priority to what they considered a complicated international text of little positive impact on Filipinos' lives. Similarly, it took two and a half years for Singapore to bring into force the AP it had signed with the IAEA in September 2005: it brought it into force in March 2008.

[14] "Board Moves to Strengthen Nuclear Safeguards System," *IAEA News*, Sept. 23, 2005, <http://www.iaea.org/newscenter/news/2005/strengthening_sg.html>.
[15] The document is available at <http://www.iaea.org/Publications/Documents/Infcircs/1997/infcirc540c.pdf>.

Malaysia, Thailand, and Vietnam have all signed an AP, but as of March 2012, they had yet to ratify it. In all three cases, legislative backlog probably accounts for much of the delay, although there is also a fair amount of resistance to quickly endorse additional safeguards measures heavily promoted by Western powers, notably. It is significant, for instance, that Malaysia signed an AP with the IAEA (and is currently working to put in place the necessary domestic nuclear-related laws and regulations to bring it into force), but that it has strongly argued against making it compulsory for all NPT states parties, as was proposed at NPT review conferences.

In the region, the AP holdouts include Brunei Darussalam, Cambodia, Laos, and Myanmar. Just like these states would burnish their nonproliferation credentials by adopting the modified SPQ text, they would also do so by concluding an AP with the IAEA. This is particularly relevant for Myanmar, which would thus be in a position to raise the level of confidence about its nuclear intentions and capabilities. As the 2011 State Department Compliance Report puts it, "US confidence in Burma's compliance would be enhanced by the adoption of an Additional Protocol."[16]

Biological and Chemical Weapons

Geneva Protocol

The Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous, or Other Cases, and of Bacteriological Methods of Warfare, also known as the Geneva Protocol, prohibits the use of chemical and biological weapons between states. It does not cover internal or civil conflicts nor does it prohibit the production, storage, or transfer of these weapons. Moreover, many states parties held reservations about their right of retaliatory use, *de facto* making the Protocol a no-first-use agreement.

The Protocol was signed in Geneva in June 1925 and it entered into force in February 1928. As of March 2012, seven ASEAN countries were parties to it. The holdouts include Brunei Darussalam, Myanmar, and Singapore. With the exception of Thailand, which signed the Protocol in 1925 and ratified it in 1931, the six other ASEAN countries endorsed it in the 1970s and 1980s.

Biological and Toxin Weapons Convention

The Biological and Toxin Weapons Convention (BTWC) prohibits the development, production, possession, stockpiling, and transfer of biological weapons. The BTWC, however, lacks a formal inspection system to verify that member states are complying with their obligations. Since August 2007, an Implementation Support Unit, based in Geneva, has been in place to provide administrative support and assistance,

[16] *Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments,* p. 18.

national implementation support and assistance, support and assistance for confidence-building measures, and support and assistance for obtaining universality.[17]

The BTWC was opened for signature in April 1972 and entered into force in March 1975. As of March 2012, it had 165 states parties and an additional 12 signatories had yet to ratify it. The BTWC is in force in nine ASEAN countries. The nine ASEAN BTWC states parties signed the Convention the year it was opened for signature or shortly thereafter, with the exception of Brunei Darussalam, which acceded to it in 1991. Ratification took place between 1973 (by Laos and the Philippines) and 1992 (by Indonesia). The only BTWC holdout state in ASEAN is Myanmar, which signed the Convention in 1972, but as of March 2012, had yet to ratify it. Although there is no evidence that any ASEAN state ever developed a biological weapon program, many of them have growing biotechnology, medical, and agricultural industries and could do more to implement the Convention more thoroughly and develop more robust bio-safety and bio-security legal frameworks.

Chemical Weapons Convention

The Chemical Weapons Convention (CWC) prohibits the development, production, acquisition, stockpiling, transfer, and use of chemical weapons, and obligates the states which possess these weapons to destroy them. The CWC's extensive verification system is administered by the Organization for the Prohibition of Chemical Weapons (OPCW), an independent organization based in The Hague.[18]

The CWC was opened for signature in January 1993 and entered into force in April 1997. As of March 2012, the CWC had 188 states parties and two additional signatories had yet to ratify it. Like the BTWC, the CWC is in force in nine ASEAN countries. All 10 ASEAN countries signed the CWC the year it came into effect, in 1993. The Philippines was the first to ratify it (1996) and the latest ratification was by Cambodia in 2005. The only CWC holdout state in ASEAN is Myanmar, whose ratification is pending. There is no evidence that any ASEAN state developed a chemical weapon program. As a matter of fact, Vietnam often cites its historical conflict with the United States (during which herbicides were used as weapons) as its core reason for supporting the complete elimination of chemical weapons. As Vietnamese Ambassador to the OPCW Ha Huy Thong once put it, "As victimized by the toxic chemicals used during the prolong wars, Vietnam is fully aware of the consequences caused by the chemical warfare and strongly supportive of the objectives, universality, and implementation of the CWC."[19]

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[17] More information about the Implementation Support Unit can be found at <http://www.unog.ch/80256EE600585943/(httpPages)/16C37624830EDAE5C12572BC0044DFC1?OpenDocument>.

[18] More information about the Organization for the Prohibition of Chemical Weapons can be found at <http://www.opcw.org/>.

[19] H. E. Ambassador Ha Huy Thong, "The Second Special Session of the Conference of the States Parties to Review the Operation of the Chemical Weapons Convention," April 7-18, 2008.

Ballistic Missiles

Hague Code of Conduct against Ballistic Missile Proliferation

The Hague Code of Conduct against Ballistic Missile Proliferation (HCOC), formerly known as the International Code of Conduct against Ballistic Missile Proliferation, was established in November 2002. It is a *politically* binding arrangement to prevent and curb the proliferation of ballistic missiles, i.e., it formalizes restraint but does not impose (legally binding) constraints. The HCOC also encourages states to report on their ballistic missile programs and alert all other signatories before conducting ballistic missile tests. It is meant to supplement the Missile Technology Control Regime, but unlike the latter, its membership is not restricted.

As of March 2012, the HCOC had 134 participating states. Only three ASEAN countries, Cambodia, the Philippines, and Singapore, are among them. However, no ASEAN state appears interested in developing ballistic missile technology, although there have been unverified allegations about a Myanmar-North Korea missile connection.[20]

Nuclear Safety and Security

Convention on Early Notification of a Nuclear Accident

The Convention on Early Notification of a Nuclear Accident (CENNA) was adopted in September 1986, after the Chernobyl nuclear plant accident. It establishes a notification system for nuclear accidents that have the potential for international trans-boundary release that could be of radiological safety significance for another state. It requires states to report the accident's time, location, radiation release, and other data essential for assessing the situation. Notification is to be made to affected states directly or through the IAEA, and to the IAEA itself.

As of March 2012, the CENNA had 113 states parties and an additional 69 signatories had yet to ratify it. It is in force in seven ASEAN countries. Brunei Darussalam, Cambodia, and Laos are the three holdouts, most probably because of their lack of nuclear infrastructure. Among the seven ASEAN states parties, Indonesia, Malaysia, Thailand, and Vietnam endorsed it the year it came into effect or shortly thereafter, while Myanmar, the Philippines and Singapore acceded to it a decade later.

Convention on Assistance in the Case of Nuclear Accident or Radiological Emergency

The Convention on Assistance in the Case of Nuclear Accident or Radiological Emergency (CACNARE) was also adopted in September 1986, after the Chernobyl nuclear plant accident. It sets out an international framework for cooperation among states parties (and with the IAEA) to facilitate prompt assistance and support in the event

[20] Catherine Boye, Melissa Hanham, and Robert Shaw, "North Korea and Myanmar: A Match for Nuclear Proliferation?" *Bulletin of Atomic Scientists*, Sept. 27, 2010.

of nuclear accidents or radiological emergencies. It requires states to notify the IAEA of their available experts, equipment, and other materials for providing assistance as well as its scope and terms. The IAEA serves as the focal point for such cooperation by channeling information, supporting efforts, and providing its available services.

As of March 2012, the CACNARE had 108 states parties and an additional 68 signatories had yet to ratify it. The signature and ratification status of this convention is almost equivalent to that of the CENNA. The exception is Myanmar, which is not a party to it. The CACNARE, therefore, is in force in Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam. The holdouts include Brunei Darussalam, Cambodia, Laos, and Myanmar.

Convention on Nuclear Safety

The Convention on Nuclear Safety (CNS) was adopted in June 1994. It legally commits states parties operating land-based nuclear power plants to maintaining a high level of safety by meeting international benchmarks. The obligations are mainly based on the principles contained in the IAEA Safety Fundamentals document "Fundamental Safety Principles (SF-1)."[21] The CNS is first and foremost an incentive instrument: it is not designed to ensure fulfilment of obligations by the states parties through control and sanction but, rather, is based on their common interest to achieve the higher levels of safety. These levels of safety are developed and promoted through regular meetings among the states parties. The CNS also commits its states parties to regularly submitting reports on the implementation of their obligations for "peer review" at meetings to be held at the IAEA.

As of March 2012, the CNS had 108 states parties and an additional 68 signatories had yet to ratify it. It is in force only in Indonesia, Singapore, and Vietnam, with the latter acceding to it in 2010. The Philippines signed the CNS the year it came into effect, in 1994, but as of March 2012, it had yet to ratify it. Brunei Darussalam, Cambodia, Laos, Malaysia, Myanmar, and Thailand are non-signatories to the CNS.

Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management

The Joint Convention was open for signature in September 1997 and entered into force in June 2001. It applies to spent fuel and radioactive waste resulting from civilian nuclear reactors applications and to spent fuel and radioactive waste from military and defense programs if and when such materials are transferred permanently to and managed within exclusively civilian programs, or when declared as spent fuel or radioactive waste for the purpose of the Convention by the contracting party. The Convention also applies to planned and controlled releases into the environment of liquid or gaseous radioactive materials from regulated nuclear facilities. It calls for regular review meetings of contracting parties, where each of them is required to submit a national report that addresses measures taken to implement each of the obligations of the Convention.

[21] The document is available at <http://www-pub.iaea.org/MTCD/publications/PDF/Pub1273_web.pdf>.

As of March 2012, the Joint Convention had 63 states parties and an additional 42 signatories had yet to ratify it. Indonesia is the only ASEAN state party to it. The Philippines has been a signatory since 1998, but, as of March 2012, it had yet to ratify it.

Code of Conduct on the Safety and Security of Radioactive Sources, and supplementary Guidance on the Import and Export of Radioactive Sources

The IAEA Code of Conduct identifies several measures that states should undertake in order to enhance the safety and security of radioactive sources. Since the events of September 11, 2001, the Code has been strengthened: the revised Code was approved by the IAEA Board of Governors in September 2003 and in Resolution GC(47)/RES/7, the IAEA General Conference welcomed the Board's approval while recognizing that the Code is not a legally binding document.[22] In order to develop practical guidance on how to comply with the Code, the IAEA Board of Governors also approved the Guidance on the Import and Export of Radioactive Sources in September 2004.[23]

Adherence to the Code of Conduct and the Guidance varies greatly among ASEAN countries. Only Indonesia, Malaysia, the Philippines, Thailand and Vietnam have taken procedures to endorse the two documents. Brunei Darussalam, Cambodia, Laos, Myanmar, and Singapore have not.

Convention on the Physical Protection of Nuclear Material

The Convention on the Physical Protection of Nuclear Material (CPPNM) was adopted in October 1979 and has been in force since February 1987. It establishes measures to prevent, detect, and punish offenses related to nuclear material. Notably, it obligates states parties to make specific arrangements and meet defined standards of physical protection for international shipments of nuclear material for peaceful purposes; undertake not to export or import nuclear materials or allow their transit through their territory unless they have received assurances that these materials will be protected during international transport; cooperate in the recovery and protection of stolen nuclear material; criminalize specified acts; and prosecute or extradite those accused of committing such acts.

As of March 2012, the CPPNM had 145 states parties and an additional 44 signatories had yet to ratify it. Among ASEAN countries, the Convention has been endorsed only by Cambodia, Indonesia, Laos, and the Philippines. While Indonesia and the Philippines became parties in the 1980s, Cambodia and Laos acceded to it in 2006 and 2010, respectively.

[22] The document is available at <http://www-pub.iaea.org/MTCD/publications/PDF/Code-2004_web.pdf>.
[23] The document is available at <http://www-pub.iaea.org/MTCD/publications/PDF/Imp-Exp_web.pdf>.

Amendment to the Convention on the Physical Protection of Nuclear Material

In July 2005, CPPNM states parties adopted by consensus an Amendment to the Convention. Whereas the obligations for physical protection under the CPPNM covered nuclear material during international transport, the Amendment 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 offenses.

The Amendment will enter into force when it has been ratified by two-thirds of the CPPNM states parties. As of March 2012, it had 55 contracting states. Of the CPPNM ASEAN states parties, only Indonesia has ratified it (2010).

The Proliferation-Terrorism Nexus

International Convention for the Suppression of Acts of Nuclear Terrorism

The International Convention for the Suppression of Acts of Nuclear Terrorism (ICSANT), also known as the Nuclear Terrorism Convention, was adopted in September 2005 under the auspices of the United Nations. It is designed to criminalize acts of nuclear terrorism, physically protect nuclear and radiological materials as recommended by the IAEA, and promote police and judicial cooperation to prevent, investigate, and punish those acts. The ICSANT is significant because it requires states to cooperate with one another and with the IAEA to prevent, detect, and respond to nuclear and radiological terrorism threats. As Jack Boureston and Tanya Ogilvie-White have put it, "The convention thus plays an important role in establishing nuclear security as an international norm and in legitimizing UN and IAEA authority in shaping and overseeing the nuclear security regime."[24]

As of March 2012, the ICSANT had 79 states parties and an additional 115 signatories had yet to ratify it. Only five ASEAN countries have endorsed the ICSANT: Cambodia, Malaysia, the Philippines, Singapore, and Thailand. All five, however, have yet to ratify it. Brunei Darussalam, Indonesia, Laos, Myanmar, and Vietnam are not yet parties to it.

Proliferation Security Initiative

The Proliferation Security Initiative (PSI) was launched by the United States in May 2003. It is an informal, voluntary multinational initiative that conducts interdiction of WMD shipments and related goods both to state and non-state actors. PSI participants carry out cargo interdictions at sea, in the air, or on land. The core participating states

[24] Jack Boureston and Tanya Ogilvie-White, "Seeking Nuclear Security Through Greater International Coordination," *CFR International Institutions and Global Governance Program*, March 2010, p. 4.

hold meetings, conduct joint interdiction training exercises, and have issued a "Statement of Interdiction Principles."[25]

As of March 2012, the PSI included nearly 100 participating states (plus the Holy See), although the extent of participation varies by country. The PSI has no secretariat, but an Operational Experts Group made up of 21 participating states coordinate activities. Among the ten ASEAN countries, only Brunei Darussalam, Cambodia, the Philippines, and Singapore participate in the PSI.

Global Initiative to Combat Nuclear Terrorism

The Global Initiative to Combat Nuclear Terrorism (GICNT) was launched by the United States and Russia in July 2006. It is a voluntary initiative of states working together to improve capacity on a national and international level in order to prevent, detect, and respond to a nuclear terrorist event. Partner states organize and host workshops, conferences, and exercises to share best practices and implement the GICNT "Statement of Principles."[26] The United States and Russia serve as co-chairs of the Initiative and Spain serves as coordinator of its Implementation and Assessment Group.

As of March 2012, the GICNT included 85 participating states and four observers (the IAEA, the European Union, the International Criminal Police Organization, and the United Nations Office on Drugs and Crime). Among ASEAN countries, only Cambodia, the Philippines, Singapore, Thailand, and Vietnam participate in the GICNT.

United Nations Security Council Resolution 1540

United Nations Security Council Resolution (UNSCR) 1540 was adopted unanimously in April 2004 as a response to the growing threat that non-state actors might acquire and use WMD. Because it was adopted under Chapter VII of the UN Charter, it is a legally binding document that requires *all* UN member states to implement domestic legislation to prevent non-state actors from manufacturing, acquiring, or transporting WMD within or from their territory. It covers a wide range of measures, including nuclear security and physical protection, export and border controls, and the prevention of terrorism financing. UNSCR 1540 also calls on states to cooperate in preventing the illicit trafficking of WMD and related materials, and to provide human, financial, structural, and institutional assistance to states lacking the capacity to implement the Resolution.

A Committee was established to monitor and promote the implementation of these national legal measures, and states have been required to submit a report on their

[25] The PSI "Statement of Interdiction Principles" is available at <http://www.state.gov/t/isn/c27726.htm>.
[26] The GICNT "Statement of Principles" is available at <http://www.state.gov/documents/organization/141995.pdf>.

implementation efforts.[27] In addition to collecting and reviewing national reports, the Committee has created a matrix for a number of states in order to present a full picture of the Resolution's implementation status.[28] Originally designed to be temporary, the 1540 Committee has evolved into a more permanent body tasked with collecting information on best practices, sharing information and outreach, and matching the states' needs with offers of assistance. UNSCR 1977 of April 2011 extended its mandate for 10 years.

Implementation of UNSCR 1540 is of paramount importance in Southeast Asia because many countries of the region are investing heavily in manufacturing and new technologies, which substantially boosts their exports. This has resulted in a dramatic increase in capabilities for producing materials and equipment for potential use in WMD programs. Moreover, although there are no nuclear facilities in the region other than research reactors (and small quantities of nuclear material as well as a few uranium deposits), several critical pieces of equipment for nuclear weapon programs can be developed in Southeast Asia, where many of the world's biggest trade routes and transit points are located. As a matter of fact, such pieces have *already* been developed in the region: the A. Q. Khan network used a front company in Malaysia to manufacture a number of components for centrifuge equipment that was shipped to Libya in support of former Libyan leader Colonel Muammar Gadhafi's nuclear weapon program. The growing interest in many ASEAN countries in nuclear energy programs is further reason to adopt strict standards of nonproliferation and transparency, as required by UNSCR 1540. Finally, there are several internal security threats in Southeast Asia and terrorist and/or insurgent groups are operating in at least five ASEAN countries (Indonesia, Malaysia, Myanmar, the Philippines, and Thailand). This has direct and very serious implications for the protection of materials and technology that can be used to developed WMD, hence the importance of UNSCR 1540. As Lawrence Scheinman and Johan Bergenäs have put it,

> In an age characterized by the rise of disaffected, alienated, apocalyptic movements, the last thing that we can afford is the existence of weak links in the chain of control over WMD, their components, or their means of delivery. Today, common security can only be achieved by common efforts [...]. In other words, the global community can either collectively strengthen measures against WMD terrorism, as laid out in resolution 1540, or continue to face the same or increased risk of a terrorist organization acquiring and using a chemical, biological, or nuclear or radiological weapon with all the consequences that would entail for civil society and social order.[29]

Although every state in the region submitted an initial report to the 1540 Committee, these reports vary significantly, both in quality and comprehensiveness.

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[27] In addition to the 1540 Committee website (<http://www.un.org/sc/1540/>), much information about 1540 implementation can be found on the "NTI Nuclear Materials Security Index" at <http://www.ntiindex.org/indicators/domestic-commitments-and-capacity/unscr-1540-implementation/>.
[28] The so-called "1540 Matrix" is available at <http://www.un.org/sc/1540/1540matrix.shtml>.
[29] Lawrence Scheinman and Johan Bergenäs, "Strengthening a Weak Link in the Global Security Chain: Regional Implementation of UN Security Council Resolution 1540," *CNS Feature Stories*, Sept. 9, 2008.

Moreover, many reports do not reflect accurately the states' commitments to timely implementation. Some of them also do not address critical obligations, notably in trade and trans-shipment controls, where with the notable exception of Singapore, most states of the region have weak legal and regulatory systems and mechanisms.

In recent years, however, progress has been made toward implementation of the Resolution. For instance, in April 2010, Malaysia adopted the Strategic Trade Act, a law which went into effect in January 2011 and requires all traders to apply for a permit before engaging in export, transit, trans-shipment, or brokering involving strategic goods listed in the country's control list and unlisted items, i.e., items that may be used in a "restricted activity." (A "restricted activity" is defined as "any activity that supports the development, production, handling, usage, maintenance, storage, inventory or proliferation of any weapon of mass destruction and its delivery systems, or participation in transactions with persons engaged in such activities.") The new law also grants broad powers to law enforcement officers and include several penalties.[30]

Other ASEAN countries have shown an interest in enhancing strategic trade controls. But much still remains to be done for all ASEAN countries to develop "appropriate" and "effective" measures, as required by UNSCR 1540. Until recently, most ASEAN countries viewed the obligations of the Resolution with suspicion and considered multilateral export control regimes as producers' cartels that hinder trade. Limited implementation of UNSCR 1540 in Southeast Asia also stems from insufficient financial and technical resources available to many states in the region, which believe should be allocated to much more important—and more immediate—priorities, such as development or poverty alleviation.[31]

In the region, only Malaysia has expressed a willingness to consider requests from other states for assistance in the areas of legal and regulatory infrastructure, implementation, and/or resources for fulfilling the provision of UNSCR 1540. Four ASEAN countries have requested international assistance in specific areas: Cambodia, the Philippines, Thailand, and Vietnam. Cambodia requested assistance to assist CWC implementation. The Philippines has indicated that it is prepared to cooperate with states able to provide training for its first responders and assistance to develop more stringent border control and stronger physical protection of its research reactor (the PRR-1), as well as enhance and upgrade container and cargo security in several seaports and help draft appropriate laws governing border monitoring. In the same vein, Thailand has stated that it will welcome assistance in implementing UNSCR 1540, notably to develop more effective national export, transit, and trans-shipment controls over WMD, their means of delivery and related dual-use items; Bangkok has also sought advice to identify WMD-related materials and dual-use items and it has requested the hosting of training courses

[30] The text of Malaysia's 2010 Strategic Trade Act is available at <http://www.miti.gov.my/cms/documentstorage/com.tms.cms.document.Document_975730a1-c0a81573-55ff55ff-adef59e5/Strategic%20Trade%20Act%20%202010.pdf>.

[31] For a comprehensive assessment of ASEAN perceptions of UNSCR 1540, see Tanya Ogilvie-White, "Facilitating Implementation of Resolution 1540 in Southeast Asia and the South Pacific" in Lawrence Scheinman (ed.), *Implementing Resolution 1540: The Role of Regional Organizations* (New York and Geneva: United Nations Institute for Disarmament Research, 2008), notably pp. 45-47.

and workshops to exchange views and experience on how to effectively address the transport of illicit WMD and related materials as well as trafficking and brokering. Finally, Vietnam has indicated that it wishes to receive assistance to establish an information technology system to better control the transport of sensitive materials and technology and to obtain equipment to strengthen its control and monitoring capabilities at borders, among other things.

Conclusions

Adherence to and implementation of nonproliferation treaties, agreements, and other related instruments varies greatly in Southeast Asia. Although progress has been made over the past few years, much remains to be done. In the nuclear nonproliferation domain, all 10 ASEAN countries are states parties to the NPT and the Bangkok Treaty, but three of them have yet to ratify the CTBT and many still need to enhance their safeguards agreements with the IAEA in order to improve confidence levels that they are not engaged in illicit activities. In the biological and chemical nonproliferation and disarmament realms, the region has endorsed the BTWC and CWC regimes, with the notable exception of Myanmar, which has signed but has yet to ratify them; all states, however, need to enhance their bio-chemical safety and security frameworks as their industries in this domain grow steadily. There is less support for measures addressing ballistic missiles: only Cambodia, the Philippines, and Singapore have joined the HCOC. In the case of international conventions and measures designed to improve nuclear safety and security, adherence by ASEAN states is still lacking. Initiatives targeted at non-state actors, particularly in order to prevent nuclear terrorism, also lack universality in terms of participation (PSI and GICNT) or full and thorough implementation (UNSCR 1540).

There are multiple reasons why some Southeast Asian countries have not yet adhered to or have been slow to implement nonproliferation treaties, conventions, and other related instruments. Although analyzing these reasons in depth is beyond the scope of this paper, it is important to note that they differ considerably. Some are purely political. By virtue of their NAM membership, some ASEAN states categorically refuse to adhere to and/or implement some of the existing instruments, particularly the newest nonproliferation and counterproliferation requirements outside of universally negotiated agreements. Other political reasons are that these instruments are often perceived with suspicion in the region, as part of a hidden Western agenda meant to hinder trade and development. Indonesia's strong support for the global safety, security, and nonproliferation regimes, for instance, does not fully extend to ad hoc measures that are not under UN auspices or that are led by the United States and its Western allies, and Jakarta has repeatedly expressed skepticism about the need for extensive strategic trade controls in developing economies.[32] Yet the non-adherence to and/or slow implementation of nonproliferation and other related instruments by some Southeast Asia countries is sometimes solely due to a capability problem. Some states merely lack the necessary human, financial, structural, and institutional capability to fully endorse

[32] For a recent analysis of Indonesia's role in the global safety, security, and nonproliferation regimes, see Stephanie Leggi, "The Nonproliferation Tiger: Indonesia's Impact on Nonproliferation in Asia and Beyond," *NTI Issue Brief*, March 5, 2012.

existing instruments. Others do not see any need or value in doing so and, notably, believe that they have more pressing priorities than focus on what they consider very remote security threats.

In light of these trends, regional organizations such as ASEAN could play a significant role to encourage members to adhere to and implement more of the instruments detailed in this paper. In 2007, the ASEAN Regional Forum (ARF) discussed the creation of a new regional body to address nonproliferation and disarmament issues. These discussions resulted in the first ARF Intersessional Meeting on Nonproliferation and Disarmament, which was held in Beijing in July 2009. Since then, three more meetings have taken place in Singapore (July 2010), Las Vegas (February 2011), and Sydney (March 2012). The ARF has shown increased support for these issues, but there is no question that its work could be strengthened. For example, it could help to coordinate implementation of UNSCR 1540. It has been suggested that ASEAN could file a request for UNSCR 1540 assistance on behalf of the region or that it could lead the process of developing relevant model legislation based on regional expertise and external assistance. ASEAN could also serve as a clearinghouse for expertise-sharing and assistance and develop standards and benchmarks for domestic trade and protection controls.[33] Another area where ASEAN could make headway is in the management of the front and back ends of the nuclear fuel cycle. Although none of the 10 ASEAN countries plan on introducing uranium enrichment and plutonium reprocessing, amending the Bangkok Treaty to ban the development of these technologies, thereby making Southeast Asia an enrichment- and reprocessing-free zone, would significantly raise confidence levels that the region would remain free of nuclear weapons. In the same vein, finding a regional solution to spent fuel management would help to minimize the costs as well as to optimize safety, security, and nonproliferation goals.

There is little doubt that implementing these efforts can be achieved in a manner that is consistent with ASEAN's traditions of dialogue, consultation, consensus, and noninterference. These efforts would serve the interests of all Southeast Asian countries because they would contribute to strengthening regional security as well as enhance the leadership role of ASEAN. Track-II diplomatic forums, notably those of the Council for Security Cooperation in the Asia Pacific (CSCAP), are ideal platforms where the mechanics of these efforts can be fleshed out, discussed, and proposed to the official level.[34] Given current dynamics, the revitalization of a Nuclear Energy Experts Group (or NEEG) and the launch of a Bio-Chemical Experts Group at the track-II level should be seriously considered: they could play a critical role in nudging ASEAN states closer to the highest standards of safety, security, and nonproliferation.[35]

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[33] Togzhan Kassenova, "1540 in Practice: Challenges and Opportunities for Southeast Asia," *Policy Analysis Brief*, May 2011, p. 11.

[34] More information about the Council for Security Cooperation in the Asia-Pacific, its activities, and its achievements can be found at <http://www.cscap.org/>.

[35] Between 1998 and 2003, the Council for Security Cooperation in the Asia Pacific convened a Nuclear Energy Experts Group to examine potential nuclear energy transparency measures for the region. More information can be founded at <http://www.cscap.nuctrans.org/>.

Appendices

Table 1. Summary of the Status of Nonproliferation Treaties, Conventions, and Other Related Instruments in ASEAN											
		Brunei	**Cambodia**	**Indonesia**	**Laos**	**Malaysia**	**Myanmar**	**Philippines**	**Singapore**	**Thailand**	**Vietnam**
NPT	S*			X	X	X		X	X		
	R/A*	X	X	X	X	X	X	X	X	X	X
CTBT	S	X	X	X	X	X	X	X	X	X	X
	R/A		X	X	X	X		X	X		X
SEANWFZ	S	X	X	X	X	X	X	X	X	X	X
	R/A	X	X	X	X	X	X	X	X	X	X
IAEA			X	X	X	X	X	X	X	X	X
CSA		X	X	X	X	X	X	X	X	X	X
SQP		X	X		X		X		X		
AP	S					X				X	X
	IF***			X				X	X		
Geneva Protocol	S									X	
	R/A		X	X	X	X		X		X	X
BTWC	S		X	X	X	X	X	X	X	X	X
	R/A	X	X	X	X	X		X	X	X	X
CWC	S	X	X	X	X	X	X	X	X	X	X
	R/A	X	X	X	X	X		X	X	X	X
CENNA	S			X		X				X	
	R/A			X		X	X	X	X	X	X
CACNARE	S			X		X				X	
	R/A			X		X		X	X	X	X
CNS	S			X				X			
	R/A			X					X		X
Joint Convention	S			X				X			
	R/A			X							
CPPNM	S			X				X			
	R/A		X	X	X			X			
CPPNM Amend.	R/A			X							
ICSANT	S		X			X		X	X	X	
	R/A										
HCOC			X					X	X		
PSI		X	X					X	X		
GICNT			X					X	X	X	X

*S = Signed

**R/A = Ratified/Acceded

***IF = In Force

Table 2. Status of the Principal Nuclear Nonproliferation Treaties in ASEAN						
State	**Nuclear Nonproliferation Treaty (NPT, 1968)**		**Comprehensive Nuclear-Test-Ban Treaty (CTBT, 1996)**		**Southeast Asian Nuclear-Weapon-Free Zone Treaty (SEANWFZ, 1995)**	
	Signed	Ratified	Signed	Ratified	Signed	Ratified
Brunei		1985(a)	1997		1995	1996
Cambodia		1972(a)/1987(a)	1996	2000	1995	1997
Indonesia	1970	1979	1996	2012	1995	1997
Laos	1968	1970	1997	2000	1995	1996
Malaysia	1968	1970	1998	2008	1995	1996
Myanmar		1992(a)	1996		1995	1996
Philippines	1968	1972	1996	2001	1995	2001
Singapore	1970	1976	1999	2001	1995	1997
Thailand		1972(a)	1996		1995	1997
Vietnam		1982(a)	1996	2006	1995	1996

(a)= accession

Table 3. IAEA Membership and Status of Nuclear Safeguards in ASEAN				
State	**IAEA membership**	**Small Quantities Protocol (SQP)**	**Comprehensive Safeguards Agreements (CSA)**	**Additional Protocol (AP)**
Brunei		X	In Force: Nov. 1987	
Cambodia	2009	X	In Force: Dec. 1999	
Indonesia	1957		In Force: July 1980	In Force: Sept. 1999
Laos	2011	X	In Force: April 2001	
Malaysia	1969		In Force: Feb. 1972	Signed: Nov. 2005
Myanmar	1957	X	In Force: April 1995	
Philippines	1958		In Force: Oct. 1974	In Force: Feb. 2010
Singapore	1967	Amended: March 2008	In Force: Oct. 1977	In Force: March 2008
Thailand	1957		In Force: May 1974	Signed: Sept. 2005
Vietnam	1957		In Force: Feb. 1990	Signed: Aug. 2007

Table 4. Status of Biological and Chemical Nonproliferation and Disarmament Agreements in ASEAN						
State	**Geneva Protocol (1925)**		**Biological and Toxin Weapons Convention (BTWC, 1972)**		**Chemical Weapons Convention (CWC, 1993)**	
	Signed	Ratified	Signed	Ratified	Signed	Ratified
Brunei				1991(a)	1993	1997
Cambodia		1983(a)	1972	1983	1993	2005
Indonesia		1971(s)	1972	1992	1993	1998
Laos		1989(a)	1972	1973	1993	1997
Malaysia		1970(a)	1972	1991	1993	2000
Myanmar			1972		1993	
Philippines		1973(a)	1972	1973	1993	1996
Singapore			1972	1975	1993	1997
Thailand	1925	1931	1973	1975	1993	2002
Vietnam		1980(a)	1972	1980	1993	1998

(a)= accession

(s) = succession

Table 5.A. Status of Conventions and Codes of Conduct on Nuclear Safety in ASEAN						
State	**Convention on Early Notification of a Nuclear Accident (CENNA, 1986)**		**Convention on Assistance in the Case of Nuclear Accident or Radiological Emergency (CACNARE, 1986)**		**Convention on Nuclear Safety (CNS, 1994)**	
	Signed	Ratified	Signed	Ratified	Signed	Ratified
Brunei						
Cambodia						
Indonesia	1986	1993	1986	1993	1994	2002
Laos						
Malaysia	1987	1987	1987	1987		
Myanmar		1997(a)				
Philippines		1997(a)		1997(a)	1994	
Singapore		1997(a)		1997(a)		1997(a)
Thailand	1987	1989	1987	1989		
Vietnam		1987(a)		1987(a)		2010(a)

(a)= accession

Table 5.B. Status of Conventions and Codes of Conduct on Nuclear Safety in ASEAN						
State	**Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (1997)**		**Code of Conduct of the Safety and Security of Radioactive Sources, and supplementary Guidance on the Import and Export of Radioactive Sources (2003)**			
	Signed	Ratified	The Code	The Guidance		
			Notification*	Notification**	Contact Point***	SAQ Response****
Brunei						
Cambodia						
Indonesia	1997	2011	X		X	
Laos						
Malaysia			X	X	X	X
Myanmar						
Philippines	1998		X	X	X	
Singapore						
Thailand			X	X	X	X
Vietnam			X	X	X	

(a)= accession

*In accordance with operative paragraph 4 of GC(47)/RES/7.B and operative paragraph 7 of GC(48)/RES/10.D

**In accordance with operative paragraph 8 of GC(48)/RES/10.D

***State that have designated a contact point without making the necessary political commitment.

****States are urged to fill out Self-Assessment Questionnaires (SAQ) for the IAEA.

Table 6. Status of Conventions on Nuclear Security in ASEAN					
State	**Convention on the Physical Protection of Nuclear Material (CPPNM, 1979)**		**Amendement to the CPPNM (2005)**	**International Convention for the Suppression of Acts of Nuclear Terrorism (ICSANT, 2005)**	
	Signed	Ratified	Ratified	Signed	Ratified
Brunei					
Cambodia		2006 (a)		2006	
Indonesia	1986	1986	2010		
Laos		2010 (a)			
Malaysia				2005	
Myanmar					
Philippines	1980	1981		2005	
Singapore				2006	
Thailand				2005	
Vietnam					

(a)= accession

Table 7. Status of Other WMD Nonproliferation and Security Initiatives in ASEAN			
State	**Hague Code of Conduct against Ballistic Missile Proliferation (HCOC, 2002)**	**Proliferation Security Initiative (PSI, 2003)**	**Global Initiative to Combat Nuclear Terrorism (GICNT, 2006)**
Brunei		X	
Cambodia	X	X	X
Indonesia			
Laos			
Malaysia			
Myanmar			
Philippines	X	X	X
Singapore	X	X	X
Thailand			X
Vietnam			X

Table 8. Status of UN Security Council Resolution 1540: National Reports Submitted by Member States in ASEAN		
State	**Date of Submission (and Report Symbol)**	**Summary of Contents**
Brunei	December 30, 2004 (S/AC.44/2004/(02)/96)	Five-page report about Brunei Darussalam's accession to the main enforcement measures. The report also describes the relevant national legislations, national enforcement measures, as well as the type of international cooperation that the country has established with other states.
Cambodia	March 21, 2005 (S/AC.44/2004/(02)/110)	Four-page report describing Cambodia's adherence to the main WMD treaties and conventions, with a focus on the Chemical Weapons Convention.
Indonesia	October 28, 2004 (S/AC.44/2004/(02)/45) November 22, 2005 (Add.1)	Five-page report describing Indonesia's relevant legislative actions, executive actions, and enforcement actions, as well as the type of international cooperation the country has established with other states. The 2005 report, a five-page document, provides additional information about Indonesia's legislation to prevent nuclear, biological, and chemical proliferation and to protect against acts of terrorism.
Laos	May 3, 2005 (S/AC.44/2004/(02)/117)	Three-page report describing Laos's relevant legal framework, its enforcement measures, and its accession to the main WMD treaties and conventions.
Malaysia	October 26, 2004 (S/AC.44/2004/(02)/35)	Ten-page report about Malaysia's accession to the main WMD treaties and conventions. The report also describes the country's main relevant laws to prevent nuclear, biological, and chemical proliferation.
Myanmar	April 6, 2005 (S/AC.44/2004/(02)/113)	Five-page report describing Myanmar's systems and mechanisms to prevent WMD from entering its territory. The report also describes the country's relevant legislations as well as its accession to the main WMD treaties and conventions.

Philippines	October 28, 2004 (S/AC.44/2004/(02)/34) October 28, 2005 (Add.1) November 30, 2005 (Add.2) February 6, 2008 (S/AC.44/2007/20)	Fourteen-page report describing the Philippines' relevant legislation in the nuclear, biological, and chemical domains as well as the activities it has undertaken to combat these threats. The first 2005 report, a sixteen-page document, provides a list of the country's accession to the main WMD treaties and conventions as well as the status of the measures it has adopted to date. The second 2005 document and the 2008 report provide updates on the country's activities.
Singapore	October 21, 2004 (S/AC.44/2004/(02)/8) August 29, 2005 (Add.1)	Four-page report describing Singapore's national legislative measures, its Strategic Goods (Control) Act, , its Regulation of Imports and Exports Act, its Chemical Weapons (Prohibition) Act, its Arms Offenses Act, its Arms and Explosives Act, as well as the type of international cooperation that it has established with other states. The 2005 document provides an update of Singapore's activities.
Thailand	November 5, 2004 (S/AC.44/2004/(02)/71)	Five-page report describing Thailand's policy and commitment on weapons nonproliferation. The report also identifies the main relevant government agencies tasked to deal with nuclear, biological, and chemical proliferation. It also describes the country's existing laws and regulations, its national control and border control measures, as well as a number of measures to be implemented. The report closes by highlighting that Thailand requires assistance to implement the Resolution.
Vietnam	October 26, 2004 (S/AC.44/2004/(02)/39) December 12, 2005 (Add.1) March 7, 2008 (S/AC.44/2007/12)	Five-page report describing Vietnam's measures that have been and will be taken to implement the Resolution. The document also describes the country's accession to the main WMD treaties and conventions. The 2005 report is an eight-page document which describes Vietnam's main relevant legislations in the nuclear, biological, and chemical domains. The 2008 report is a five-page document which provides updates to Vietnam's activities to implement the Resolution.

About the Author

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