

NORTH KOREAN PROLIFERATION CHALLENGES: THE ROLE OF THE EUROPEAN UNION

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I. INTRODUCTION

The Democratic People's Republic of Korea (DPRK, or North Korea) presents the greatest challenge to the global non-proliferation regime. The only country to have withdrawn from the 1968 Non-Proliferation Treaty (NPT)—under circumstances of contested legality—North Korea is uniquely defiant of international norms in nearly every respect. It is the only country to have tested nuclear weapons in the 21st century, it has enough plutonium left for about eight nuclear weapons and it is now pursuing a partially hidden uranium enrichment programme. It possesses the third largest chemical weapon stockpile in the world and there are questions about its claim that it does not have an active biological weapon programme. North Korea also has hundreds of short- and medium-range ballistic missiles that are intrinsically capable of carrying the above weapons, if warheads can be perfected, and it is developing longer-range missiles. It has been one of the world's leading exporters of ballistic missiles and it has assisted nuclear weapon programmes in at least two countries.

Multilateral diplomacy in the 1990s brought a temporary suspension of missile tests and froze the plutonium programme, only to see North Korea pursue an enriched uranium path to nuclear weapons. An exclusively pressure-focused US strategy in the early years of the millennium saw North Korea quadruple its weapons-ready fissile material. Ensuing periods of fitful engagement brought little by way of lasting results. The current policy of the United States and the Republic of Korea (ROK, or South Korea) of 'strategic patience' is faring no better, as attested by North Korea's response in 2010 of unprovoked attacks against South Korea. Any more such attacks could spark a second Korean war.

SUMMARY

The bête noire of the global non-proliferation regime, North Korea has defeated every effort to reign in its pursuit of nuclear weapons, ballistic missiles, chemical weapons and illicit arms trade. Neither sanctions, incentives nor 'strategic patience' have succeeded in bringing about anything more than a temporary stall in the development of these weapon systems. There appears to be no prospect that North Korea would barter its nuclear arsenal for diplomatic or economic gain. Having fewer stakes in North East Asia than the actors in the Six-Party Talks process, the European Union (EU) has played, at most, a supporting role, providing aid when incentives were called for and applying sanctions when that was in the script, while consistently promoting human rights. Yet if North Korea, under new leadership, moves towards market reforms in order to overcome its poverty trap, there may be opportunities for a greater EU role. Whether in conjunction with the EU's closer relations with South Korea or through finally establishing a delegation office in the North Korean capital, Pyongyang, a more direct application of European soft power would better position the EU to assist the Korean Peninsula in future crises and to benefit from any positive turn of events.

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The year 2012 has already seen an inexplicable turn of events in which North Korea on 29 February first agreed to a moratorium on nuclear and missile tests and enrichment only to abrogate it 16 days later by announcing a space rocket launch. Whether this was the result of inexperience on the part of the new leader, Kim Jong-un, or policy differences among his advisors, the episode augurs poorly for any diminution of tension and military threat. North Korea is unlikely to relax its guard on the nuclear and missile front—programmes it sees as vital to deterrence and protection of the regime. Yet recognition of its economic troubles and China's encouragement could move it towards cautious market reforms. The European Union (EU) could be better positioned to engage if it followed through with decade-old plans to open a delegation office in the North Korean capital, Pyongyang.

II. NUCLEAR WEAPONS

Nuclear weapons programme

North Korea's nuclear tests in 2006 and 2009 marked a stunning milestone in a weapons programme that began in the 1960s, building on Soviet technological assistance centred at the Yongbyon Nuclear Scientific Research Centre. Although the Soviet Union did not intend to support a weapons programme, the small reactor and radioisotope-production laboratory it supplied allowed North Korea to master the production and reprocessing of plutonium. As detailed in 2011 by US academic Jonathan Pollack, Soviet and Chinese archives show that North Korea's nuclear programme from its very onset was designed with weapons in mind.¹

In around 1980 North Korea began a programme to build three graphite-moderated, natural uranium-fuelled reactors to produce plutonium and, ostensibly, electricity, along with a reprocessing plant. Only the smallest of the reactors, rated at 5 megawatt electric (MW(e)), was completed, in 1985.² When operated at full capacity, it was able to produce about 7.5 kilograms

of plutonium annually, enough for one weapon.³ In 1984 construction was started on a 50 MW(e) reactor at Yongbyon, which, if completed, would have been able to produce about 55 kilograms of plutonium per year, enough for around 10 weapons. Construction of a 200-MW(e) reactor was later started at Taechon, which, if completed, would have been capable of producing about 200 kg of plutonium annually, enough for about three dozen weapons.

Although North Korea in 1985 acceded to Soviet pressure to join the NPT, it never declared the full extent of its nuclear infrastructure or its plutonium production prior to concluding a comprehensive safeguards agreement with the International Atomic Energy Agency (IAEA) in 1992. The USA estimated that, before 1992, North Korea might have produced enough plutonium for one to two weapons.⁴ IAEA inspections that year revealed inconsistencies in North Korea's declaration and, based on US-supplied overhead imagery, the IAEA was aware of two undeclared underground nuclear waste sites. North Korea's refusal to allow inspector access to the sites, even when the IAEA in 1993 called for a rarely requested 'special inspection', sparked the first Korean nuclear crisis.⁵ Rejecting a bombing option because of the massive casualties of the war that would surely ensue, the administration of US President Bill Clinton reached a diplomatic solution with the North Korean leader, Kim Jong-il.

Under the terms of the 1994 Agreed Framework, North Korea froze its plutonium production facilities and the USA agreed to arrange for the provision of two light-water reactors (LWRs), which would be more proliferation-resistant than the indigenous reactors that North Korea agreed to shutter.⁶ Before the LWRs were completed, the USA agreed to provide 500 000 tonnes of heavy fuel oil annually, as compensation for the electricity that North Korea supposedly would be foregoing by stopping operation

³ It is usually assumed that 4–8 kg of separated plutonium is required for 1 weapon, although sophisticated weapons can be built using less.

⁴ Fitzpatrick, M. (ed.), *North Korean Security Challenges: A Net Assessment* (International Institute for Strategic Studies: London, 2011), p. 93.

⁵ International Atomic Energy Agency (IAEA), 'Application of Safeguards in the Democratic People's Republic of Korea', GOV/2011/53-GC(55)/24, 2 Sep. 2011, paras 3–9.

⁶ For a thorough study of the Agreed Framework by a US trio who were intimately involved in the negotiations, see Wit, J. S., Poneman, D. B. and Gallucci, R. L., *Going Critical: The First North Korean Nuclear Crisis* (Brookings Institution Press: Washington, DC, 2004).

¹ Pollack, J., *No Exit: North Korea, Nuclear Weapons and International Security* (International Institute for Strategic Studies: London, 2011).

² MW(e) refers to electrical output. Reactors of this type are usually rated in terms of thermal output, which has been estimated at 25 megawatts thermal (MW(t)) in this case. North Korea designated the reactor according to its electrical output to sustain the claim that it was an experimental power reactor.

of the 5-WM(e) reactor and the construction of the larger reactors. North Korea also agreed to fully account for its pre-1992 plutonium production before significant nuclear components for the LWRs were delivered—milestones that were never reached. Some 8000 spent fuel rods containing plutonium were to be removed from the country. The Agreed Framework also provided for the exchange of diplomatic missions and the lifting of sanctions on trade and investment. Japan, South Korea and the USA established an international consortium, the Korean Peninsula Energy Development Organization (KEDO), to build the twin LWRs, with the largest pledges from South Korea and Japan and significant assistance from the EU through the European Atomic Energy Community (Euratom).

Three years before the Agreed Framework, North Korea and South Korea agreed bilaterally to ‘denuclearize’ the Korean Peninsula and to each forgo uranium enrichment and reprocessing. The 1991 North–South Denuclearization Agreement was facilitated by the 1989 US removal of tactical nuclear weapons from South Korea and from surface ships.⁷

The Agreed Framework froze the plutonium programme for eight years, but not long after it was signed North Korea began a uranium-enrichment programme through transfers of technology from Pakistan, via the head of its enrichment laboratories, A. Q. Khan. When US intelligence agencies became convinced that North Korea’s enrichment programme was reaching an industrial scale, the USA in October 2002 confronted North Korea with an ultimatum and stopped the fuel oil shipments. Thus, the second Korean nuclear crisis ensued. North Korea responded by expelling IAEA inspectors, withdrawing from the NPT and reprocessing the plutonium in the 8000 spent fuel rods (sufficient for plutonium for up to six weapons). KEDO eventually was disbanded, having spent \$1.9 billion (the bulk of it from South Korea and Japan, but also €120 million of EU money plus lesser amounts from others, including from several EU member states in their national capacity) and leaving behind, at the port city of Sinpho, the concrete foundations for the first LWR.

A diplomatic track led by China created a multinational negotiating framework in 2003 known as

the Six-Party Talks (China, Japan, North Korea, South Korea, Russia and the USA). In September 2005 those talks produced a joint statement, under which North Korea agreed to denuclearization and full disclosure of its nuclear activities, while the USA recognized North Korean sovereignty, pledged not to attack and agreed, in the future, to again discuss the provision of a LWR. Almost immediately, however, the USA made clear that the LWR discussions were only theoretical. The 2005 joint statement also came under severe strain as a result of the US imposition of sanctions against the Macao-based Banco Delta Asia because of its money laundering of North Korean bank accounts connected with currency counterfeiting and other illicit activity. This was the backdrop of North Korea’s first nuclear test, in October 2006. Although it was a technical fizzle, producing a yield of 0.5 kilotonnes (compared to the 4 kt yield forecast North Korea had provided China and the 10–20 kt yield of the first generation weapons produced by other states), the test was seen by North Korea as a political and diplomatic success. China went along with tough UN sanctions under Security Council Resolution 1718, which, among other things, banned North Korea from importing or exporting major arms.

After the test, however, bilateral talks resumed with the USA. Those bilateral talks, always ‘in conjunction’ with Six-Party Talks, led in 2007 to the lifting of Banco Delta Asia sanctions, a new suspension of the plutonium programme, the provision of 18 000 pages of reactor operating records, and the partial dismantlement of the 5-MW(e) reactor and other facilities. However, a dispute in the autumn of 2008 over verification procedures stopped the dismantlement process. Turning down incoming US President Barack Obama’s offer of a ‘hand of engagement’, North Korea tested a space launch vehicle in defiance of a UN Security Council mandate and then, when mildly reproached by the UN, conducted its second nuclear test, this time with a yield of 2–4 kt.

As of mid-2012 North Korea has not restored the plutonium production facilities, but it did move quickly to build other nuclear facilities at Yongbyon. In November 2010 North Korea stunned the world by revealing to a visiting group of US academics a uranium-enrichment facility with 2000 new second-generation gas centrifuges, of a type more advanced than those on which Iran relies.⁸ North Korea claimed

⁷ Joint Declaration of South and North Korea on the Denuclearization of the Korean Peninsula, signed 1991, entered into force 19 Feb. 1992, <<http://cns.miis.edu/inventory/pdfs/aptkoreanuc.pdf>>.

⁸ The centrifuges observed at Yongbyon were made of maraging steel and were similar in dimension to second-generation Pakistani

the plant was operational and was set up to produce fuel for an experimental LWR under construction. At the time of writing, the outer portions of the experimental LWR appear to be nearing completion, but there is grave doubt about whether North Korea can safely build and operate the reactor components on its own. It is unclear why North Korea appears to have abandoned the plutonium programme in favour of uranium enrichment, but the most likely reason is that enrichment plants are easier to conceal. North Korea may also have seen an advantage in being able to produce gun-type highly enriched uranium (HEU) weapons, which do not need to be tested.

If the centrifuge plant were operational, it would be able to produce about 30–40 kg of HEU a year, enough for at least one implosion weapon a year. It is widely believed that North Korea could not have constructed the 2000-centrifuge plant at Yongbyon in 19 months without first having constructed at least one pilot plant elsewhere. Raw materials and components for the programme were procured from Pakistan, Russia, Europe and Japan beginning in the 1990s, although it is not clear whether such procurement has continued in recent years. There is no public information about the location and size of the pilot plant or a facility to produce uranium hexafluoride (UF₆) for the enrichment plant. The existence of a UF₆ production line has been assumed ever since it was discovered that Libya in 2000–2001 purchased 1.65 tonnes of UF₆ from the Khan network that all signs pointed to as coming from North Korea.⁹

In addition to this assistance to Libya's fledgling nuclear weapon programme, North Korea helped Syria to secretly construct a plutonium-production reactor near Deir Ez-Zor, similar to the 5-MW(e) reactor at Yongbyon.¹⁰ The Syrian reactor was destroyed by an Israeli airstrike in September 2007 before it was fuelled. Rumours of North Korean cooperation with Myanmar on an unannounced nuclear weapon programme have not been confirmed. The USA does appear to have some intelligence information to this effect, which would explain why in May 2009, in

machines. Iran's main enrichment facility at Natanz is equipped with about 8000 centrifuges based on first-generation Pakistani models. As of late 2011, Iran had installed about 300 centrifuges of two different second-general models, both of which are made of carbon fibre rather than maraging steel, which Iran cannot produce indigenously.

⁹ Fitzpatrick, ed. (note 4), p. 178.

¹⁰ 'Background briefing with senior U.S. officials on Syria's covert nuclear reactor and North Korea's involvement', 24 Apr. 2008, <http://www.dni.gov/interviews/20080424_interview.pdf>.

Bangkok, Secretary of State Hillary Clinton said the US Government was worried 'about the transfer of nuclear technology and other dangerous weapons' from North Korea to Myanmar.¹¹

The intelligence discovery of the assistance to Syria and of the uranium-enrichment programme greatly complicated US efforts to reach a diplomatic settlement with North Korea. After the 2010 revelation of the centrifuge facility, former US lead negotiator Chris Hill said that, in light of North Korea's lies about its enrichment programme, there was 'absolutely no value' in restarting the Six-Party Talks.¹²

North Korea today is believed to possess enough separated plutonium for approximately eight implosion devices, although it might be as few as four and as many as 12, depending on unknown variables concerning the amount of plutonium production, the separation losses, the amount used in the two tests and the amount needed for each weapon.¹³ This stockpile could grow by one weapon a year if North Korea restarted its plutonium programme, which would take about six months, or if it began to produce HEU at Yongbyon. Faster accumulation would be possible if North Korea had larger undeclared enrichment facilities. Although there is no public evidence to date of production of HEU, South Korean officials believe that North Korea has solved all the technical challenges involved and appear to assume that HEU production must be underway somewhere. They predict, off the record, that North Korea is likely to use HEU in a test, possibly later in 2012. In April 2012, overhead imagery showed growing piles of dirt next to a previously used nuclear test shaft, which prompted China to strongly but quietly counsel prudence. Unconfirmed press reports suggested that North Korea had given the USA a pledge to forgo a third nuclear test.

Whether North Korea can be said to possess deliverable nuclear weapons is another matter. Rather than be seen to be recognizing North Korea as a nuclear-armed nation, officials from Japan, South Korea and the USA try to avoid speaking of North Korean 'nuclear weapons'. Their caution is defensible because there is no proof that North Korea can fit a

¹¹ 'Interview with US Secretary of State Hilary Clinton', *The China Post*, 23 July 2009, <<http://www.chinapost.com.tw/asia/regional-news/2009/07/23/217522/p2/Interview-with.htm>>.

¹² Chinoy, M., 'Six-Party Talks: the least bad alternative', 38 North blog of the US–Korea Institute of the Paul H. Nitze School of Advanced International Studies (SAIS), Johns Hopkins University, 10 Feb. 2011, <<http://38north.org/2011/02/six-party-talks/>>.

¹³ Fitzpatrick, ed. (note 4), p. 122.

nuclear weapon into the nose cone of one of its ballistic missiles. Such a capability is more likely if North Korea obtained the designs for a tested weapon, such as A. Q. Khan sold to Libya. At least one more test is probably necessary before North Korea would feel confident that it had a reliable nuclear weapon.¹⁴

Even if it could produce a weapon small enough for its missiles, the KPA cannot be certain that bomb components could survive the severe heating and vibration caused by atmospheric re-entry of the missile warhead. North Korea may feel the need to conduct more missile tests to enhance warhead re-entry survivability, although test data in this regard may have been obtained from Iran and Pakistan. It should also be kept in mind that missiles are not North Korea's only means of delivering nuclear weapons. In addition to aircraft, which are an unlikely choice because of their vulnerability to detection and kill, North Korea conceivably could deliver nuclear weapons by ship or midget submarine.

Nuclear doctrine

Under what circumstances North Korea might use nuclear weapons is a matter of conjecture. Most analysts assume that North Korea would only do so as a last resort if the regime were on the verge of military defeat.¹⁵ Any North Korean use of nuclear weapons before then would surely bring retaliation that would ensure defeat if not annihilation. This analysis is consistent with North Korea's insistence that its nuclear weapons are for deterrence and state survival.¹⁶

Apart from any future use, North Korea's nuclear weapons serve a political purpose. In addition to their deterrence purpose, they are a way to bolster the regime's status both internally and externally. In every other field of endeavour, North Korea is surpassed by South Korea by huge margins. Only in nuclear weapons and ballistic missiles does the North have the

advantage. North Korea thus no longer refers to any possibility that it will barter away its nuclear arsenal. It insists it will give up nuclear weapons only if the American 'nuclear threat is removed and South Korea is cleared of its nuclear umbrella'.¹⁷ Whether or not a verification regime could be established that would convince North Korea that the USA really did remove all nuclear weapons from South Korea, North Korea's position in effect means it will keep nuclear weapons as long as the USA has them in its arsenal anywhere. In the meantime, North Korea says it should be granted a status akin to the USA's acceptance of India's nuclear weapons.¹⁸ Given these positions and the recent history of broken agreements and failed negotiations, most outside analysts conclude that the military regime of North Korea will cling to its nuclear weapons to the end. They have become integral to North Korea's sense of itself and are deemed as vital to ensuring the survival of the regime.¹⁹ If North Korea ever was serious about using its nuclear assets as a bargaining chip for aid and diplomatic recognition, that is not the case today. To underscore its nuclear status, North Korea in April 2012 amended the preamble to its constitution to proclaim that Kim Jong-il had turned the nation into a 'nuclear-armed state'.

Concluding that North Korea is unlikely ever to give up its nuclear weapons does not mean concluding that negotiations are hopeless. While maintaining an end goal of North Korean denuclearization, its negotiating partners may be able to obtain secondary objectives in the nearer term. Worthy objectives include a suspension and rollback of the enrichment programme, a moratorium on testing and a ban on the transfer of nuclear weapons-related material and technology. A suspension of nuclear and missile tests is of particular value, in case further testing of both systems enables North Korea to mount a miniature nuclear warhead on its ballistic missiles. Concerned nations might also consider whether nuclear safety and security objectives might be worth pursuing with North Korea under certain conditions. If North Korea proceeds with constructing LWRs on its own, it could pose severe safety risks for neighbouring countries, risks

¹⁴ Hecker, S. and Carlin, R., 'North Korea in 2011: countdown to Kim il-Sung's centenary,' *Bulletin of the Atomic Scientists*, vol. 68, no. 1 (Jan. 2012), p. 55.

¹⁵ See, for example, Clapper, J. R., Director of National Intelligence, 'Statement for the record on the worldwide threat assessment of the U.S. intelligence community for the Senate Select Committee on Intelligence', 16 Feb. 2011, <http://www.dni.gov/testimonies/20110216_testimony_sfr.pdf>, p. 7.

¹⁶ Korean Central News Agency (KCNA), 'DPRK FM on its stand to suspend its participation in Six-Party Talks for indefinite period', 10 Feb. 2005, <<http://www.kcna.co.jp/item/2005/200502/news02/11.htm>>.

¹⁷ Korean Central News Agency (KCNA), 'DPRK Foreign Ministry's spokesman dismisses U.S. wrong assertion', 13 Jan. 2009, <<http://www.kcna.co.jp/item/2009/200901/news13/20090113-13ee.html>>.

¹⁸ Cha, V., 'What do they really want? Obama's North Korea conundrum', *Washington Quarterly*, vol. 32, no. 4, Oct. 2009, pp. 123-25.

¹⁹ Pollack (note 1), p. 209.

underscored by the terrible accident at Fukushima in Japan.²⁰

III. CHEMICAL AND BIOLOGICAL WEAPONS CAPABILITIES²¹

Clarifying the nature and significance of North Korean chemical and biological weapons-related capabilities is subordinate to nuclear weapon concerns. These weapons have not been the subject of negotiations between North Korea and its adversaries and literature on the subject is sparse, in part because of lack of reliable data. Yet North Korea's chemical weapons are not just a tactical concern to South Korean and US forces. They also pose a strategic threat because of the proximity of the South Korean capital Seoul to the border. North Korea has several hundred long-range artillery pieces deployed within range of Seoul, and all are thought to have chemical weapon munitions.

According to most estimates, North Korea has the world's third-largest chemical weapon stockpile (after Russia and the USA), however, North Korea denies having any chemical weapons at all. The nation is not a party to the Chemical Weapons Convention (CWC) and there have never been any official declarations and international inspections of its chemical infrastructure. In assessing the status of its chemical weapon programme, therefore, one must rely on defector reports and information by governments, which might not always be impartial or accurate.

Although North Korea in 1989 acceded to the Geneva Protocol, pledging not to use chemical weapons against other signatory states, South Korean and US military commanders assess that North Korean offensive military plans include the use of chemical agents delivered by a variety of means against both military and civilian targets. The South Korean Government estimates that North Korea has a range of between 2500 and 5000 tonnes of chemical agents, including blister (sulphur mustard) and some organophosphorus nerve agents.²² According to some South Korean experts, the stockpile includes first-generation blister

²⁰ Laurence, J., 'North Korea's new nuclear plant a safety worry—expert', Reuters, 26 Jan. 2012, <<http://in.reuters.com/article/2012/01/26/korea-north-nuclear-idINDEE80P06V20120126>>.

²¹ This section draws on 'North Korea's Chemical and Biological Weapons Programmes', ed. M. Fitzpatrick, *North Korean Security Challenges: A Net Assessment* (International Institute for Strategic Studies: London, 2011), pp. 161–71.

²² South Korean Ministry of National Defense, *Defense White Paper 2008* (Ministry of National Defense: Seoul, 2009), p. 39.

agents, nerve agents such as sarin, soman, tabun and V-agents, and blood agents such as hydrogen cyanide and cyanogen chloride.²³ The South Korean estimate of North Korea's stockpile has not changed appreciably in recent years. There are no reports of new facilities that would indicate that the stockpile is increasing and it is uncertain how well North Korea has been able to maintain a chemical weapon stockpile in light of the condition of disrepair into which many of its chemical plants sank during the prolonged economic crisis of the past two decades. The stockpile is likely to be limited mostly to unitary munitions that are less stable, durable and safe than binary chemical weapon munitions.²⁴ South Korea believes North Korea has the capability to produce 4500 agent tonnes of chemical weapons a year.²⁵

The US Government also believes that North Korea has an active chemical weapon programme, but unclassified reports provide few details. A 2007 Central Intelligence Agency (CIA) proliferation report to Congress was the most thorough, saying that North Korean chemical weapon capabilities 'probably included the ability to produce bulk quantities of nerve, blister, choking and blood agents' and a stockpile of unspecified agents.²⁶ More recent CIA unclassified reports only assess that North Korea has a long-standing programme and a stockpile. The most recent open-source indication of a possible North Korean chemical weapon programme was the interdiction by port authorities in Busan, South Korea, in October 2009 of four containers from North Korea bound for Syria that contained protective garments that were deemed to have military utility for protection against chemical weapons.²⁷ However, North Korean production of such protective garments is not proof of an offensive chemical weapon programme; they could be part of a

²³ Kyoung-Soo, K., 'North Korea's chemical and biological weapons' threat', ed. Kim Kyoung-Soo, *North Korea's Weapons of Mass Destruction: Problems and Prospects* (Hollym: Seoul, 2004), p. 101.

²⁴ International Crisis Group, 'North Korea's chemical and biological weapons programs', Asia Report no. 167, 18 June 2009, <http://www.crisisgroup.org/-/media/Files/asia/north-east-asia/north-korea/167_north_koreas_chemical_and_biological_weapons_programs.ashx>, p. 7.

²⁵ International Crisis Group (note 24).

²⁶ Central Intelligence Agency (CIA), 'Unclassified report to Congress on the acquisition of technology relating to weapons of mass destruction and advanced conventional munitions, covering 1 Jan. to 31 Dec. 2007', <[http://www.dni.gov/reports/Unclassified Report to Congress WMD Covering 1 January to 31 December 2007.pdf](http://www.dni.gov/reports/Unclassified%20Report%20to%20Congress%20WMD%20Covering%201%20January%20to%2031%20December%202007.pdf)>, p. 5.

²⁷ United Nations, Security Council, Report of the Panel of Experts established pursuant to Resolution 1874 (2009), 12 May 2010, annex to S/2010/571, 5 Nov. 2010, para. 72.

defensive programme that is completely legal under international law.

North Koreans are taught that US forces used chemical and biological weapons against them in the Korean War (this has been disputed by most reputable analysts as disinformation) and that the nation therefore has had to prepare defensive measures.²⁸ Shortly after the Korean War armistice in 1953, the KPA reportedly created biological and chemical defence units.²⁹ In the 1960s North Korea reportedly added an offensive chemical weapon programme.³⁰ And in 1980 Kim Il-sung reportedly boasted of the nation having ‘succeeded in producing poisonous gas and bacterial weapons through our own efforts and supported by Soviet scientists in the field’.³¹ The latter may have been a reference to having received after-action reports of Egyptian chemical weapon use in Yemen in the 1960s. Various defector reports indicated that the chemical weapon arsenal expanded in the 1990s. When Russia abandoned its chemical weapon programme, however, the help it apparently was giving to North Korea in this field also stopped.

In recent years, as part of a broader effort to achieve universal adherence to the CWC, the Organisation for the Prohibition of Chemical Weapons (OPCW) has attempted to engage North Korean officials to discuss the country’s possible accession to the convention without success. For example, Ambassador Ahmet Üzümcü of Turkey, who became the third Director-General of the OPCW in July 2010, wrote letters to all non-parties requesting informal dialogues and possible visits from the Technical Secretariat to discuss accession to the CWC. Only North Korea declined to respond.³² Moreover, in 2009–2010 a special adviser was hired on a temporary contract by the OPCW Director-General to informally engage states not party

to the CWC. However, these efforts to enter into a dialogue with North Korea were unsuccessful.³³

The outside world knows less about North Korea’s biological weapon capability. The South Korean Ministry of National Defense’s 2010 Defense White Paper assessed that North Korea is able to produce anthrax (*Bacillus anthracis*), smallpox (*Variola*) and cholera (*Vibrio cholerae*).³⁴ Previous versions of the white paper assessed that North Korea had actually weaponized one or two biological agents. A 1993 report by the Russian intelligence service stated that North Korea was performing ‘applied military-biological research’ with the causative agents for anthrax, cholera, bubonic plague and smallpox at a number of institutes and universities and testing biological weapons on North Korean islands.³⁵ More recent Russian and US official reports have only characterized North Korea as ‘capable’ of producing a variety of agents, including anthrax, cholera and plague. There is little authoritative information on the potential role of biological weapons in KPA strategy, beyond speculation that because biological weapons have less utility as a battlefield weapon, they are probably less significant than chemical weapons. Like nuclear weapons, biological weapons are essentially weapons of terror.

North Korea joined the Biological and Toxin Weapons Convention (BTWC) on 13 March 1987, but only once, in 1990, submitted a declaration within the framework of annual, politically binding information exchanges agreed by the states parties that are designed to serve as confidence-building measures. North Korea has never participated in discussion over potential verification mechanisms or the periodic review conferences of the convention.

IV. BALLISTIC MISSILES³⁶

North Korea has one of the largest ballistic missile forces in the world. It is estimated to possess more than 600 short-range Hwasong-5/6 missiles and some

²⁸ Guillemin, J., *Biological Weapons: from the Invention of State-Sponsored Programs to Contemporary Bioterrorism* (Columbia University Press: New York, 2004), p. 100.

²⁹ Bermudez, J., ‘CW: North Korea’s growing capabilities’, *Jane’s Defence Weekly*, vol. 11, no. 2, 14 Jan. 1989, p. 54.

³⁰ Tong-sam, P., ‘How far has the DPRK’s development of strategic weapons come?’, *Pukhan*, Jan. 1999, pp. 62–71, Translation by Foreign Broadcast Information Service. See also International Crisis Group (note 24), pp. 5–6.

³¹ Lee, Y. C., ‘North Korea’s CB weapons’ threat and ROK’s countermeasures’, National Defense University, Translated Research Report, 1999, pp. 22–23.

³² Organisation for the Prohibition of Chemical Weapons (OPCW), ‘Opening statement by the Director-General to the Conference of the States Parties at its Fifteenth Session’, C-15/DG.14, 29 Nov. 2010, pp. 11–12, para. 76.

³³ Organisation for the Prohibition of Chemical Weapons (OPCW) expert, Communication with author, Mar. 2012.

³⁴ South Korean Ministry of National Defense (note 22), p. 35.

³⁵ Russian Foreign Intelligence Service, ‘A new challenge after the cold war: the proliferation of weapons of mass destruction’, Report, Moscow, 1993, Translation by the Foreign Broadcast Information Service.

³⁶ This section draws on ‘North Korea’s Ballistic Missile Programmes’, ed. M. Fitzpatrick, *North Korean Security Challenges: A Net Assessment* (International Institute for Strategic Studies: London, 2011), pp. 129–60.

100 medium-range Nodongs. It is also developing a longer-range system, dubbed by outsiders as the Taepodong-2, which the USA has warned might have an intercontinental reach in five years. In addition, in 2010 North Korea displayed two new medium-range systems that, if fully developed, would allow it to target all of Japan, including US bases on Okinawa, with nuclear weapons.

North Korea bought its first ballistic missiles, Soviet-built liquid-fuelled Scud-Bs, from Egypt in the late 1970s. When relations with the Soviet Union improved in the mid-1980s, North Korea acquired several hundred more directly from their source. By 1987 North Korea was already re-exporting the missiles, which it called Hwasong-5s, to Iran for retaliatory use against Iraq. A Scud-B/Hwasong-5 can deliver a 1000 kg warhead within a range of 300 kilometres, meaning it cannot threaten targets at the southernmost end of the Korean Peninsula. North Korea therefore developed a longer-range modification, named the Hwasong-6, which is a copy of the Soviet Scud-C system and has a range of 500 km with a reduced warhead weight of 730 kg.

To meet its strategic objective of also being able to target Japan, in around 1990 North Korea introduced the Nodong, which has a range of 900 km with a 1000 kg payload. Although most of the literature on the subject says that North Korea 'developed' the Nodong, it seems more likely that North Korea procured the system from Soviet sources, albeit not necessarily sanctioned by the Soviet state. One reason for concluding that the Nodong was an already fully developed system is that North Korea put it into production in 1991 and a year later marketed it for export before even flight-testing the system for the first time in May 1993.³⁷ Exports to Iran and Pakistan began in the late 1990s. Iran, which called it the Shahab-3, then modified the system to extend its range to 1600 km with a 750 kg warhead, calling the new system the Ghadr-1. Although North Korea made no apparent effort itself to extend the Nodong range, a missile identical in shape and dimensions to the Ghadr-1 was displayed in a military parade in Pyongyang in October 2010. This suggests that missile cooperation between the two countries has now become two-way, or that North Korea participated in Nodong range

enhancement efforts in Iran. The longer-range system could cover targets throughout all of Japan.

In the late 1980s or early 1990s, North Korea also began to develop a long-range missile system. The first system, dubbed by Western intelligence as Taepodong-1, was a three-stage space launcher that was tested only once, in 31 August 1998. The second stage passed over Japan and landed in the Pacific Ocean about 1100 km from the launch site. The third stage, with a small satellite, failed soon after separation and fell some 1600 km down range, contradicting North Korea's claim of having put the satellite into space.

The Taepodong-1 launch was apparently timed to commemorate the 50th anniversary of North Korea's founding and Kim Jong-il's ascension to power. The launch was intended as a demonstration of technology, but it was seen elsewhere as highly provocative, particularly because of the trajectory over Japan. As a result, Japan curtailed its support for the 1994 Agreed Framework and the USA threatened to suspend its humanitarian food assistance if another long-range missile or space launcher was tested. The next month, North Korea entered into negotiations with the USA and, in response to the lifting of some sanctions, agreed to a flight-test moratorium.

Missile negotiations continued fitfully for two years, while North Korea focused its attention on the historic summit in Pyongyang between Kim Jong-il and South Korean President Kim Dae-jung in June 2000. The USA suggested that other technology holders, such as the European Space Agency, could provide satellite launch services if North Korea agreed to forgo further development of long-range missiles, but North Korea continued to link its indigenous missile programme to broader security issues and to call for cash compensation for abandoning missile exports.

As the Clinton administration entered its final half year, North Korea proposed a grand bargain on missiles. North Korean Vice Marshall Cho Myong-rok fleshed out some of the details during a visit to Washington in September 2000. A month later, US Secretary of State Madeleine Albright visited Pyongyang in pursuit of a missile deal. North Korea indicated that it would freeze the development, production, deployment and testing of missiles with a range over 500 km if the USA guaranteed that other countries would launch a few North Korean civilian satellites every year at no cost. In addition, North Korea proposed to end all missile and missile-related exports in exchange for compensation in unspecified goods.

³⁷ Bermudez, J., 'A history of ballistic missile development in the DPRK', Occasional Paper no. 2, Center for Nonproliferation Studies, Nov. 1999, <<http://www.missilethreat.com/repository/doclib/19990000-CNS-dprk.pdf>>, p. 20–22.

North Korea also sought broader steps to improve USA–North Korea relations, including a visit by President Clinton to Pyongyang and the establishment of diplomatic relations. Missile experts from the two sides met in Malaysia in November 2000, where further progress was made, including a North Korean agreement that the ban on missile exports would be comprehensive, including missiles themselves, missile components, materials, equipment and technology. But several key issues remained unresolved, including clarity on the type of missile covered by the freeze, the disposition of existing missiles, verification and monitoring procedures, and the type and size of the compensation package. Although none of these outstanding issues appeared insurmountable, the Clinton administration ran out of negotiating time. North Korea promised that all issues could be resolved if President Clinton visited Pyongyang, but the White House was not willing to risk such a controversial visit without prior agreement on key issues. This tactical stand-off doomed the effort to complete a USA–North Korea missile deal.³⁸

Despite the failure to conclude a deal, North Korea continued its unilateral moratorium on missile tests for eight years. The EU played a role in encouraging the moratorium, especially during a seminal May 2001 visit to Pyongyang by a senior delegation headed by Swedish Prime Minister Göran Persson. As noted below, that visit set the stage for the development of EU relations with North Korea. According to Persson, Kim Jong-il pledged that he would extend the moratorium on missile testing until 2003. In fact, it lasted until mid-2006, when tensions escalated over the nuclear issue and a breakdown of the Six-Party Talks. On 5 July 2006, North Korea began a series of seven ballistic missile tests, including two or three Hwasong-5/6s, two or three Nodongs and a new, longer-range two-stage system dubbed the Taepodong-2. The latter missile exploded 42 seconds after take-off, which occurred during darkness, with no photographs or videos possible. US intelligence agencies had been monitoring progress on the development of the system for some years. In 2001 the USA estimated that a two-stage Taepodong-2 could deliver a payload of several hundred kilograms up to 10 000 km and that a three-stage version could fly 15 000 km, hitting anywhere in the USA.³⁹

The missile tests were again highly provocative and deeply embarrassed China, which for the first time accepted UN sanctions on North Korea. UN Security Council Resolution 1695, which was passed unanimously on 15 July 2006, demanded that North Korea suspend its ballistic missile programme and required all UN members to prevent transfers of missile-related technologies and financial resources for missile programmes to North Korea. In October 2006, after North Korea conducted its first nuclear test, the UN Security Council imposed further sanctions through Resolution 1718 and expanded the ban on North Korean missile development to include the suspension of ‘all activities related to its ballistic missile programme’. The EU implemented this ban by adopting Common Position 2006/795/CFSP in November 2006.⁴⁰

In early 2009, just as US President Barak Obama began his term in office, offering a hand of friendship to adversaries, North Korea began assembling a three-stage rocket for launch, portrayed as a peaceful attempt to put a satellite in orbit. This time, North Korea sought to follow the rules—apart from UN Security Council Resolution 1718. North Korea announced its accession to the 1967 Outer Space Treaty, which provides for ‘freedom of scientific investigation in outer space’, and gave notice to international civil aviation and maritime agencies about the timing of the planned launch and the flight path. On 5 April 2009 North Korea launched its rocket, the Unha-2. The UN Security Council condemned this as a contravention of Resolution 1718 and used that resolution to impose sanctions on three North Korean missile-related firms. Despite the relatively mild nature of the Security Council statement, North Korea reacted sharply. Implementing apparently pre-planned steps, North Korea vowed never to return to the Six-Party Talks, declared all previous agreements void and, on 25 May, conducted its second nuclear test.

It is uncertain if the Unha-2 is a replica of the Taepodong-2, or a new system altogether. This time photographs and video were released, which showed a first stage that was powered by a cluster of four Nodong engines, a second stage that appears to have been derived from a Soviet R-27 submarine-launched missile, known in the West as the SS-N-6, and a third

³⁸ Fitzpatrick, ed. (note 4) p. 75.

³⁹ National Intelligence Council, ‘Foreign missile developments and the ballistic missile threat through 2015’, Dec. 2001, <http://www.dni.gov/nic/special_missilethreat2001.html#northkorea>.

⁴⁰ Council Common Position 2006/795/CFSP of 20 Nov. 2006 concerning restrictive measures against the Democratic People’s Republic of Korea, *Official Journal of the European Union*, L322/32, 22 Nov. 2006.

stage that appears similar to the second stage of the Iranian satellite carrier, the Safir, powered by a steering engine for the R-27. The first and second stages splashed down approximately 540 km and 3200 km respectively from the launch site. The third stage, which may not have separated properly, fell into the ocean near the second stage impact location.⁴¹

There is no doubt that the Unha-2 was a space launch vehicle as announced, and that the test provided North Korea with a foundation for putting into orbit light-weight satellites. But the Unha-2 could also serve as a catalyst for the development of a long-range ballistic missile with the range or payload capabilities forecast by the USA for the Taepodong-2 in 2001, albeit with significant modifications. To carry a nuclear weapon payload, for example, the third stage would need a higher thrust engine and the airframe would have to be reinforced.

Using a new, larger launch tower on the west coast, North Korea on 13 April 2012 launched another space rocket, the Unha-3, which exploded within two minutes. It also exploded an agreement struck just six weeks earlier with the Obama administration, in which the USA agreed to provide 240 000 tonnes of nutritional assistance in exchange for a moratorium on nuclear tests, long-range missile launches and enrichment activity at Yongbyon. The freeze was to last ‘while productive dialogues continue’, but that turned out to be a very short period. North Korea said the purpose of the space launch was to put an ‘earth observation satellite’ into orbit during celebrations marking the centenary of the birth of founding father Kim Il-sung and that it did not fall into the category of the ‘long-range missile launches’ which were to be suspended under the 29 February agreement. Yet the USA had made clear during the negotiation that a space launch would invalidate the deal. UN Security Council Resolution 1718, passed in 2006, specifically banned North Korea from conducting ‘any launch using ballistic missile technology’ and Resolution 1874, passed in 2009, prohibited ‘all activities related to [North Korea’s] ballistic missile program’.

Kim Jong-il was said to have given the go-ahead for a launch before he died, which is why North Korea

went ahead with it despite the deal.⁴² It is less clear why North Korea agreed to a deal to suspend long-range missile launches, knowing that one would soon take place. A day later, the Security Council ‘strongly condemned’ the launch, employing somewhat stronger language than that adopted after the rocket launch in 2009, and warned the North of further consequences if it carried out another missile launch or nuclear test.

On 15 April, North Korea took another provocative step in the missile field by revealing what appeared to be six new intermediate-range missiles at the end of a military parade honouring Kim Il-sung’s centenary. The new missiles on display, called KN-08 by the USA, were mock-ups of a new system under development. Until it is tested, little can be said about its capability. The mock-ups were carried on sophisticated 16-wheel transporter-erector-launchers that were based on a chassis imported from a subsidiary of the China Aerospace Science and Industry Corp.

A year and a half earlier, North Korea had displayed two other new missile systems: a Nodong variation based on Iran’s Ghadar-1 (as mentioned above) and another new medium-range missile, dubbed the Musudan by Western intelligence agencies, which appeared to be a lengthened version of the Soviet R-27. The Musudan had been rumoured to be under development in North Korea since the mid-2000s, when reports surfaced that Iran had received 18–19 sets of components for the missile via North Korea. The parade was the first time, however, that the missile was spotted in either country.⁴³ It is estimated that North Korea acquired about two dozen R-27 missiles, whether intact or the critical components thereof.⁴⁴ Apart from being two metres longer, the Musudan shares R-27 features. Assuming it is the R-27 with certain modifications to enable it to be launched as a land-mobile missile, the Musudan has a range of 2400 km. Because it has not been flight-tested, it cannot be said to be fully developed. Indeed, three to five years of flight-testing would be necessary before the Musudan can be effectively deployed.

One other new missile under development in North Korea is the solid-fuelled KN-02, which was first flight-tested in 2005 and appears to be a clone of the

⁴¹ ‘Misairu sandanmewa koukajini bunri – nichibei suitei’ [Third stage of missile separates on descent: Japan–US assumption], *Chunichi Shimbun*, 10 Apr. 2009, <<http://www.chunichi.co.jp/article/feature/ntok0001/list/200904/CK2009041002000203.html>>; and Wright, D. and Postol, T., ‘A post-launch examination of the Unha-2’, *Bulletin of the Atomic Scientists*, 29 June 2009.

⁴² North Korean academics, Discussions with author, Mar. 2012.

⁴³ R-27 steering engines were observed in Iran, where they powered the second stage of Iran’s Safir space launcher, but no complete R-27 has been seen there.

⁴⁴ Bermudez J., ‘North Korea deploys new missiles’, *Jane’s Defence Weekly*, 4 Aug. 2004.

Soviet SS-21 Tochka. It is believed to have a maximum range of 100 km carrying a 480 kg payload. Although this range does not add to North Korea's strategic capabilities, the KN-02 is significant because it is the country's first solid-propellant missile. Solid-fuelled systems provide a military advantage because they can be launched with shorter preparation time.

In conjunction with North Korea's nuclear weapon programme, its ballistic missile systems present a particularly troubling proliferation concern. Indeed, the missiles are not militarily significant unless armed with nuclear weapons, because of their very poor accuracy. Both the Hwasong-5 and the Hwasong-6 are estimated to have a circular error probability (CEP) of more than 1.5 km, meaning that one-half of the missiles launched against a specific target point will land within 1.5 km of that point. The Nodong's accuracy is limited to a CEP of about 2.5 km. This means that to destroy with moderate confidence a single military target, North Korea would have to allocate a large percentage of its missile inventory to that specific mission. Armed with conventional weapons, the missiles could be used to try to disrupt operations against larger-area military targets, such as an airfield or seaport, but the missiles alone are not capable of shutting down key military activities. Conventionally armed missiles could also be used to wage a massive terror campaign against large cities and industrial targets in South Korea and, to a limited extent, Japan, but the casualties would be less than 2000 even if Korea unleashed its entire missile arsenal and a majority of the missiles penetrated missile defences. Even if North Korea used missiles to deliver chemical weapons, they could not reliably deliver enough agents over a wide enough area to do other than to disrupt and slow South Korean and US military operations. Missiles are a highly inefficient delivery vehicle for chemical or biological attacks. This leaves nuclear weapons as the main military purpose of North Korea's missile arsenal.

The most likely nuclear delivery platform is the Nodong, which has the payload capacity (approximately 1 tonne) and the airframe diameter to carry a first-generation nuclear warhead of the sort for which A. Q. Khan sold blueprints to Libya in 2001–2002.⁴⁵ If the 2010 Nodong variant and the Musudan become operational systems, they would likely replace

the Nodong. The re-entry body configuration for the latter two missiles, however, imposes difficult technical challenges, because the nuclear warhead would have to be small enough to fit within the 600-millimetre payload bay. The warhead would also have to be robust and reliable enough to withstand the tremendous forces imposed on it by atmospheric re-entry. It is unclear if North Korea has the technical know-how to design and build such a compact and durable warhead. Like North Korea's nuclear programme, its ballistic missile programme also serves a political purpose. Displaying or prematurely fielding untested systems like the Musudan does not provide North Korea with a reliable capability, but it does serve to demonstrate a military achievement. This has domestic political value for the regime and probably adds to North Korea's deterrence posture.

Looking ahead, North Korea probably has the wherewithal to develop longer-range ballistic missiles, possibly including an intercontinental ballistic missile (ICBM), based on legacy engines and components from the former Soviet Union. Developing longer-range systems will take time and will require a flight-test programme that will be visible to the rest of the world, providing several years' warning time before they become combat-ready. A warning by US Defense Secretary Robert Gates in January 2011 that North Korea could develop ICBMs within five years does not mean that they will.⁴⁶

Meanwhile, the other proliferation danger posed by North Korea's missile programme—that of onward proliferation through its sale of missiles and missile technologies to other countries—might have peaked in the last decade. It is very likely that North Korea has relied on foreign sources for its supply of Hwasong, Nodong, Musudan and KN-02 missiles, probably through unsanctioned channels in many cases. To the extent that these channels have been constricted, North Korea may no longer be able to export missiles in large numbers. Indeed, since the late 1990s North Korean missile exports have significantly declined for a variety of reasons. Considerable US pressure was brought to bear on several recipient states, including Egypt, Libya, the United Arab Emirates and Yemen, to persuade them to discontinue missile-related imports from North Korea. These and other potential

⁴⁵ Fitzpatrick, M. (ed.), *Nuclear Black Markets: Pakistan, A. Q. Khan and the Rise of Proliferation Networks* (International Institute for Strategic Studies: Abingdon, 2007), p. 79.

⁴⁶ Stewart, P., 'US sees North Korea becoming direct threat, eyes ICBMs', Reuters, 11 Jan. 2011, <<http://www.reuters.com/article/idUSTRE70A1XR20110111>>.

customers shifted away from ballistic missiles in favour of aircraft, cruise missiles and missile defence systems supplied by Western powers. North Korea may also have dried up the market on its own by selling production equipment for ballistic missiles to many states, leaving it a market niche of supplying of missile parts and materials, not complete systems.⁴⁷ Interdiction efforts under the Proliferation Security Initiative and UN Security Council Resolution 1718's ban on North Korean arms exports may also have restricted sales. However, North Korea is apparently still supplying missile components and technology to Iran and Syria. In 2010 the UN Panel of Experts that was established to monitor North Korean compliance with UN sanctions said it was briefed by a UN member state that North Korea 'had been continuing its proscribed cooperation in ballistic missile-related development with several countries in the [Middle East] region'.⁴⁸ There was also a reported missile deal with Myanmar, but in May 2012 Myanmar's president said military ties with North Korea would be cut.⁴⁹

V. EUROPEAN UNION POLICY

The EU is by and large a bystander on the North Korea issue. Like the USA, South Korea and Japan, the EU says it cannot accept North Korea as a nuclear-armed state. The EU supports the objectives of complete, verifiable and irreversible dismantlement of the North Korean nuclear weapon programme. Viewing Six-Party Talks as the most effective way to resolve the nuclear crisis, the EU applauds engagement efforts led by China, the USA and South Korea. In support of the talks, the EU in 2007 provided €1.7 million to the IAEA to conduct verification of North Korean dismantlement activity.

The EU has also joined sanctions actions. In July 2009, in support of UN Security Council Resolution 1874, the EU made sanctions under the resolution directly applicable in the domestic law of all member states. In December 2010 the Council of the EU renewed the lists of persons and entities in North Korea that are subject to EU autonomous restrictive measures

and added one individual and six entities to the lists due to their involvement in North Korea's nuclear-related, ballistic missile-related or other weapons of mass destruction (WMD)-related activities. The restrictive measures include a visa ban and an asset freeze and limit financing activities and trade with North Korea, particularly of arms and related material and anything that could contribute to its nuclear and missile programmes.⁵⁰

One reason for Europe being a bystander is that it has less at stake than the direct participants in the Six-Party Talks. The 27 member states of the EU collectively were North Korea's fourth largest trading partner in 2010, but this amounted to only €164 million or 3.3 per cent of North Korean global trade (exclusive of North Korea–South Korea trade). Further, unlike the participants in the Six-Party Talks, EU member states have no combat forces stationed anywhere close to the Korean Peninsula. The EU also has few independent sources of intelligence about North Korean weapons systems and regime dynamics. Being largely reliant on the USA and South Korea for intelligence further reduces the ability of the EU to develop an independent policy towards North Korea.

This is not to ignore the importance of North East Asia for Europe, however, with the region being one of the most economically vibrant areas of the world. A free trade agreement between the EU and South Korea which came into effect in July 2011, for example, is expected to create new trade in goods and services worth €19.1 billion for the EU.⁵¹ Just as the opportunities are great, so are the risks. Conflict in the Korean Peninsula would have far-reaching implications, especially now that North Korea claims to be nuclear-armed. North Korea's missile sales and nuclear exports to Middle Eastern countries on Europe's periphery directly challenge EU member states' security interests. When the European Security Strategy, 'A secure Europe in a better world', in December 2003 defined WMD proliferation as one of

⁴⁷ Pollack, J., 'Ballistic trajectory: the evolution of North Korea's ballistic missile market,' *Nonproliferation Review*, vol. 18, no. 2 (2011), pp. 411–29.

⁴⁸ United Nations, Security Council, Report of the Panel of Experts established pursuant to Resolution 1874 (2009), Unpublished 2011, paras 83, 88.

⁴⁹ Zaw Win Than, 'U Thein Sein makes pledge on North Korea military ties,' *Myanmar Times*, 21–27 May 2012.

⁵⁰ Council Decision 2010/800/CFSP of 22 Dec. 2010 concerning restrictive measures against the Democratic People's Republic of Korea and repealing Common Position 2006/795/CFSP', *Official Journal of the European Union*, L341, 23 Dec. 2010.

⁵¹ Copenhagen Economics and Francois, J. F., 'Economic impact of a potential free trade agreement (FTA) between the European Union and South Korea', Mar. 2007, <http://trade.ec.europa.eu/doclib/docs/2007/march/tradoc_134017.pdf>.

the 'key threats' to Europe, it identified North Korea as one of the areas of concern.⁵²

Reflecting the importance of the issues involving North Korea, 25 of the 27 EU member states have established diplomatic relations with North Korea. Estonia and France are the two outliers, with France previously stating human rights concerns as its reason.⁵³ France in 2009 appointed a Presidential Envoy for North Korea and in 2012 established a cultural office in Pyongyang, however, and appeared to be heading for full diplomatic relations. Seven member states maintain resident embassies in Pyongyang: Bulgaria, the Czech Republic, Germany, Poland, Romania, Sweden and the UK.

At times, the EU has sought to become more than a bit player. In 1996 the EU established a humanitarian aid office in Pyongyang and the next year the EU (represented by Euratom) joined as a voting member of KEDO's Executive Board in exchange for a substantial multiple-year contribution covering approximately one-third of the annual cost of the fuel oil provided to North Korea. In May 2001 the EU established diplomatic relations with North Korea, although agreement was never reached on accreditation of ambassadors. The establishment of relations followed the visit to North Korea that month of a high-level delegation led by Swedish Prime Minister Göran Persson (Sweden occupying the EU Presidency at the time), EU High Representative for Common Foreign and Security Policy Javier Solana and EU Commissioner for External Affairs Chris Patten.

'Critical engagement' was the catchphrase for the EU's new North Korea policy: talking with North Korea but being critical of policies and practices of concern, including proliferation and human rights. In March 2002 the EU adopted a 'country strategy paper', scoping out full-fledged development cooperation. Beginning in 1995, when famine conditions in North Korea first became apparent, the EU had begun to provide food aid. Just months after the country strategy paper was adopted, however, good intentions for development assistance were torpedoed by the second nuclear crisis. When North Korea was found

to have initiated a uranium enrichment programme and then expelled inspectors, the EU and its member states decided to stop development assistance and to limit aid for humanitarian relief. Implementation of the country strategy paper was suspended and it was decided that relations should be conducted not above the director level. An annual dialogue has continued at this lower level, mostly addressing practical aspects of EU assistance. The EU raises issues of concern over nuclear and missile proliferation, human rights and inter-Korean tensions, but it is largely a sterile discussion. Because the EU is not involved in the talks that count, in the Six-Party Talks process, its voice does not carry far.

Since 1995 the EU has provided North Korea over €366 million in food aid, medical, water and sanitation assistance and other forms of agricultural support, financed under the Food Security Thematic Programme of the European Commission's regional development cooperation instrument for Asia.⁵⁴ In addition, a series of bilateral agricultural projects have been supported by Sweden, Germany and Ireland.⁵⁵ The EU does not apply political conditionality to humanitarian aid, even though a decision was taken to 'mainstream' non-proliferation by linking together all available instruments to achieve non-proliferation objectives. In 2011, €10 million of grain was sent in response to an appeal by North Korea's Foreign Minister, although a decision was delayed until a humanitarian assessment team could confirm that the nutrition situation was indeed worse than in previous years. The EU also contributed €120 million to KEDO before the project unravelled. According to one British expert, the EU has probably provided more assistance to North Korea in the past decade and a half than any other country except China and South Korea.⁵⁶

The EU sought to play in the diplomacy that followed the second Korean nuclear crisis. Accordingly, in January 2003, the USA offered to meet North Korea in '5-plus-5' multilateral talks involving the permanent UN Security Council members (China, France, Russia, the UK and the USA) as well as Australia, the EU, Japan, North Korea and South Korea. North Korea

⁵² European Council, 'A secure Europe in a better world: European Security Strategy', Brussels, 12 Dec. 2003, <<http://www.consilium.europa.eu/uedocs/cmsUpload/78367.pdf>>.

⁵³ The human rights situation in North Korea has been a major concern of all members and since 2003 the EU has sponsored several resolutions on this issue at the UN General Assembly and the UN Human Rights Council.

⁵⁴ European External Action Service, 'Democratic People's Republic of Korea (North Korea)', <http://eeas.europa.eu/korea_north/index_en.htm>.

⁵⁵ European Commission, North Korea: Food Security Programme 2007, 'Guidelines for grant applicants', <<http://ec.europa.eu/europeaid/tender/data/d26/AOF80926.pdf>>, p. 3.

⁵⁶ Ford, G. and Kwon, S., *North Korea on the Brink: Struggle for Survival* (Pluto Press: London, 2007), pp. 11, 117.

only wanted bilateral talks with the USA, however, and it had no interest in a multilateral format in which it would be outnumbered. At most, North Korea would accept a six-party arrangement, in which it assumed (often wrongly) that it would have China and Russia on its side to balance the USA and Japan on South Korea's side.

If Six-Party Talks resume, EU diplomats will likely seek to become engaged more directly. In particular, it would make sense for the EU to have at least an observer status, if not an official role, in the working group on energy and economy, one of the five working groups established in 2005. Any solution to the North Korean proliferation problem will undoubtedly require economic and technical assistance of various forms, and as usual the EU will be looked to for contributions. The refrain of 'no say, no pay' may not find official expression in Council of the EU policy documents the way it has in European Parliament statements, but the desire to be a player and not just a payer accurately reflects sentiment in Brussels.⁵⁷ The sentiment will undoubtedly be pressed with diplomatic finesse if multilateral talks over North Korea's nuclear programme resume in earnest.

The EU will be better positioned to stake out a direct role in future negotiations if it establishes a diplomatic mission in Pyongyang and accepts a North Korea permanent presence in Brussels. This was to have happened after diplomatic relations were agreed in 2001, but implementation was stymied because one important EU member state did not itself have diplomatic relations with North Korea. Although there apparently is no plan to establish reciprocal missions, the roadblock will be removed if and when France follows through with expectations that its cultural centre in Pyongyang is the precursor to full diplomatic relations.

Proponents of stronger EU–North Korea relations have long argued that Europe, having no historical baggage and a wealth of soft power, is ideally placed to act as an 'honest broker' with North Korea and to help ease it out of its belligerent defence posture and isolating economic policies.⁵⁸ A decade ago, a spate of articles in the North Korean party newspaper, *Rodong Sinmun*, reflected a naïve North Korean conclusion

that because most European nations opposed US intervention in Iraq, the EU had both the will and the power to check and balance US military hegemony.⁵⁹

If North Korea pays attention to the current Iranian case, as surely it must, it will know that the EU and its member states are firmly opposed to nuclear proliferation and that there is no daylight between EU and US positions. It will also take note that the EU has the lead role in the engagement strategy with Iran and that it is the EU's sanctions measures that are arguably having the greatest impact. If the dual-track strategy of incentives and disincentives is successful in forestalling nuclear weapons production by Iran, credit will be due the EU member states and European External Action Service diplomats that stood firm.

Whether or not the Iran crisis is ameliorated, EU officials should be ready to apply their talents and resources to efforts to control the North Korean proliferation problem. As just one example, the European Space Agency can again offer satellite launch services as part of any prospective agreement under which North Korea would suspend missile-related development.

At the EU Non-Proliferation and Disarmament Conference on 3–4 February 2012, Belgian Special Envoy for Disarmament and Non-Proliferation Werner Bauwens called for a change in the situation that finds the EU largely absent in the context of the North Korean nuclear issue, and emphasized Europe's strategic and economic interests in the matter:

If the North Korean issue goes wrong, can you imagine what would happen to the economic and strategic interests of Europe in that region? In the same way, can you imagine what would happen in the region if they found a solution in the Six-Party Talks, where the EU is absent, and what the consequences of that would be on the EU's economic interests in the region, not having being considered a dealmaker? One way or another, the EU will suffer from that situation, which is why I am deeply convinced that we should invest much more as the EU in dealing with the North Korean issue.⁶⁰

⁵⁷ European Parliament, Resolution on the Non-Proliferation Treaty 2005 Review Conference: nuclear arms in North Korea and Iran, <<http://www.europarl.europa.eu/sides/getDoc.do?type=MOTION&reference=B6-2005-0148&language=EN>>.

⁵⁸ See e.g. Ford and Kwon (note 56), p. 11.

⁵⁹ Ford, G. and Kwon, S., 'Pyongyang under EU's wing', *Japan Times*, 17 Mar. 2005.

⁶⁰ International Institute for Strategic Studies, 'Third Plenary Session: Q&A Session', Transcript from the EU Non-Proliferation and Disarmament Conference, Brussels, 4 Feb. 2012, <<http://www.iiss>>.

Bauwens did not call for a fundamental change in EU policy in this regard. Nor does the author of this paper. There is room, however, for incremental enlargement of the EU footprint, beginning with exchanging missions, not least so that the EU can have a direct and permanent means of gathering information about North Korea and communicating with its authorities. Resumption of Six-Party Talks, if and when that happens, would provide the right political context to make this move, which should be combined with seeking observer status in one or more of the working groups.

Another way of reducing the risks Bauwens identified is for the EU to strengthen ties with South Korea, a process that is well underway now that the EU–South Korea free trade agreement is being provisionally implemented. Not only commercial but also political ties are being strengthened. The more intensive diplomatic relationship between Brussels and Seoul will make it harder in practice for the EU to stake out a position on North Korea that is significantly at odds with that of South Korea. But South Korea itself is likely to adjust its current hard-line policy towards North Korea when a new president takes over from Lee Myung-bak in 2013.

CONCLUSIONS

The sudden change of leadership in North Korea on the death of Kim Jong-il in December 2011 and the anointment of his twenty-something third son Kim Jong-un surely marks the beginning of a new phase in North Korea—for better or worse. No policy changes are evident on the horizon and the power transition appears to be going smoothly. There is a chance, however, that missteps by the young leader or internal power struggles could lead to the demise of the regime. The de facto abrogation of the acclaimed ‘Leap Day Deal’ with the USA just 16 days after it was struck probably reflects Kim Jong-un’s inexperience, but it also could be a hint of policy differences among senior advisors. In the months and years to come those policy differences could possibly result in economic reforms and other openings. Whichever direction North Korea takes, the EU should be there to benefit from the developments and to utilize its soft power to help the Korean Peninsula navigate a soft landing.

org/conferences/eu-non-proliferation-and-disarmament-conference/speeches/third-plenary-session/qa/.

ABBREVIATIONS

CEP	Circular error probability
CIA	Central Intelligence Agency
CWC	Chemical Weapons Convention
EU	European Union
HEU	Highly enriched uranium
IAEA	International Atomic Energy Agency
ICBM	Intercontinental ballistic missile
KEDO	Korean Peninsula Energy Development Organization
KPA	Korean People’s Army
LWR	Light water reactor
NPT	Treaty on the Non-Proliferation of Nuclear Weapons
OPCW	Organisation for the Prohibition of Chemical Weapons
WMD	Weapon(s) of mass destruction

A EUROPEAN NETWORK

In July 2010 the Council of the European Union decided to create a network bringing together foreign policy institutions and research centres from across the EU to encourage political and security-related dialogue and the long-term discussion of measures to combat the proliferation of weapons of mass destruction (WMD) and their delivery systems.

STRUCTURE

The EU Non-Proliferation Consortium is managed jointly by four institutes entrusted with the project, in close cooperation with the representative of the High Representative of the Union for Foreign Affairs and Security Policy. The four institutes are the Fondation pour la recherche stratégique (FRS) in Paris, the Peace Research Institute in Frankfurt (PRIF), the International Institute for Strategic Studies (IISS) in London, and Stockholm International Peace Research Institute (SIPRI). The Consortium began its work in January 2011 and forms the core of a wider network of European non-proliferation think tanks and research centres which will be closely associated with the activities of the Consortium.

MISSION

The main aim of the network of independent non-proliferation think tanks is to encourage discussion of measures to combat the proliferation of weapons of mass destruction and their delivery systems within civil society, particularly among experts, researchers and academics. The scope of activities shall also cover issues related to conventional weapons. The fruits of the network discussions can be submitted in the form of reports and recommendations to the responsible officials within the European Union.

It is expected that this network will support EU action to counter proliferation. To that end, the network can also establish cooperation with specialized institutions and research centres in third countries, in particular in those with which the EU is conducting specific non-proliferation dialogues.

<http://www.nonproliferation.eu>



FOUNDATION FOR STRATEGIC RESEARCH

FRS is an independent research centre and the leading French think tank on defence and security issues. Its team of experts in a variety of fields contributes to the strategic debate in France and abroad, and provides unique expertise across the board of defence and security studies.

<http://www.frstrategie.org>



PEACE RESEARCH INSTITUTE IN FRANKFURT

PRIF is the largest as well as the oldest peace research institute in Germany. PRIF's work is directed towards carrying out research on peace and conflict, with a special emphasis on issues of arms control, non-proliferation and disarmament.

<http://www.hsfk.de>



INTERNATIONAL INSTITUTE FOR STRATEGIC STUDIES

IISS is an independent centre for research, information and debate on the problems of conflict, however caused, that have, or potentially have, an important military content. It aims to provide the best possible analysis on strategic trends and to facilitate contacts.

<http://www.iiss.org/>



STOCKHOLM INTERNATIONAL PEACE RESEARCH INSTITUTE

SIPRI is an independent international institute dedicated to research into conflict, armaments, arms control and disarmament. Established in 1966, SIPRI provides data, analysis and recommendations, based on open sources, to policymakers, researchers, media and the interested public.

<http://www.sipri.org/>