



# Asia–Pacific and Global Nuclear Orders in the Second Nuclear Age

Ramesh Thakur

## Summary

*All global nuclear risks and threats are present in the Asia–Pacific and in some cases are even more acute in this region. Security complexes and the main drivers of nuclear weapons policy tend to be primarily regional rather than global. Asia is the principal site of strategic rivalry in the second nuclear age and the theatre of the least unlikely nuclear war. The nuclear disarmament norm continues to be breached most egregiously in Asia as the only continent where warhead numbers are growing. The most serious violations of the non-proliferation norm have occurred here in the last two decades and it is the sole site of nuclear testing today. There is no architecture in place to promulgate and police regional regulatory norms and standards for the safe operation of nuclear reactors. And Asia also has some of the most acute nuclear security vulnerabilities.*

1. Of the world's nine nuclear weapons possessor countries – China, India, North Korea, Pakistan, France, Israel, Russia, the United Kingdom and the United States – four are in Asia. Not surprisingly, therefore, nuclear risks and threats that exist globally are also present in Asia, and in some cases are even more acute in this region.<sup>1</sup> It is also worth remembering that security complexes and the main drivers of nuclear weapons policy tend to be primarily regional – and indeed, in Asia–Pacific, subre-

gional<sup>2</sup> – rather than global, although obviously there are cross-linkages between these two and the national levels of analyses.

## The Asia-Centric Second Nuclear Age

2. The first nuclear age was shaped by the overarching ideological rivalry of the bipolar Cold War protagonists, the competitive nuclear arms build-up and doctrines of the two superpowers and the development of robust mechanisms for maintaining strategic stability. Effectively there were the five 1968 Nuclear Non-Proliferation Treaty (NPT)-licit nuclear weapons states (NWS) and the non-NWS, albeit with the ambiguous exception of Israel. Today there are also the non-NPT nuclear-armed states,<sup>3</sup> with two of the three (India, Israel, and Pakistan) being in Asia. In addition, the world's only NPT non-NWS country to have announced its

<sup>2</sup> Moreover, the subregional nuclear insecurity complex across Asia does not always coincide with the geographical subregion. For example in the subcontinent, there is a triangular nuclear relationship between China, India and Pakistan. The other South Asian states are largely irrelevant to the core dynamics of the nuclear equation, although they would be severely impacted with any use of nuclear weapons and with a nuclear accident. By contrast, in Northeast Asia every country is part of the nuclear equations complex. In Southeast Asia and Oceania, no country has or is likely to seek nuclear weapons in the foreseeable future, although Australia is a nuclear umbrella country; some Southeast Asian countries are interested in nuclear power but Oceania is entirely free of nuclear power reactors; and both subregions are covered by nuclear-weapon-free zones.

<sup>3</sup> The NPT's arbitrary chronological definition of a NWS restricts that status to countries that conducted nuclear tests before 1 January 1967 (the five NWS). It is possible to work around the legal restriction by describing any country that possesses nuclear weapons as a nuclear-armed state.

<sup>1</sup> This Policy Brief is based on a paper prepared for the Berlin Conference on Asian Security, 19–21 June 2016.

withdrawal from the treaty in order to pursue nuclear weapons, namely North Korea, is also in Asia. Three US allies depend for their national security on the extended (nuclear) deterrence provided by US nuclear weapons. And of course Asia is the only continent where nuclear weapons have ever been used.

3. The site of great power rivalry has shifted from Europe to Asia in the second nuclear age<sup>4</sup> characterized by a multiplicity of nuclear powers with criss-crossing ties of cooperation and conflict, the fragility of command and control systems, the critical importance of cybersecurity, threat perceptions between three or more nuclear-armed states simultaneously,, asymmetric perceptions of the military and political utility of nuclear weapons,<sup>5</sup> and the resulting greater complexity of deterrence relations between the nine nuclear-armed states. Changes in the nuclear posture of one can generate a cascading effect on several others. The nuclear relationship between India and Pakistan, for example, is conceptually, politically and strategically deeply intertwined with China as a nuclear power. The strategic boundary between nuclear warheads and conventional precision munitions is being steadily eroded.

4. The NPT is the normative anchor of the global nuclear orders on disarmament, non-proliferation, safety and security. Asia – and only Asia – contains states with the full spectrum of nuclear weapons status in relation to the NPT: a NWS, two non-NPT nuclear-armed states, an NPT defector state, three umbrella states, and a vast majority of non-NWS States Parties to the NPT.

5. China is Asia's only NPT-recognized NWS, and also the sole Asian permanent member of the United Nations Security Council which functions as the global enforcement authority in the maintenance of international peace and security, including nuclear peace. Pakistan is the only one of the nine nuclear-armed states

where nuclear weapons were developed by the military, are essentially under military control and the decision to use them will be made by the military rather than civilian leadership. India is the only nuclear-armed state to have territorial conflicts with two nuclear-armed states, China and Pakistan, over long and contested borders.

6. North Korea is unique in the family of nations: a communist dynastic dictatorship (the third generation is currently in control) that has committed acts of aggression and serial provocations against its more populous, prosperous and democratic southern kin state; acts of state criminality in kidnapping Japanese citizens in Japan and smuggling them into North Korea; and acts of terrorism. It is similarly unique in relation to the non-proliferation regime as the world's sole NPT defector state.

7. The other three Asian nuclear-armed states also have their own sets of troubling issues and problems. These include inventing the legal fiction of a 'peaceful nuclear explosion' while violating the terms of international civilian nuclear assistance; acting as the enabler for another nuclear-armed state; and pursuing a policy of managed nuclear instability vis-à-vis a major irredentist claim on a neighbour.<sup>6</sup>

8. There are far fewer nuclear weapons today than during the Cold War and they play a lesser role in shaping relations between Moscow and Washington, so that the risk of a nuclear war between them is very low.<sup>7</sup> Yet the overall risks of nuclear war have grown with more countries with weaker command and control systems in more unstable regions possessing these deadly weapons, terrorists wanting them and vulnerability to human error, system malfunction and cyber attack.

9. The geostrategic environment of the subcontinent had no parallel in the Cold War, with shared borders, major territorial disputes, history of many wars since 1945, compressed

<sup>4</sup> Paul Bracken, *The Second Nuclear Age: Strategy, Danger, and the New Power Politics* (New York: Henry Holt, 2012); Toshi Yoshihara and James R. Holmes, eds., *Strategy in the Second Nuclear Age: Power, Ambition, and the Ultimate Weapon* (Washington DC: Georgetown University Press, 2012); Gregory D. Koblentz, *Strategic Stability in the Second Nuclear Age* (New York: Council on Foreign Relations, Special Report No. 71, November 2014).

<sup>5</sup> Toby Dalton and George Perkovich, *India's Nuclear Options and Escalation Dominance* (Washington DC: Carnegie Endowment for International Peace, May 2016), pp. 5, 11; [http://carnegieendowment.org/files/CP\\_273\\_India\\_Nuclear\\_Final.pdf](http://carnegieendowment.org/files/CP_273_India_Nuclear_Final.pdf)

<sup>6</sup> Shaun Gregory, "Pak toxic chaos plan changes nuke debate," *Times of India*, 6 March 2011, <http://timesofindia.indiatimes.com/home/sunday-times/all-that-matters/Pak-toxic-chaos-plan-changes-uke-debate/articleshow/7637964.cms>.

<sup>7</sup> However, the flare-up of geopolitical tensions over Ukraine in 2014 heightened the danger of an unintended nuclear war: Robert E. Berls and Leon Ratz, "Rising Nuclear Dangers: Assessing the Risk of Nuclear Use in the Euro-Atlantic Region," *NTI Paper* (Washington: Nuclear Threat Initiative, October 2015), [http://www.nti.org/media/pdfs/NTI\\_Rising\\_Nuclear\\_Dangers\\_Paper\\_FINAL.pdf?\\_id=1443443566](http://www.nti.org/media/pdfs/NTI_Rising_Nuclear_Dangers_Paper_FINAL.pdf?_id=1443443566).

timeframes for using or losing nuclear weapons, and political volatility and instability.<sup>8</sup> Even a “limited” regional nuclear war, in which India and Pakistan used 50 Hiroshima-size (15kt) bombs each, could, in addition to direct casualties, lead to a famine that kills up to two billion people.<sup>9</sup>

10. The toxic cocktail of growing nuclear stockpiles, expanding nuclear platforms, irredentist territorial claims and out of control jihadist groups makes the Indian subcontinent a high risk region of concern.<sup>10</sup> Premeditated large-scale conventional attacks and preemptive nuclear strikes seem unlikely pathways to a nuclear exchange between India and Pakistan or China and India. But the subcontinental rivalry is not free of the risk of a nuclear exchange triggered by acts of terror committed on Indian territory by individuals and groups linked to networks across the border in Pakistan. No one can be confident that another Mumbai style terrorist attack (November 2008) on a major Indian city will not take place, with links back to jihadists based in Pakistan;<sup>11</sup> that India will not retaliate militarily; and that this will not escalate to another war which then crosses the nuclear threshold. That is, the brittleness of deterrence stability is a function of fragile crisis stability mechanisms. Moreover, each party will feel more insecure with every increase in the other’s nuclear weapons stockpiles and capabilities.

11. Northeast Asia is the world’s most dangerous cockpit for a possible nuclear war that could directly involve three NWS (China, Russia, the US) plus North Korea as a non-NPT nuclear-armed state and South Korea, Japan and Taiwan as major US allies. North Korea’s nuclear threat and the risk of war in Korea involving US troops, potential direct conflict with China, risk to the Taiwan Straits, risk to South Korea and Japan, and risk of DPRK direct use

against the US homeland are critical and demand immediate, urgent attention.

### Evading the Duty to Disarm

12. All the nine nuclear-armed states pay only lip-service to the ultimate elimination of nuclear weapons while their actions with respect to weapons arsenals, fissile material stocks, force modernization plans, declared doctrines and observable deployment practices demonstrate the intent to retain nuclear weapons indefinitely.<sup>12</sup> Even though their combined stockpiles total only three per cent of global nuclear arsenals, warhead numbers are growing in all four Asian nuclear-armed states (and in none of the other five).

13. Of the four, only China is legally bound by Article 6 of the NPT to nuclear disarmament. Instead, heavily dependent on land-based missiles, China is actively modernizing them to increase the survivability and strengthen the retaliatory capabilities of its nuclear forces.<sup>13</sup> With relatively small nuclear forces, China is concerned that its nuclear deterrent is vulnerable to planned US conventional precision munitions that pose a potential threat to Beijing’s conventional and nuclear weapons systems, as well as its command-and-control centres.<sup>14</sup> A credible, near-continuous sea-based deterrent capability would significantly increase the survivability of its nuclear forces.

14. The growing accuracy and lethality of US conventional precision munitions, the continuing interest in ballistic missile defence (BMD) systems and the US refusal to adopt a no-first-use policy makes many Chinese nervous that Washington harbours doubts about China’s survivable second-strike retaliatory capability. Chinese anxieties are strengthened by the US refusal to acknowledge mutual vulnerability vis-à-vis China. According to Gregory Kulacki, in “a significant – and dangerous – change in Chinese policy,” China’s military planners have for the first time begun to discuss putting the country’s nuclear missiles on high alert, believ-

<sup>8</sup> Ramesh Thakur, “The Inconsequential Gains and Lasting Insecurities of India’s Nuclear Weaponization,” *International Affairs* 90:5 (2014), pp. 1101–24.

<sup>9</sup> Ira Helfand, *Nuclear Famine: Two Billion People at Risk? Global Impacts of Limited Nuclear War on Agriculture, Food Supplies, and Human Nutrition* (Somerville, MA: International Physicians for the Prevention of Nuclear War, 2013). <http://www.ippnw.org/pdf/nuclear-famine-two-billion-at-risk-2013.pdf>

<sup>10</sup> See Pervez Hoodbhoy and Zia Mian, “Nuclear battles in South Asia,” *Bulletin of the Atomic Scientists*, 4 May 2016, <http://thebulletin.org/nuclear-battles-south-asia9415>.

<sup>11</sup> Ramesh Thakur, “Delinking Destiny from Geography: The Changing Balance of India–Pakistan Relations,” *India Quarterly* 67:3 (September 2011), pp. 197–212.

<sup>12</sup> Gareth Evans, Tanya Ogilvie-White and Ramesh Thakur, *Nuclear Weapons: The State of Play 2015* (Canberra: Centre for Nuclear Non-Proliferation and Disarmament, 2015), <https://cnnd.crawford.anu.edu.au/publication/cnnd/5328/nuclear-weapons-state-play-2015>.

<sup>13</sup> Li Bin, “Tracking Chinese Strategic Mobile Missiles,” *Science & Global Security* 15:1 (2007), pp. 4–5.

<sup>14</sup> Douglas Barrie, “China’s Hypersonic Test – Behind the Headlines,” *Military Balance Blog* (IISS), 30 January 2014, <http://www.iiss.org/en/militarybalanceblog/blogsections/2014-3bea/january-1138/barrie-china-d0a8>.

ing that this “would be a step toward assured retaliation.”<sup>15</sup> If China follows the Russian and US lead, how long before the posture proliferates to India and Pakistan? Like nuclear terrorism, the launch of nuclear weapons on high alert by mistake, rogue launch, miscalculation of incoming information, or through system malfunction is low probability but high impact.

15. North Korea withdrew from the NPT in January 2003<sup>16</sup> and has conducted four nuclear weapon tests (2006, 2009, 2013, 2016) and several rocket and missile launches, although its capacity to target and hit other countries is still very limited. In May 2015 Pyongyang boasted it had successfully tested a submarine launched ballistic missile (SLBM). On 6 January 2016 it claimed to have successfully tested a hydrogen bomb followed by a rocket launch. As its restarted plutonium separation and uranium enrichment programs ramp up to full production, it will soon have the capability to produce several nuclear bombs every year. We will return to Korea in the next section on non-proliferation.

16. Neither India nor Pakistan has signed the NPT and therefore neither is bound by the Article 6 obligation to disarm. That said, it is difficult to challenge the claim – based on the NPT, the repeated demands from successive NPT Review Conferences, a multitude of UN General Assembly resolutions over the decades, and the humanitarian impacts initiative that has attracted over 150 states and a broad cross-section of civil society actors in the global arms control community – that there is a global norm to eliminate nuclear weapons.

17. India is estimated to possess around 110 warheads, is producing more bombs annually, and is working to create survivable nuclear forces based on a mix of different land, sea and

air-based launch platforms. It is also developing and testing a mix of short, medium and long range missiles, plus nuclear-powered ballistic missile submarines. It has ambitions to design and build multistage ballistic rockets, remote sensing and communications satellites, and monitoring and guidance systems for putting different types of vehicles into space orbit. India’s declared nuclear doctrine is “credible minimum nuclear deterrence.” India says it will not be the first to use nuclear weapons but would “respond with punitive retaliation should deterrence fail”<sup>17</sup> and India is attacked by a weapon of mass destruction (WMD).

18. Pakistan has had a nuclear weapons program since the early 1970s and is currently estimated to have about 120 warheads for delivery by missiles and aircraft. Its nuclear arsenal is growing the fastest of any country in the world. Like India, its nuclear doctrine is based on the principle of “credible minimum deterrence,” with resort to nuclear weapons envisaged only in response to an existential conventional or WMD threat.<sup>18</sup> Pakistan’s nuclear doctrine is India-specific, although, particularly after the US raid on Abbotabad in May 2011 that killed Osama bin Laden and in light of continuing strong differences of opinion on regional security issues, the expansion and modernization of Pakistan’s nuclear arsenal may also be driven partly by fears of a US raid to capture or secure its nuclear forces.<sup>19</sup>

19. The development of tactical nuclear weapons as a counter to India’s superiority in conventional arms, and to compensate for its lack of strategic depth, would seem to leave open the possibility of first use of nuclear weapons against India, particularly in the case of invasion. Deployment of battlefield nuclear weapons requires the delegation of command and control to military units in the field. This increases the risks of miscalculation, accident, theft, and infiltration by militant groups.

20. In addition to four of the world’s nine nuclear-armed states, Asia also accounts for several states that rely on the US for their security,

<sup>15</sup> Gregory Kulacki, *China’s Military Calls for Putting Its Nuclear Forces on Alert* (Cambridge MA: Union of Concerned Scientists, January 2016), p. 1. <http://www.ucsusa.org/sites/default/files/attach/2016/02/China-Hair-Trigger-full-report.pdf>.

<sup>16</sup> A State Party has the right to withdraw from the NPT if it decides that “extraordinary events, related to the subject matter of [the] Treaty, have jeopardized the supreme interests of its country” (Article 10). North Korea announced its withdrawal from the NPT on 12 March 1993 but then suspended it on 11 June 1993, the day before the decision would have taken effect. In January 2003, North Korea ended the suspension, which for all practical purposes meant withdrawal with immediate effect. Christer Ahlstrom, “Withdrawal from arms control treaties,” *SIPRI Yearbook 2004: Armaments, Disarmament and International Security* (Oxford: Oxford University Press, 2004), pp. 763–77.

<sup>17</sup> Draft Report of the National Security Advisory Board on *Indian Nuclear Doctrine*, 17 August 1999; <http://www.fas.org/nuke/guide/india/doctrine/990817-indnucl.htm>.

<sup>18</sup> Ayaz Gul, “Pakistan rejects US call for curbing tactical nuke weapons,” *Global Security Newswire*, 26 March 2016, <http://www.globalsecurity.org/wmd/library/news/pakistan/2016/pakistan-160326-voa01.htm>.

<sup>19</sup> Shyam Saran, “Dealing with Pakistan’s brinkmanship,” *Hindu*, 7 December 2012.



including some who are explicitly umbrella states: that is, countries that rely on the US extended nuclear deterrence. The argument has been expressed very sharply in the recent Australian Defence White Paper: “Only the nuclear and conventional military capabilities of the United States can offer effective deterrence against the possibility of nuclear threats against Australia.”<sup>20</sup> The reliance of Japan and South Korea on the US nuclear umbrella is, if anything, even greater, given their propinquity to North Korea and China (as well as Russia as the third Northeast Asian nuclear-armed state). The particular significance of the US commitment here is seen as lying in its very strong incentive for Japan and South Korea not to acquire a deterrent nuclear capability of their own. If the various efforts at bilateral BMD cooperation involving the US, Australia, Japan and South Korea develop into a US-led Asia Pacific missile defence shield, China is likely to accelerate the expansion of its own nuclear and ballistic missile programs and possibly adopt a somewhat more robust nuclear deterrence doctrine.

### Breaching the Non-Proliferation Norm

21. The first substantial breach of the NPT-centred non-proliferation norm occurred by Israel in the 1970s. On 18 May 1974, India conducted its first test, describing it disingenuously as a “peaceful nuclear explosion.” India thus bears the primary responsibility for introducing the nuclear element into the subcontinental rivalry by heightening Pakistan’s sense of insecurity and vulnerability to its more powerful neighbour. In 1998, India conducted another five nuclear tests and this time proclaimed itself to be a nuclear weapons possessor state.<sup>21</sup> Pakistan followed with six tests (to match India’s six in 1974 and 1998 combined) of its own on 28 and 30 May 1998. Since then both countries have been more or less accepted as de facto nuclear-armed states.

22. India has also been granted a country-specific waiver by the Nuclear Suppliers Group for international trade in sensitive nuclear materials and signed bilateral civil nuclear supply agreements with several countries, despite its

status as an NPT non-signatory. However justified these might be on grounds of India’s self-proclaimed impeccable record of non-proliferation to third countries and as a means of drawing the country with growing geopolitical heft and diplomatic weight into global regimes, they have caused undoubted damage to the existing non-proliferation normative instruments.<sup>22</sup>

23. For its part, China was the enabler for Pakistan’s nuclear weapons. In 1983 a US State Department report concluded that there was “unambiguous evidence” that Pakistan was actively pursuing a nuclear weapons program. Thomas Reed, Secretary of the Air Force under presidents Gerald Ford and Jimmy Carter, has claimed that Pakistan’s first nuclear weapon test was carried out for it by China on 26 May 1990.<sup>23</sup> The “deliberate act of proliferation” by China began in earnest in 1982 with the transfer of weapons-grade uranium and a blueprint for making a bomb that China had already tested.<sup>24</sup> Pakistan built 7-12 nuclear warheads “based on the Chinese design, assisted by Chinese scientists and Chinese technology.”<sup>25</sup>

24. The Comprehensive Test Ban Treaty (CTBT), signed by 183 countries and ratified by 164, is a key barrier to both vertical and horizontal proliferation. This still leaves eight countries, out of 44 with nuclear reactors listed in Annex 2 of the treaty, whose ratifications are needed to bring it into force: China, Egypt, India, Iran, Israel, North Korea, Pakistan, and the US.<sup>26</sup> The other Asia-Pacific non-signatories

<sup>22</sup> Ramesh Thakur, “Follow the Yellowcake Road: Balancing Australia’s Security, Commercial and Bilateral National Interests against International Anti-Nuclear Interests,” *International Affairs* 89:4 (2013), pp. 943–61.

<sup>23</sup> Interview with Thomas C. Reed in Alex Kingsbury, “Why China helped countries like Pakistan, North Korea build nuclear bombs,” *U.S. News & World Report*, 2 January 2009, <http://www.usnews.com/articles/news/world/2009/01/02/why-china-helped-countries-like-pakistan-north-korea-build-nuclear-bombs.html>. Reed also claims that China intentionally proliferated to North Korea too. See also William J. Broad, “Hidden travels of the atomic bomb,” *New York Times*, 8 December 2008; Dan Vergano, “Scientists ponder how to get nuclear genie back in the bottle,” *USA Today*, 14 December 2008, [http://www.usatoday.com/tech/science/2008-12-14-nuclear-weapons\\_N.htm](http://www.usatoday.com/tech/science/2008-12-14-nuclear-weapons_N.htm); and Thomas C. Reed and Danny B. Stillman (former director of the technical intelligence division at Los Alamos National Laboratory), *The Nuclear Express: A Political History of the Bomb and Its Proliferation* (Zenith Press, 2009).

<sup>24</sup> R. Jeffrey Smith and Joby Warrick “A nuclear power’s act of proliferation,” *Washington Post*, 13 November 2009.

<sup>25</sup> Tim Weiner, “U.S. and Chinese aid was essential as Pakistan built bomb,” *International Herald Tribune*, 2 June 1998.

<sup>26</sup> <http://www.ctbto.org/the-treaty/>.

<sup>20</sup> Department of Defence, *2016 Defence White Paper* (Canberra: Government of Australia, 2016), paragraph 5.20.

<sup>21</sup> George Perkovich, *India’s Nuclear Bomb: The Impact on Global Proliferation* (Berkeley CA: University of California Press, 1999).

are Bhutan, Mauritius, Tonga and Tuvalu. Myanmar, Nepal, Papua New Guinea, Solomon Islands, Sri Lanka, Thailand and Timor-Leste have signed but not yet ratified. Since the treaty's adoption in 1996, the handful of nuclear-weapon test explosions have all been in Asia in India, Pakistan and North Korea.

25. China, India and Pakistan maintain voluntary moratoria on testing. China also supports the treaty's early entry into force in principle, participates in the work of the Preparatory Commission for the CTBT Organization (CTBTO) and is preparing for national implementation of the treaty.<sup>27</sup> China's formal ratification would likely quickly follow US ratification, although Beijing neither acknowledges nor implies any link to ratification by another state. Similarly, it is not clear why India has not yet ratified, as there are no technical requirements for more tests within its professed doctrine of credible nuclear deterrence. Nor is there any reason why, as an earnest of its good faith in engaging with the global physical infrastructure, India could not actively participate in the CTBTO global system even without signing or ratifying the CTBT.<sup>28</sup>

26. A related treaty-based regime that does not yet exist but many deeply desire would prohibit additional production of fissile material for nuclear weapons. Pakistan has consistently blocked the adoption of any program of work in the CD in Geneva because it will not agree to negotiations on a fissile materials cut-off treaty (FMCT) in the absence of prior agreement to include existing stocks of weapons-grade fissile material, where it believes itself to be at a disadvantage vis-à-vis India.

27. The Additional Protocol (AP) is a formal document that grants the International Atomic Energy Agency (IAEA) complementary legal authority to verify a state's comprehensive, item-specific or voluntary offer safeguards obligations. Although voluntary, once an AP enters into force it becomes legally binding for the state. In March 2016, 127 states had an AP in force; another 19 had signed but were yet to bring it into force.<sup>29</sup> Countries of the Asia-

Pacific that signed or approved the AP, but for whom it is not yet in force, are Kiribati, Laos, Malaysia, Myanmar, Thailand and Timor Leste, of whom Malaysia and Thailand have significant nuclear activities.

28. The final plank of the non-proliferation structure relevant to Asia-Pacific is nuclear-weapon-free zones (NWFZ) that deepen and extend the scope of the NPT and embed the non-nuclear weapon status of NPT States Parties in additional treaty-based arrangements.<sup>30</sup> Asia-Pacific has two NWFZ covering the South Pacific and Southeast Asia. Mongolia and New Zealand have also declared themselves national NWFZ in law.

### *How to Solve a Problem Like North Korea*

29. North Korea's pursuit of nuclear weapons began in the 1960s, accelerated in the 1980s and led to overt weaponization with four tests in the last decade. Its nuclear program has been enshrined in the constitution and embedded in party ideology, making reversal procedurally more challenging and politically more costly. To keep the scale and gravity of the North Korean threat in perspective, nevertheless, let us note that its nuclear tests have been on the small side, its claims are often exaggerated, and many of its attempted missile tests are known flops. Thus Pyongyang is still some distance from acquiring a reliable and deliverable nuclear weapon capability. But it does have a rudimentary capability and a few small bombs, and both are set to expand. Empirically, therefore, North Korea now belongs in the disarmament basket but its unique NPT-defector status imposes the straitjacket of having to deal with it still through the non-proliferation lens.

30. Can the Iranian model for getting to a denuclearization agreement be applied to the Northeast Asian pariah regime? Some key differences between the two situations are worth noting. Iran did not possess a single nuclear weapon. The challenge was to cap its capability in order to prevent a potential breakout.<sup>31</sup> By contrast, North Korea already has several and its delivery capability is also growing. In other words the train of non-proliferation left the Pyongyang station a decade ago and is now out

<sup>27</sup> Viyyanna Sastry, "The Poor Prospects of the CTBT Entering Into Force," 9 January 2012, Institute for Defence Studies and Analyses,

[http://www.idsa.in/idsacomments/ThePoorProspectsoftheCTBTEnteringIntoForce\\_cvsastroy\\_090112](http://www.idsa.in/idsacomments/ThePoorProspectsoftheCTBTEnteringIntoForce_cvsastroy_090112).

<sup>28</sup> Ramesh Thakur and John Carlson, "How India can support the CTBT before signing," *Japan Times*, 9 April 2015.

<sup>29</sup> <https://www.iaea.org/safeguards/safeguards-legal-framework/additional-protocol>.

<sup>30</sup> Ramesh Thakur, ed., *Nuclear Weapons-Free Zones* (New York: St. Martin's Press, 1998).

<sup>31</sup> Ramesh Thakur, "To Stop Iran Getting the Bomb, Must We Learn to Live with Its Nuclear Capability?" *Strategic Analysis* 36:2 (2012), pp. 328-34.

of sight; it was stopped from ever arriving at a platform at Tehran station.

31. Second, North Korea is already deeply isolated and it is hard to see the incremental pain of still more sanctions tipping it into a search for compliance. Clearly the pain of sanctions is within the tolerance threshold for the regime. Nor is a comparable middle class youth cohort exerting pressure on the regime to re-engage with the international community, nor anything resembling the genuine political contestation in Iran with competing policy platforms.

32. Third, the West has very limited leverage with respect to North Korea. The only external actor with any meaningful – but not necessarily decisive – leverage is China. The key to any progress on the agenda lies in Beijing and China's ability and willingness to ratchet up the pressure on the North Korean regime. While preserving North Korea as a territorial buffer remains a critical Chinese security goal, with over 200,000 Chinese soldiers having been killed during the 1950s Korean War to this end and their ultimate sacrifice not forgotten, Pyongyang's unpredictable, erratic and provocative behaviour heightens regional instability, strengthens US alliances with Japan and South Korea, builds sentiment in the latter two countries for nuclear weaponization, and increases the risk of an unwanted conflict that would undermine China's own development goals. Instead of a P5 (China, France, Russia, UK, USA) +1 (Germany) formula, therefore, it might have to be a case of 1 (China) + P4 (France, Russia, UK, USA) + EA2 (Japan, South Korea).<sup>32</sup>

33. That said, the lessons that are relevant from the Iran example are (1) the importance of an international coalition that brings together mutually reinforcing UN, US, European and East Asian sanctions regimes; (2) a new diplomatic framework that discards the dated Six Party Talks that have long since passed their use-by date; (3) an abandonment of complete denuclearization as a precondition for talks with Pyongyang; (4) a credible prospect of a lifting of sanctions as an inducement to Pyongyang to engage with external interlocutors; and

<sup>32</sup> Bringing the two cases together like this in one sentence highlights another striking difference. The P5+1 Iran negotiations framework did not include a single regional actor beyond the country of concern. In Northeast Asia, any negotiating framework that excluded South Korea and Japan would be such a non-starter that it is hard to see it being seriously proposed.

(5) an agreed goal among East Asian and international partners on the final product.

34. For a mixed strategy of rewards and penalties to have any success, Pyongyang's insecurity complex will have to be addressed, including fears of vulnerability to forcible regime change by Washington. Senior North Korean officials have said to a former (1986–97) director of the Los Alamos National Laboratory that "if Slobodan Milosevic in Serbia, Saddam Hussein in Iraq and Muammar Gaddafi in Libya had had nuclear weapons, their countries would not have been at the mercy of the Americans and their regime-change tactics."<sup>33</sup> To this list we might now well add the Russian intervention in Ukraine and the annexation of Crimea in 2014 in clear violation of the 1994 Budapest Memorandum wherein Russia, the UK and the US had guaranteed Ukraine's territorial integrity in return for Kiev's agreement to remove 1,900 strategic and 2,500 tactical Russian nuclear weapons stationed in Ukraine.

35. Amid rising nationalism in the region, territorial disputes in the East and South China Seas, continued North Korean nuclear defiance, and concerns about the Obama administration's disarmament agenda, doubts about the reliability of US deterrence have been catalysts for pro-nuclear arguments in Japan and South Korea.<sup>34</sup> A leading conservative daily published an article pointing to how Seoul could get the bomb in 18 months.<sup>35</sup> In a written answer in parliament on 1 April (sic), the Abe government announced that while it remains firmly committed to Japan's three non-nuclear principles (no manufacture, possession or basing of nuclear weapons), in its view the war-renouncing Article 9 of the Constitution does not prohibit Japan from possessing and using nuclear weapons.<sup>36</sup> Japan has stockpiled about

<sup>33</sup> Siegfried S. Hecker, "For Iran, a nuclear option more trouble than it was worth," *Bulletin of the Atomic Scientists*, 18 January 2016, <http://thebulletin.org/iran-nuclear-option-more-trouble-it-was-worth9064>.

<sup>34</sup> Peter Hayes and Chung-in Moon, "Should South Korea Go Nuclear?" EAF Policy Debates No. 7, 28 July 2014; Henry Sokolski, "Japan and South Korea may soon go nuclear," *Wall Street Journal*, 8 May 2016; <http://www.wsj.com/articles/japan-and-south-korea-may-soon-go-nuclear-1462738914>.

<sup>35</sup> Lee Young-Wan, "6 Months to Produce Fissile Materials, 6-9 Months to Develop a Detonation Device...South Korea Could Arm Itself With a Nuclear Weapon in 1.5 Years," *Chosun Ilbo*, 19 February 2016, trans. Raymond Ha; <http://npolicy.org/article.php?aid=1313&rid=2>.

<sup>36</sup> "Abe Cabinet says Article 9 does not ban possessing, using N-weapons," *Asahi Shimbun*, 2 April 2016; <http://www.asahi.com/ajw/articles/AJ201604020026.html>.

11 tonnes of plutonium, enough to make more than 2,000 bombs.<sup>37</sup>

36. While the threshold for the nuclear weaponization debate has been lowered with serial North Korean provocations and Chinese belligerence, this remains most unlikely in the foreseeable future. Internationally, the NPT constrains the weapon option, the US nuclear extended deterrence bolsters Japan's security confidence and weaponization could rupture relations with Washington. Tokyo is also acutely conscious of the extreme regional sensitivities to any nuclearization. Domestically, the three non-nuclear principles, the very strong nuclear allergy in public opinion, and the atomic energy basic law that limits nuclear activity to peaceful purposes are additional powerful constraints on the weapons option.

### Safety and Security Architecture Deficits

37. Despite the 2011 Fukushima accident, interest in expanding nuclear power remains especially strong in Asia, led by China and India. The continent accounts for 28 and 25 per cent respectively of the number of reactors in operation and amount of electricity generated by nuclear power in the world at present. When looking at reactors under construction and planned, Asia's global share climbs dramatically to 58 and 51 per cent of reactors, and to 57 and 65 per cent of the share of electricity to be generated by nuclear power.<sup>38</sup>

38. The Fukushima accident highlighted the need for stronger international governance and closer international cooperation on nuclear safety and security. There is also a continuing need to avoid proliferation risk from the growth in nuclear energy programs, particularly the spread of proliferation-sensitive technologies. Pending agreement on global solutions, practical steps can be taken at a regional level. An intergovernmental Asia-Pacific nuclear energy community could facilitate high-level consultation on nuclear plans and programs; regional cooperation and promotion of best practice in safeguards, security and safety; and

collaborative arrangements for energy security and fuel cycle management.<sup>39</sup>

39. The 1994 Convention on Nuclear Safety aims to bind states operating land-based nuclear power plants to a high level of safety to international benchmarks set by the IAEA. The obligations cover siting, design, construction, operation, the availability of adequate financial and human resources, the assessment and verification of safety, quality assurance and emergency preparedness. Not all of the 70 states with significant nuclear activities have joined the Convention.<sup>40</sup> Asia-Pacific non-parties are Malaysia, North Korea, the Philippines (which signed on 14 October 1994 but is yet to ratify) and Thailand. There is also a lack of international standards, transparency and accountability. Many states with power reactors remain outside the liability regimes as well.

40. Nuclear security refers to measures designed to address the risks associated with theft and trafficking in nuclear and radiological materials, sabotage of nuclear facilities and the danger of terrorists acquiring and using a nuclear or radiological weapon. Because a major nuclear security incident anywhere would have far-reaching consequences, effective nuclear security is a global concern. Several worrying incidents are known to have taken place in recent years,<sup>41</sup> pointing to gaps in the existing national and multilateral machinery: lack of universality, binding standards, transparency and accountability mechanisms, and compulsory IAEA oversight; and insufficient attention to nuclear weapons. The terrorists who struck Brussels in March 2016 were apparently considering an attack on a nuclear power facility. The very notion of deterrence is irrelevant to groups that hold no territory or fixed assets that can be attacked in retaliation and whose members court martyrdom by suicide.

41. In the third biennial *Nuclear Security Index*,<sup>42</sup> in the theft rankings among the world's 24 states with weapons-useable nuclear materials, four or five of the six Asia Pacific coun-

<sup>37</sup> This is not counting over 35 tonnes that Japan has in the UK and France.

<sup>38</sup> World Nuclear Association, <http://www.world-nuclear.org/information-library/facts-and-figures/world-nuclear-power-reactors-and-uranium-requireme.aspx>.

<sup>39</sup> John Carlson, "An Asia-Pacific Nuclear Energy Community," APLN/CNND Policy Brief No. 4 (June 2013). [http://www.apln.org/?m=briefings&sm=briefings\\_view&seq=37](http://www.apln.org/?m=briefings&sm=briefings_view&seq=37).

<sup>40</sup> Evans, Ogilvie-White and Thakur, *Nuclear Weapons: The State of Play 2015*, pp. 238–39.

<sup>41</sup> Ibid., Box 3.1, pp. 163–64.

<sup>42</sup> NTI *Nuclear Security Index: Building a Framework for Assurance, Accountability, and Action* (Washington DC: Nuclear Threat Initiative, January 2016).



tries are in the bottom half on all measures. On the risk of sabotage for 45 countries with nuclear power plants or research reactors, six or seven of the Asian countries plus Taiwan are in the bottom half of the table on all measures.

### An Agenda for Action in the Second Nuclear Age

42. Based on this brief overview of the nuclear state of play in Asia against the global strategic backdrop, the overall objectives and strategy that the international community should be pursuing in relation to nuclear disarmament might realistically be described as a rapid movement towards further major overall reductions in the nuclear warhead numbers of Russia and the US which hold 93 per cent of global stockpiles. This should be accompanied by an immediate freeze in the stockpiles of the Asian nuclear-armed states. Once the two major nuclear powers have reduced their arsenals down to the hundreds, China could be drawn into the negotiations followed by the other nuclear-armed states.<sup>43</sup> With each new entrant into the multilateral arms control negotiations, it would become progressively more difficult for the remainder to stay outside the process.

43. North Korea demonstrates the weakness of the NPT withdrawal clause. It should not be possible for a country to gain the technology and materials benefits as an NPT non-NWS, decide on an entirely unilateral calculation that withdrawal from the treaty is justified, defect and yet keep all the benefits gained during membership. In addition, the cases of India and Pakistan (and Israel in the Middle East) show the strategic folly of the NPT's chronological rather than empirical or analytical definition of a NWS. The integrity and credibility of the NPT as the overarching regime for managing the world's nuclear orders is dented by the fact that four of the nine states that possess nuclear weapons fall outside the regime.

44. The non-proliferation leg can be strengthened with the entry into force of the CTBT, although it is an open question as to whether this is better pursued by demanding signature and ratification by the Annex 2 holdout states, or amending the entry-into-force formula to bring

<sup>43</sup> James Cartwright, et al., *Modernizing U.S. Nuclear Strategy, Force Structure and Posture*. Global Zero U.S. Nuclear Policy Commission Report (Washington DC: Global Zero, May 2012), p. 4, [http://www.globalzero.org/files/gz\\_us\\_nuclear\\_policy\\_commission\\_report.pdf](http://www.globalzero.org/files/gz_us_nuclear_policy_commission_report.pdf).

the CTBT into line with all other arms control regimes. A treaty-based freeze on fissile materials production is equally urgent. So too is the universalization of the Additional Protocol and the NWS adherence to relevant regional NWFZ protocols. Vertical proliferation by the nuclear-armed states can be checked and reversed by Russia and the US taking their warheads off high alert and Pakistan and India aborting the pursuit of tactical nuclear weapons.

45. It may be worth testing Pyongyang on a freeze<sup>44</sup> in return for replacing the 1953 armistice by a peace treaty, as the prelude to difficult negotiations that culminate in a comprehensive peace settlement for the peninsula.<sup>45</sup> Part of the challenge in the latter goal would be to reconcile the West's call for denuclearization of the Korean Peninsula aimed at terminating the North's nuclear weapons program, with Pyongyang's insistence that denuclearization must include removal of the US nuclear umbrella. Moreover, because of the deep trust deficit in the region, any agreement will have to be underpinned by a robust and credible verification and monitoring system. A verifiable and irreversible denuclearization of North Korea would also be the most effective bulwark against the growth of pro-nuclear weapons sentiments in South Korea and Japan.

46. Finally, the negotiation of additional regional nuclear energy regulatory arrangements and regional and global nuclear fuel banks; the adoption of international standards and benchmarks on nuclear security; the extension of the nuclear security agenda to cover sensitive nuclear materials under military control that account for over 80 per cent of all such materials; and the universal take-up by all Asia-Pacific states with significant nuclear activities of regional and global safety and security conventions, would boost confidence in the safety and security practices of the peaceful uses of nuclear energy across the continent.

<sup>44</sup> Interestingly, in a recent set of articles on North Korea, the three Chinese, South Korean and Russian analysts agreed that the goal of "complete, verifiable and irreversible denuclearization" is fanciful and a freeze is the more realistic objective worth pursuing. Shen Dingli, "Acknowledging reality: A pragmatic approach to Pyongyang"; Chung-in Moon, "North Korea: A negotiated settlement remains the best hope"; and Andrei Lankov, "North Korea: Don't dream the impossible," *Bulletin of the Atomic Scientists*, 1 and 2 June 2016; <http://thebulletin.org/north-koreas-nuclear-weapons-what-now>.

<sup>45</sup> John Carlson, "Dealing with the North Korean Nuclear Threat," *The Interpreter*, 9 May 2016; <http://www.lowyinterpreter.org/post/2016/05/09/Dealing-with-the-North-Korean-nuclear-threat.aspx>.

### The Author

**RAMESH THAKUR** is Director, Centre for Nuclear Non-Proliferation and Disarmament, and Professor in the Crawford School of Public Policy, The Australian National University; co-Convenor, Asia-Pacific Leadership Network for Nuclear Non-Proliferation and Disarmament; and Editor-in-Chief of *Global Governance*.

### APLN/CNND Policy Briefs

These express the views of the authors, and do not necessarily reflect the views of APLN members or the CNND, or other organizations with which the authors may be associated. They are published to encourage debate on topics of policy interest and relevance regarding the existence and role of nuclear weapons.

### APLN and CNND

The **Centre for Nuclear Non-Proliferation and Disarmament (CNND)** contributes to worldwide efforts to minimize the risk of nuclear-weapons use, stop their spread and ultimately achieve their complete elimination. The director of the Centre is Professor Ramesh Thakur. See further <http://cnnd.anu.edu.au>.

The **Asia Pacific Leadership Network (APLN)** comprises around seventy former senior political, diplomatic, military and other opinion leaders from fifteen countries around the region, including nuclear-weapons possessing states China, India and Pakistan. The objective of the group, founded by former Australian Foreign Minister and President Emeritus of the International Crisis Group Gareth Evans, is to inform and energize public opinion, and especially high-level policy-makers, to take seriously the very real threats posed by nuclear weapons, and do everything possible to achieve a world in which they are contained, diminished and ultimately eliminated. The co-Convenors are Professors Chung-in Moon and Ramesh Thakur. The Secretariat is located at the East Asia Foundation in Seoul, Republic of Korea. See further [www.a-pln.org](http://www.a-pln.org).

### Funding Support

APLN gratefully acknowledge the generous support of Nuclear Threat Initiative, Washington DC.

### Contact Us

APLN, East Asia Foundation  
4F, 116 Pirundae-ro  
Jongno-gu, Seoul 03535  
Republic of Korea  
Email: [apln@keaf.org](mailto:apln@keaf.org)  
Tel: +82 2 325 2604-6