

**DIRECTORATE-GENERAL FOR EXTERNAL POLICIES**  
**POLICY DEPARTMENT**



# **Nuclear Proliferation in North East Asia**

**SEDE**



## STUDY

# Nuclear Proliferation in North East Asia

### ABSTRACT

The nuclear dimension of the crisis in the Korean peninsula has been compounded since the end of the Cold war, particularly since the North Korean regime announced its withdrawal from the nuclear Non-Proliferation Treaty (NPT) in January 2003. The nuclear and ballistic programmes of the Democratic People's Republic of Korea (DPRK) have dangerously improved since the beginning of the decade and seem to have accelerated since 2014 in spite of the continuous strengthening of the international sanctions regime against Pyongyang's Weapons of Mass Destruction programmes.

Accordingly, tensions have risen dramatically in the Korean peninsula. In the current context, the resumption of the six-party talks – deadlocked since the spring of 2007 – remains very hypothetical. It is clearly dependent on a change of attitude on Pyongyang's part, something hardly predictable.

Even if 'strategic patience' towards North Korea has been challenged for some time, it may be that there is no better alternative to this policy. Comprehensively conceived, it should be understood as a strong policy of containment of the North Korean nuclear crisis in order to make possible the return of Pyongyang to negotiations.

As a subsidiary issue, it could be asked whether the EU could play a renewed role as regards to nuclear and ballistic proliferation in North East Asia.

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# Table of contents

Executive summary	5
1 Introduction	7
1.1 The multi-faceted nature of the DPRK's crisis and the long-term dimension of it	7
1.2 Recent acceleration	7
1.3 Purpose and structure of the study	7
2 The DPRK's nuclear and ballistic programmes: assessments	8
2.1 The nuclear programme	8
2.2 The ballistic missile programme	10
3 The DPRK's involvement in proliferation activities worldwide	11
3.1 Proliferation mechanisms used by North Korea: an overview	11
3.2 Nuclear proliferation	12
3.3 Ballistic proliferation	12
4 The international sanctions regime	13
4.1 The international community's responses	13
4.2 Description of the sanctions regime	16
4.3 How successful?	18
5 Effects on the global non-proliferation regime	21
5.1 The DPRK's nuclear crisis and the NPT	21
5.2 The risk of a 'proliferation cascade'	22
5.3 From non-proliferation to counter-proliferation	23
5.4 Risks and opportunities	24
6 The strategic dimension of the North Korean crisis	25
6.1 The US extended deterrence issue in North East Asia	25
6.2 The role of China	26
6.3 The strategic impacts for the EU	28
7 Conclusion	28

Appendices	30
Appendix No.1: Brief chronology of the North Korean nuclear and ballistic proliferation crises (1985 – 2016)	30
Appendix No.2: Summary of the 2016 Report of the Panel of Experts established pursuant to resolution 1874 (2009)	32
Appendix No.3: Overview of the main North Korean ballistic and cruise missiles	33
Appendix No.4: North Korean trade in recent years	36
Appendix No.5: Proliferation Security Initiative: Statement of Interdiction Principles	38
Appendix No.6: Notes of the Second Draft Presentation to the SEDE	40
Bibliography	49

## EXECUTIVE SUMMARY

The nuclear and ballistic dimensions of the crisis in the Korean peninsula have been highlighted in western countries since the end of the Cold war, particularly since the North Korean regime announced its withdrawal from the Non-Proliferation Treaty (NPT) in January 2003. One has to be reminded of the fact that the nuclear and ballistic missiles programmes of the regime are two aspects of a multidimensional crisis. The topic can be addressed either like a closed-ended question, which is often the case for diplomatic reasons, or like an issue that is very much interconnected to other issues in the Peninsula since the division of the country (1945 – 1953). In that fashion, ballistic and nuclear issues are to be addressed as factors among other factors of an internal, a regional, and a global crisis.

That being said, the nuclear and ballistic programmes of the DPRK have dangerously improved since the beginning of the decade and seem to have accelerated since 2014 in spite of the continuous strengthening of the international sanctions regime against Pyongyang's Weapons of Mass Destruction (WMD) programmes.

Accordingly, tensions have risen dramatically in the Korean peninsula for seven years. In the current context, the resumption of the six-party talks – deadlocked since the spring of 2007 - remains very hypothetical. It is clearly dependent on a change of attitude on Pyongyang's part which is hardly predictable.

The current North Korean leader Kim Jong Un has been consolidating his leadership over the regime, and the economy is being stabilized. Against that backdrop, a regime's collapse scenario seems to be unlikely to happen anytime soon.

The strengthening of the nuclear and ballistic programmes of the DPRK has had two main impacts so far: a security impact and a strategic impact. As far as security is concerned, it can be asserted that the nuclear non-proliferation norm has been lawfully, politically and morally weakened by the use of the withdrawal clause by the DPRK in January 2003. As far as strategic stability is concerned, the involvement of two regional stakeholders being at the same time global actors and strategic adversaries has made the nuclear and ballistic crisis in the Korean peninsula even more complicated.

Even if the US 'strategic patience' strategy towards North Korea has been very much challenged and criticized for some time, it may be that there is no better alternative to this policy. The United States are not prepared to attack the North Korea's nuclear and missile facilities even if « all the options » have been on the table according to American officials. The United States are not ready to accept a nuclear North Korea either. Resuming multilateral negotiations is a hypothetical option since the international community has no clear leverage at the moment. Resuming Six-Party Talks in these particular circumstances could bear the risk of strengthening Pyongyang's position while acclimating the international community to its nuclear status.

Comprehensively conceived, 'strategic patience' should be understood as a determined policy of containment and management of the North Korean nuclear crisis in order to make possible the return of Pyongyang to negotiations.

Whatever the future direction of the US policy towards North Korea, there is an imperative need for a comprehensive policy review after the November 2016 presidential election in Washington.

Be that as it may, the presidential election in the United States in November 2016 and the political turmoil in the Republic of Korea (ROK) during the autumn and winter of 2016 could indicate a turning point in the handling of the crisis in the Peninsula in 2017.

As a subsidiary issue, it could be asked whether the EU could play a renewed and maybe strengthened role as regards nuclear and ballistic proliferation in North East Asia in the future. Theoretically, the EU could

have the opportunity to appear as a new actor to help solve strategic issues in the Peninsula if the current deadlock with Pyongyang was to continue. This idea was called upon by numerous regional observers in the early 2000's. As Finnish Under Secretary of State Ambassador Jaakko Laajava stated in 2004 for instance, 'Northeast Asia, particularly the Korean peninsula, is a good example of a region where the European Union could be an active partner and catalyst for peaceful regional development'<sup>1</sup>. This is, also, notably the case in South Korea, where it is often considered that the limited European interests in the Peninsula and its willingness to become a global actor on nonproliferation matters make it a possible actor.

<sup>1</sup> 'The European Northeast Asian policy – partnership in strengthening security and stability', Institute of Foreign Affairs and National Security (IFANS), Seoul, Republic of Korea, March 30, 2004.

# 1 Introduction

## 1.1 The multi-faceted nature of the DPRK's crisis and the long-term dimension of it

The nuclear and ballistic dimensions of the crisis in the Korean peninsula have been highlighted in western countries since the end of the Cold war, particularly since the North Korean regime announced its withdrawal from the NPT in January 2003. One has to be reminded of the fact that the nuclear and ballistic missiles programmes of the regime are two aspects of a multidimensional crisis. The topic can be addressed either like a closed-ended question, which is often the case for diplomatic reasons, or like an issue that is very much interconnected to other issues in the Peninsula since the division of the country between 1945 and July 1953. In that fashion, ballistic and nuclear issues are to be addressed as factors among other factors of an internal, a regional, and a global crisis.

## 1.2 Recent acceleration

Negotiations between regional stakeholders and North Korea on the nuclear and ballistic aspects of the diplomatic crisis have been deadlocked from the beginning of the current decade.

2010 was a year of considerable tensions in the Korean peninsula, with the sinking of the *Cheonan* in May, the shelling of Yeonpyeong Island, and revelations of the existence of a facility of uranium centrifugation in November.

The nuclear crisis was still at the core of the international community's preoccupation after the third nuclear test of 12 February 2013. Then it seems that it was somehow neglected by western observers and analysts from 2013 to 2015 for several reasons: civil war in Syria and the chemical dimension of it (use of chemical weapons by the regime, adoption of the Chemical Weapons Convention – CWC by Syria and start of the dismantlement of the arsenal), diplomatic progress of the Iranian nuclear crisis (Geneva agreement of 24 November 2013, implementation of the interim agreement between January and July 2014), start of the Ukrainian crisis with Russia in winter 2013-2014.

Naturally, the third nuclear test by Pyongyang generated severe tensions in the beginning of 2013. It was followed by the adoption of a new sanctions resolution by the United Nations Security Council on 7 March 2013. The North Korean regime condemned the resolution as an act of particular hostility. Communication lines were interrupted between the North and the South, cyberattacks were perpetrated against Seoul and the relaunch of the nuclear complex in Yongbyon were announced. US-South Korean military exercises were conducted and air and naval American forces were deployed whereas Chinese troops were moved.

But one had to wait for the conclusion of a comprehensive nuclear agreement between Iran and the E3/EU + 3 on 14 July 2015 to see the nuclear and ballistic crisis in North Korea slowly coming back at the forefront of the international security agenda.

The presidential election in the United States of America (USA) in November 2016 and the political turmoil in the Republic of Korea (ROK) during the autumn of 2016 could indicate a turning point in the handling of the crisis in the Peninsula in 2017.

## 1.3 Purpose and structure of the study

This study follows five main objectives and is structured as such: to assess the DPRK's nuclear and ballistic missiles programmes as of the end of 2016 (part one); to describe the DPRK's involvement in proliferation activities worldwide as far as it can be using open sources (part two); to describe the international sanctions regime and to analyze the effects of it on the nuclear and ballistic programmes of the DPRK so far (part three); to analyze the effects of the North Korean crisis on the global non-proliferation regime (part four) and its strategic impact in the North-East Asian region (part five). A concluding section will be devoted to

the prospective dimension of the crisis and to the role that the European Union (EU) could play in the future.

## 2 The DPRK's nuclear and ballistic programmes: assessments

The nuclear and ballistic programmes of the DPRK have improved since the beginning of the current decade and seem to have accelerated for two years. As the authors of the 2016 edition of the *East Asian Strategic Review* put it, 'the country's words and actions in 2015 demonstrated that it has been solidifying its policy of improving its nuclear and missile capabilities (...).'<sup>2</sup>

### 2.1 The nuclear programme

It must be reminded that the International Atomic Energy Agency (IAEA) has not been able to verify comprehensively the DPRK's nuclear programme since 1994. Besides, no safeguards measures have been implemented by the Agency since April 2009. Consequently, assessing the DPRK's nuclear programme is cautiously possible on the basis of assumptions but cannot be very much developed based on open literature.

#### 2.1.1 The nuclear fuel cycle

North Korea's interest in a nuclear weapons programme dates back to the 1950's. In the mid-1960's, the regime established an atomic energy research complex in Yongbyon under a cooperation agreement concluded with the USSR. Specialists were trained from students who had studied in the USSR. In the 1970's, the research center focused on the study on the nuclear fuel cycle including refining, conversion and fabrication.

The North Korean nuclear weapons program dates back to the 1980's. Focusing on the completion of a nuclear weapon development system, North Korea began to operate facilities for uranium fabrication and conversion. US officials announced for the first time that they were able to prove that a secret nuclear reactor was being built near Yongbyon in 1985. The same year Pyongyang acceded to the NPT under international pressure but refused to sign a safeguards agreement with the IAEA before 1992.

In September 1989, the magazine *Jane's Defence Weekly* revealed that North Korea 'could manufacture nuclear devices in five years' time, and the means to deliver them soon afterward.' In July 1990, *The Washington Post* reported that new satellite photographs showed the presence in Yongbyon of a structure which could possibly be used to separate plutonium from nuclear fuel<sup>3</sup>. Since then, Pyongyang has developed a nuclear fuel cycle capability and has both plutonium and enriched uranium programs capable of producing fissile material. North Korea declared it had roughly 38,5kg of weapons-grade plutonium extracted from spent fuel rods in May 2008, however external estimates have varied. North Korea produces plutonium in its 5 MWe reactor of Yongbyon. According to the Institute for Science and International Security (ISIS) estimates as of mid-June 2016, 'the reactor could have produced an estimated 5, 5-8 kilograms of weapon-grade plutonium since its 2013 restart.'<sup>4</sup>

In October 2002, the North Koreans acknowledged that the regime had been pursuing a uranium-enrichment programme. In May 2009, one month after declaring that it would no longer participate in the six-party talks and that it would no longer be bound by any of the previous agreements reached so far, North Korea admitted that it had a uranium enrichment programme and that it would use enriched fuel to

<sup>2</sup> East Asian Strategic Review 2016, NIDS, May 2016, pp.78.

<sup>3</sup> North Korean Nuclear Weapons Program, Globalsecurity.org

<sup>4</sup> David Albright, Serena Kelleher-Vergantini, Plutonium, Tritium, and highly Enriched Uranium Production at the Yongbyon Nuclear Site, ISIS Imagery Brief, 14 June 2016.

power a planned light-water reactor. According to ISIS mid-June 2016 estimates, 'the Yongbyon centrifuge plant could have made enough weapon-grade uranium<sup>5</sup> in 2015 and the first half of 2016 for 2,6 to 6,5 nuclear weapons equivalent (...).'<sup>6</sup>

### 2.1.2 Nuclear testing

Five underground nuclear tests have been conducted since 2006.<sup>7</sup>

On 6 January 2016, the DPRK announced that on that day '[t]he first H-bomb test was successfully conducted in the DPRK'.<sup>8</sup> But many experts doubt Pyongyang's claims that the regime tested a fusion bomb during its fourth nuclear test. According to others, it might have been a boosted fission device<sup>9</sup>.

The latest North Korean nuclear test was conducted on 9 September 2016 near Punggye-ri, North East of the country. According to the Executive Secretary of the Preparatory Commission for the CTBT Dr. Lassina Zerbo that day, 'today at 0.030 UTC, our verification system detected an unusual seismic event of magnitude close to 5. This was followed by an announcement by the Democratic People's Republic of Korea that it had conducted another nuclear test.'<sup>10</sup> 25 seismic stations of the International Monitoring System (IMS) of the CTBTO Preparatory Commission contributed. Eventually the test registered at 5.1 on the Richter scale<sup>11</sup>, which indicates an explosion yield of 10 to 15 kilotons whereas it must be said that estimates vary between western and Korean sources from 10 to 25 kilotons. If the estimates prove to be correct, the magnitude of the second 2016 nuclear test would be approximately twice as large as the previous one.

Even if scientific data have not been available in open literature since September 9, 2016, many assumptions have been made. According to the Nuclear Weapons Institute of the DPRK, this latest test was of 'a newly researched and manufactured nuclear warhead.' It was the first time that the regime used the word 'warhead' for its tests. The DPRK's nuclear tests being underground, it has not been possible to confirm or rebut this allegation so far.

### 2.1.3 How many nuclear warheads?

North Korea's capacity to produce plutonium is approximately 6 kilograms per year, which is enough to fuel one bomb annually. Usual estimates consider that the country has enough plutonium for 6 to 8 bombs (i.e. between 32 and 54 kilograms of plutonium) as of now.

As to the production of highly enriched uranium (HEU), estimates are much difficult to make. According to Siegfried Hecker, an American nuclear scientist at Stanford University and a former director of the Los Alamos National Laboratory (1986 – 1997, USA) who visited the Yongbyon centrifuge facility in November 2010, 'the expanded footprint of the facility since, and our probabilistic estimates of how much it could make in covert facilities, it is possible that the DPRK could add 150 kg of HEU (roughly 6 bombs' worth) to a current stockpile of perhaps 300 to 400 kg.'<sup>12</sup>

<sup>5</sup> HEU is considered weapon-grade when enriched to about 90% U-235<sup>†</sup>

<sup>6</sup> Ibid.

<sup>7</sup> See Appendix No.1.

<sup>8</sup> DPRK Proves Successful in H-bomb Test, KCNA, 6 January 2016

<sup>9</sup> For the record, a boosted fission device is a nuclear bomb that uses some fusion fuel to increase the rate of a fission reaction. The neutrons released by the fusion reactions add to the neutrons released due to fission. Then more neutron-induced fission reactions can take place. The fission device is boosted.

<sup>10</sup> Remarks by the Executive Secretary on Announced Nuclear Test by the Democratic People's Republic of Korea at the meeting of the Commission on 9 September 2016.

<sup>11</sup> Or 5.3 according to US data.

<sup>12</sup> Siegfried S. Hecker, What to Make of North Korea's Latest Nuclear Test? 38 North, 12 September 2016.

To sum up, the North Korean regime could have enough fissile material for approximately 20 to 25 bombs by the end of 2016 depending on the estimates. Other estimates mention 13-21 nuclear weapons as of June 2016. Around 7 bombs a year could be added from 2017.

## 2.2 The ballistic missile programme

The pace of ballistic missiles tests has accelerated since 2014 when the sustained high number of launches was higher than it used to be.

The intermediate range ballistic missile Musudan<sup>13</sup> has been tested nine times in 2016<sup>14</sup>. It seems that it failed eight times. Paradoxically, since North Korean engineers learn from their setbacks, it is a rather bad news as to the advances of the missile programme which could prove to be faster than it has been expected by foreign experts so far. First it means that the North Koreans are seriously committed to the Musudan. Then a partially operational device could appear next year or in 2018, depending on estimates.

North Korea launched three modified Scud missiles in September 2016. The engines were launched from mobile launchers. They travelled about 1000 km above the East sea before crashing.

North Korea recently used a solid-propellant technology to propel its KN-11 missile, a submarine-launched ballistic missile. The country has limited experience in solid-fueled missiles.

According to estimates, from 18 to 26 delivery vehicles were tested by North Korea from January to August 2016. This is to be compared with 12 tests in 2015, 19 in 2014, 7 in 2013.<sup>15</sup> The pace of ballistic missile tests by North Korea has accelerated so much this year that it is convenient to distinguish between missiles under development and operational ones.

Among the first type are 'the Unha satellite launch vehicle, the Musudan intermediate-range ballistic missile, and the KN-11/ Bukkeukseong-1 submarine-launched ballistic missile. In the latter two cases, roughly half a dozen tests have been conducted in the past year alone. Other developments include ground test activity for the new KN-08/KN-14 intercontinental ballistic missile and a yet-unnamed solid-propellant intermediate-range ballistic missile presumed under development.'<sup>16</sup>

As to the operational vehicles, most of them concern Scuds, the occasional Nodong and increasingly the new KN-02. These tests have been conducted around a dozen times a year by now.

What seems to be relatively new is that all the recent North Korean ballistic tests have been openly shown. On the one hand, it helps to have a more accurate idea of the operational arsenal as of the technological developments of the programme. On the other hand, it looks like a propaganda campaign.

On 20 September 2016, the North Korean Central News Agency (KCNA) reported the testing of a large new rocket engine at the Sohae Satellite Launching Station. According to the press agency, this new engine could be used for a new space launch vehicle. Whatever the specifics of the story, it indicates a basic capability of the country in outer space as well as a capability to build rockets using solid and liquid propellants. As expert John Schelling argues, 'Whatever missiles North Korea may roll out in coming years, we can no longer expect to be limited to what can be cobbled together from old Russian cold-war leftovers.'<sup>17</sup>

Some comments have to be made about the apparent success of North Korea's latest submarine-launched ballistic missile (SLBM) test in August 2016. It suggests that the programme may be progressing faster than expected by foreign observers. Depending on experts, an initial operational capability could be envisaged

<sup>13</sup> The DPRK refers to what foreign observers call the Musudan as Hwasong-10.

<sup>14</sup> As of 23 October 2016.

<sup>15</sup> DPRK Tests of Delivery Systems, 38 North/US Korea Institute at Johns Hopkins SAIS, August 2016.

<sup>16</sup> John Schilling, Monitoring the Threat: a Timeline of North Korean Missile Tests 2013-2016, 38 North, 24 August 2016.

<sup>17</sup> Ibid.

by the end of 2018 or later. Theoretically speaking, the GORAE-class submarine could be used to field an SLBM. But North Korea possesses a single prototype of it. To deploy it would not be a real threat. Besides, it has only been put to sea for short periods in coastal waters to date. It is not enough to qualify it as operational. Having said that, it must be added that the regime seems to be in the process of building up new infrastructure to construct additional submarines in the future. According to open sources though, it is hard to assert that actual submarine construction has started. In terms of probability, it can be argued that a new submarine might be built within a three years' time frame. Nevertheless, the likelihood of building new models without further testing is still low.

Lastly, North Korea has tested a new 300 mm multiple rocket launcher (MRL) with a suspected accurate terminal guidance<sup>18</sup> and a much longer range. It is being suspected to exist since 2014. It was first displayed in Pyongyang on 10 October 2015 during a parade. According to NK News, 'the design of North Korea's 300mm MRL system was likely influenced not only by similar Russian and Chinese 300mm MRLs, but perhaps also the American 227mm Guided Multiple Rocket Launch System (GMLRS) and South Korean 239mm Chunmoo K-MLRS.'<sup>19</sup> This new system is a major upgrade to existing artillery. It gives Pyongyang the capability to take out targets deep in South Korea with precision and with little advance preparation. Unconfirmed yet, the ranges of the MLR could exceed 100 km.

Generally speaking, North Korean ballistic capabilities are improving but must not be exaggerated as far as strategic challenges are concerned. The North has not shown the ability to successfully launch an ICBM so far. It obviously has not demonstrated the survivability of a nuclear warhead during the reentry phase into the atmosphere yet.

### 3 The DPRK's involvement in proliferation activities worldwide

#### 3.1 Proliferation mechanisms used by North Korea: an overview<sup>20</sup>

North Korea has established mechanisms designed to consolidate its supply of goods and technologies whose exporting is regulated. These mechanisms evolved over time to contribute to the financing of the North's nuclear and ballistic programmes. They have been bolstered to allow Pyongyang to maintain its proliferating activities despite all the sanctions regimes being in force.

The North Korean system of proliferation centres on front companies which are acting within a network. They can be found in the nuclear and ballistic fields, but also in other fundamental sectors, such as finance or transport, or linked to strategic goods and raw materials, such as graphite and metals. The lifespan of these companies is short, principally because of the camouflage attempts to which the authorities in Pyongyang resort in an effort to circumvent sanctions. In the same vein as vessels of the North Korea merchant navy, which are regularly renamed and re-registered, the companies and institutions in question commonly change their company name and address. This makes the job of the authorities tasked with implementing export-control measures and following up on the execution of sanction regimes vis-à-vis North Korea all the more difficult.

The annual reports of the United Nations Panel of Experts created pursuant to UNSC resolution 1874 (2009) constitute an interesting source on the proliferation mechanisms operated by North Korea. For instance, the Panel's third report (June 2012) informed that North Korea's smuggling activities are modelled on transnational narcotics networks, which benefits from the volume of international trade. The May 2013 report of the Panel revealed that the majority of trafficking into and out of North Korea is carried out by sea, using containers, allowing it to be easily camouflaged. The report concludes that 'this represents a

<sup>18</sup> The Chinese rocket of the A300 has inertial and GPS guidance. CEP is about 30 to 45 meters.

<sup>19</sup> 'N.Korea reveals details of 300mm multiple rocket launcher', John G. Grisafi, NK News, 4 March 2016

<sup>20</sup> See CESIM, Observatoire de la Non-prolifération No. 83, August 2013, No.90, February 2014

particular challenge for global shipping companies, which regularly find that they unwittingly carried prohibited items'. North Korean charterers use transshipment ports to insert containers loaded with controlled goods into international trade flows. During these transshipments the charter documents are altered. Transport companies thus do not have the means to identify prohibited merchandise, or to establish that the container originated in North Korea once the transshipment has taken place.

The complexity of interdiction measures is another dimension that North Korean proliferating trafficking networks take full advantage of. For instance, the International Civil Aviation Authority has its own rules concerning the transportation of dangerous merchandise that airlines apply in order to restrict the transport of weapons. These rules do not correspond to the definition of 'all weapons and related material' cited in UNSC resolution 1874. This loophole has facilitated North Korean exports of different military materials by air so far. The same is true for companies that export industrial goods that could be used in nuclear or ballistic programmes. Buyers in proliferating States increase the number of front companies and intermediaries, which, in conjunction with the complexity of export control regulations, allows them to acquire goods and technologies examined by companies that are unaware of the illegality of the transaction.

### 3.2 Nuclear proliferation

In February 2005, *The New York Times* and *The Washington Post* reported that Libya received uranium hexafluoride suspected to be of North Korean origin the year before. According to the *Arms Control Today* magazine, U.S. and other diplomatic sources indicated that the material originated in North Korea.

North Korea was suspected in 2007 of having provided a nuclear reactor to the Assad regime in Syria: when on 6 September 2007 Israel carried out an air-strike destroying a Syrian facility, press reports suggested that the target was a nuclear facility under construction with North Korean assistance.

Whereas nuclear proliferation from North Korea has been heavily suspected for a long time, there has been no precise evidence of it so far in open literature.

### 3.3 Ballistic proliferation<sup>21</sup>

The North Korean ballistic missiles programme provides cause for concerns due to North Korea's proliferating behavior in the Middle East.

In December 2002, Spanish and U.S. naval forces intercepted a vessel carrying a shipment of North Korean Scud missiles to Yemen. This event led the US to launch a global interdiction mechanism in spring 2003, named the Proliferation Security Initiative (PSI).<sup>22</sup>

It has been demonstrated that Pyongyang has supported the Iranian and Syrian weapons programmes since the 1980s. The scientific and technical cooperation agreements signed between North Korea and Syria in 2002 and North Korea and Iran in 2012 illustrate these three States' desire to cooperate with one another.

North Korean technology is discernible in the conception and development of missiles such as the Iranian Shahab-3 or the Syrian Scud-D.

The North Korean missile proliferation activities towards Iran began at the end of the 1980's. Depending on estimates, North Korea shipped between 200 and 300 Soviet built Scud B and Scud C missiles to Iran between the end of the war against Iraq and the beginning of the 1990's. These missiles were renamed by Iran Shahab-1 and Shahab-2 respectively. The relationships between the two countries continued during the 1990's, Pyongyang delivering to Iran medium-range Nodong missiles which became the Shahab-3.

<sup>21</sup> See CESIM, Observatoire de la Non-prolifération No.92, April 2014

<sup>22</sup> See Appendix No.5.

Another recipient of the Nodong missile was Pakistan at that time: they renamed it the Ghauri. The Shahab-3 was improved in Iran in order to improve its range from 1000 km to 1600 km: the Gadr missile was tested for the first time by Iran in 2004. Technology exchanges are illustrated by the similarities between the Nodong missiles and the medium-range Iranian Shahab-3 ballistic missiles. These exchanges, denied by Iran, were denounced by a United Nations expert panel in 2011.

According to US expert on North Korean missile proliferation activities Michael Elleman, 'there is little evidence to indicate the two regimes are engaged in deep missile-related collaboration, or pursuing joint-development programs.'<sup>23</sup> Nevertheless, signs of deeper cooperation between Iran and North Korea have to be carefully watched out in the future.

It seems that the two countries have been working hard to violate the international sanctions imposed against Syria, by providing arms to the country through intermediaries and front companies. More precisely, collaboration with North Korea would allow Damascus to strengthen its Scud-D ballistic arsenal, with an estimated range of 700 km, while cooperation with Iran would aim to modernise the medium-range Khaibar 1 rockets (with a range of around 100 km).

These rockets would be supplied to Hezbollah, another key actor in ballistic proliferation in the region. Delivery of the rockets to Lebanon would be carried out as discretely as possible in order to avoid Israeli detection. These activities are also believed to be the cause of accelerated Israeli missile-defence research.

The UN Panel of Experts report in June 2013 cited two seizures of North Korean items: missile-related in 2012, and weapons-related in 2010, destined for Damascus.

## 4 The international sanctions regime

The international sanctions regime has been for ten years the main diplomatic answer at the multilateral level against the nuclear and ballistic evolving programmes of the DPRK. Considering the accelerating pace of these programmes, condemnatory UN resolutions and new sanctions taken since the deadlock of the six party talks have been recently considered symbolic by some. It has to be recognized that little has been done to address the problem differently within the main capitals involved in the handling of the crisis. The issue of the sanctions' effectiveness towards the nuclear and ballistic programmes of the DPRK is being very much debated.

### 4.1 The international community's responses

For the record, the DPRK and the US were responsible for implementing the 1994 Agreed Framework, whereby North Korea pledged to freeze its nuclear programme in exchange for energy aid, including two proliferation-resistant light-water reactors. A Korean Peninsula Energy Development Organization (KEDO) was set up in March 1995 to implement the US-DPRK Agreed Framework of 1994. Japan, South Korea, and the European Union (EU) assisted in the implementation of the agreement, even if they were not involved in its negotiation.

The Agreed Framework collapsed in October 2002 after Assistant Secretary of State James Kelly confronted North Korea with evidence of a secret uranium enrichment programme. The United States initiated the halting of energy assistance to North Korea at the end of 2002. In response, Pyongyang expelled international monitors. In January 2003, North Korea declared its withdrawal from the NPT. The KEDO formally ended in 2006.

<sup>23</sup> Michael Elleman (IISS-Americas), 'North Korea-Iran Missile Cooperation', 38 North, 22 September 2016.

#### 4.1.1 The Six-Party Talks and beyond

The six-party talks were launched in August 2003 and collapsed in 2007 even if the talks officially lasted until 2009. They included a series of multilateral negotiations attended by China, Japan, North Korea, Russia, South Korea, and the United States for the purpose of dismantling North Korea's nuclear programme. The talks were hosted in Beijing and chaired by China.

U.S., Chinese, and North Korean officials resumed talks on the nuclear issue in April 2003. North Korea had previously insisted on pursuing negotiations with the United States on a bilateral basis. The administration of George W. Bush, on its part, preferred a multilateral approach that was in explicit contrast with the strategy adopted by the Clinton administration that had led the Agreed Framework. In early August 2003, North Korea declared its willingness to attend six-party talks after reviewing a proposal from the United States.

After four rounds of talks, the six parties achieved a first breakthrough on 19 September 2005. The joint statement issued that day announced agreed steps toward the denuclearization of the Korean Peninsula 'in a phased manner in line with the principle of commitment for commitment, action for action.' North Korea committed itself to abandoning all nuclear weapons and existing programs, returning to the NPT and accepting IAEA inspections. The other parties agreed to North Korea's right to peaceful uses of nuclear energy. They also agreed to discuss the provision of a light water nuclear reactor 'at an appropriate time.' They stated their willingness to supply North Korea with energy aid. The United States and South Korea affirmed that they would not deploy nuclear weapons on the peninsula. The United States and Japan committed themselves to working to normalizing relations with North Korea.

The fifth round of talks welcomed, in February 2007, the so called 'February 13 agreement': North Korea committed to shutting down and sealing the Yongbyon nuclear facilities and to discussing a list of its nuclear-related activities with the other parties. The United States and Japan committed to engaging in talks to normalize relations, while all parties would work to provide 50,000 tons of heavy fuel oil, all within the 60-day period. The United States also agreed to begin the process of removing North Korea from its list of state sponsors of terrorism and terminating the application of the Trading with the Enemy Act with regards to North Korea. The agreement set a 19 March 2007 date for a Sixth Round of talks.

A six round of talks began in March 2007 until April 2009: then Pyongyang test-fired a modified Taepo Dong-2 three-stage rocket. The UN Security Council expanded sanctions on North Korean firms. North Korea responded by declaring that it would no longer participate in the six-party talks and that it would no longer be bound by any of the previous agreements reached in the discussions.

The six party talks have been deadlocked since the start of the first Obama presidential mandate. In spite of the current diplomatic impasse, the United States, China, Japan, and South Korea continued to work in the hope of breaking the deadlock. On 29 February 2012, the United States and North Korea announced a 'leap day' agreement: the U.S. would provide substantial food aid in return for the North agreeing to a moratorium on uranium enrichment and missile testing and a return of IAEA inspectors to Yongbyon. According to the description given by the US State Department then, North Korea 'agreed to implement a moratorium on long-range missile launches, nuclear tests and nuclear activities at Yongbyon, including uranium enrichment activities.'<sup>24</sup> On 16 March 2012, North Korea announced it was planning to launch a satellite. On 6 April 2012, North Korea's rocket launch failed to enter into orbit. The test was described as a provocative test of missile technology, and the United States decided to suspend their food aid. Resumption of the six-party talks has been once again announced in January 2014 through the official Chinese Xinhua News Agency. According to the press agency, the DPRK ambassador to China had received

<sup>24</sup> Quote from Ankit Panda, A Great Leap to Nowhere: Remembering the US-North Korea 'Leap Day' Deal, The Diplomat, 29 February 2016.

DPRK agreement on resumption of the six-party talks. He called on the United States to fulfill its related obligations.

Actually, it can be asserted that the six-party talks collapsed after March 2007 and have never been resumed seriously since then.

#### 4.1.2 The case of the EU's involvement

The negative effects of the DPRK's nuclear programme on the global nuclear nonproliferation regime, the increase in the range of North-Korean ballistic missiles and the risks of nuclear and ballistic proliferation from North Korea are the three main factors explaining the EU's involvement in the North Korean crisis since the mid 1990's.

The European Union has actively participated to the first phase of the North Korean nuclear crisis in the middle of the 1990s through the European Atomic Energy Community (EURATOM), which took part in the Korean Peninsula Energy Development Organization (KEDO), which was for its part set up in March 1995 to implement the US-DPRK Agreed Framework of 1994. EURATOM has contributed to funding the two light-water reactors (LWR) and was active in this regard from 1997 (ECU 75 million over five years). The second agreement between EURATOM and the KEDO in 2001 renewed European participation to the Board of Directors of the Organization as well as its annual financial contribution of €20 million until 2005. This regular participation has considerably helped the Organization to operate, which would have been under-funded without European support. But it is a fact that the failure of KEDO can be perceived indirectly as a failure of European engagement, which did not produce results and was eventually abandoned together with the LWR project.

The analysis of the six-monthly reports on the implementation of the EU Strategy against WMD proliferation starting from the first report of June 2004 indicates a clear willingness to suspend the direct involvement of the European Union in the diplomatic efforts meant to resolve the North Korean nuclear crisis: the European Union was not a member of the six-party talks. North Korea is not even listed as a topic in the first five reports on the implementation of the Strategy. Only the December 2006 report mentions the crisis, where the European Union condemns Pyongyang's first nuclear test of October 2006. A Common Position (2006/795/CFSP) is adopted to enable the implementation of the UN Security Council Sanctions Resolution 1718 of October 2005.

Since then, the European Union's position is meant to first support the six-party talks process, then to ask 'the complete, verifiable, and irreversible dismantlement of North Korea's nuclear programs, in order to denuclearize the Korean Peninsula,' and finally to actively participate to the sanctions regime set up since the adoption of UNSC resolution 1718, which was subsequently reinforced by UNSC resolution 1874. The report of December 2010 promises to ensure 'a robust implementation' of UNSC resolution 1874 via the Council Regulation 567/2010 of June 29, 2010<sup>25</sup>. The report of July 2011 is very short on the matter, stating that 'regarding the DPRK, the EU has continued to be supportive of the resumption of the six-party talks process. Implementation of UNSC resolutions 1718 and 1874 has been further strengthened.'<sup>26</sup> Still it is important to note that the sanctions adopted by the European Union go further than the UNSC resolutions. Finally, one should note the adoption on November 19, 2007 of a Common Action aimed to support the IAEA's verification activities in North Korea for an amount of €1.78 million (2007/753/CFSP). In doing so, the European Union remained loyal to its position, in place since 2003, intended to support international organizations dealing with nonproliferation issues in order to favor 'effective multilateralism.'

<sup>25</sup> Council Regulation (EU) No 567/2010 of June 29, 2010.

<sup>26</sup> Eleventh six-monthly Progress Report on the implementation of the EU Strategy against the Proliferation of WMD (2011/I), Council of the European Union, Brussels, 20 July 2011, p.4.

The European Union's relative reserve about other forms of engagement to address the North Korean nuclear crisis has to do with several factors: first, the failure of the KEDO has created a precedent that favors a careful approach to the problem. In particular, as Clara Portela puts it, 'despite the fact that the Council has been taking stock of the question regularly, the input of the EU in the negotiations has remained minor. One of the reasons accounting for this reduced input is the intra-European disagreement as to how react to North Korea's new uranium enrichment programme.'<sup>27</sup> Moreover, the European Union's strong involvement to help resolve the Iranian nuclear crisis since 2004 mobilized much potential. The opening of a second, risky diplomatic front about a problem less directly threatening for European interests presented a real risk for a common and yet inexperienced diplomacy with regard to nonproliferation matters. In addition, the main strength of the European Union in the nonproliferation field remains the value added it can make to the operation of effective cooperation and of assistance programs with requesting parties, above all since the adoption of the 'new lines for action' in December 2008. The current deadlock in negotiations with North Korea does not make it possible for the European Union to play this role vis-à-vis Pyongyang. Finally, there is no consensus among EU Member States for a more direct approach.

## 4.2 Description of the sanctions regime

### 4.2.1 From 2006 to 2016

The UN Security Council (UNSC) adopted five resolutions against North Korea since its first nuclear underground test in 2006, paving the way for an international sanctions regime focused on denying North Korea access to technology, materials and assistance for its nuclear and missile programmes.

The first UNSC resolution was adopted on 14 October 2006: Resolution 1718 forbade North Korea from undertaking any further nuclear weapons tests or the launch of a ballistic missile, and imposed wide-ranging prohibitions on trade with North Korea in items related to its nuclear, missile, and conventional arms programs. It also imposed an asset freeze and travel ban against North Korean individuals and entities to be named later, and established a luxury goods import ban against the country. The resolution also authorized inspections of cargo shipments to North Korea that were suspected of containing illicit goods, thus giving a more robust legitimacy to the US driven Proliferation Security Initiative (PSI) adopted in 2003.

UNSC resolution 1874, which was adopted in June 2009 after the second nuclear underground test by the DPRK, expanded the reach of the arms embargo. It added new language that supported the framework of inspections and interdictions suggested in UNSC resolution 1718. It also laid the groundwork for tightened economic sanctions, encouraging states not to extend North Korea loans or export credits for their companies still trading with the North Koreans. The overall idea was to help states to enact their own economic sanctions, using the cover of UNSC support.

UNSC resolution 2087 was adopted in January 2013 after North Korea's satellite launch of December 2012, not to expand the sanctions regime against North Korea, but to emphasize the importance of States compliance with it.

UNSC resolution 2094, which was adopted in March 2013 after the North's third nuclear weapons test, expanded the list of individuals and entities subject to the asset freeze and travel ban, as well as widen the reach of measures intended to deny North Korea support for its nuclear and missile programs. Under UNSC resolution 2094, it became sanctionable to transfer bulk cash and other resources to North Korea if a connection to North Korea's illicit nuclear and missile activities was identified. Importantly, the fourth sanctions resolution of the UNSC made it obligatory for states to deny export assistance (such as export credits and loans) to any of their companies trading with North Korea, if the trade could assist North Korea

<sup>27</sup> Clara Portela, 'The Role of the EU in the Non-proliferation of Nuclear Weapons: The Way to Thessaloniki and Beyond', PRIF Report N°65, p.14.

in its proscribed activities. Last, UNSCR 2094 mandated inspections of North Korean cargo if reasonable grounds existed to suspect that the cargo contained UNSC-prohibited goods.

All in all, the international sanctions regime against Pyongyang's nuclear and ballistic programmes between 2006 and 2013 has progressively strengthened but it was linked to a demonstrated nexus between North Korean activity and its WMD programmes. Thus, any ambiguity could be a means for countries to avoid taking action. Besides, some of the provisions in these four resolutions could be differently interpreted. The will of North Korea's trading partners to take action was key for the nascent international regime to have any real value.

#### 4.2.2 UNSC Resolution 2270

UNSC resolution 2270 adopted on 2 March 2016 has deeply modified the ambition of the UN sanctions regime. It created a comprehensive, legally-binding sanctions programme. Its provisions cover both military programmes as well as broader economic issues, target major North Korean economic vulnerabilities and potential pathways for its procurement of foreign items necessary for its programmes.

The main measures of UNSC resolution 2270 can be listed as follows:

##### **New and strengthened actions**

- Prohibition on import from North Korea of coal, iron and iron ore (with some exceptions), and import of gold, titanium ore, vanadium ore and rare earth minerals as well as aviation fuel.
- Sweeping ban on North Korean bank branches and similar offices abroad, as well as joint ventures with North Korean banks. States are required to prohibit their banks from opening new offices in North Korea and to close existing ones if there is credible information that provides reasonable grounds to believe the associated financial services are contributing to North Korea's illicit activities.
- Requirement on states to inspect all North Korean cargo that crosses into their territory. States are also prohibited from permitting North Korea to lease or charter their flagged vessels or aircraft, or from letting their nationals operate North Korean vessels. All overflight of a state's territory is to be prohibited if there are reasonable grounds to suspect North Korean illicit cargo is aboard, and North Korea is denied port call access for any seagoing vessels if those same grounds exist.
- Prohibition on any trade assistance that supports trade with North Korea, if it could contribute to North Korea's nuclear and missile activities.
- Obligation for states to expel from their territories North Korean diplomats and any other foreign nationals engaged in illicit activities.

##### **Other actions**

- 'Catch-all' provision: Prohibition on any conventional arms-related trade with North Korea, including items that can enable North Korea to develop its forces, including dual use goods and equipment. North Korea is also forbidden to cooperate with other countries to improve their militaries or to receive military advice or training.
- Expansion of the list of proliferation-sensitive items that North Korea can no longer procure, including any item that another state determines could contribute to North Korea's nuclear or missile programs.
- Substantial expansion of the list of individuals and entities subject to the asset freeze and travel ban created in 1718.
- Expansion of the list of luxury goods banned for export to North Korea.

- Prohibition on any specialized teaching or training for North Korean nationals in areas that could contribute to North Korea's proliferation of sensitive nuclear activities or its development of nuclear weapon delivery systems.
- Reaffirmation that any space-related cooperation with North Korea is forbidden.

#### 4.2.3 UNSC Resolution 2321<sup>28</sup>

Nearly three months were necessary for the UNSC to draft and to pass a new sanctions resolution on North Korea after the fifth nuclear test by the regime last September 2016. It is indicative of the fact that China, and to some extent Russia, are still very reluctant to tighten the international sanctions regime against North Korea. The purpose was to close some of the main loopholes in previous resolutions against Pyongyang's nuclear and ballistic programmes.

UNSC resolution 2321 (30 November 2016)<sup>29</sup> introduces new restrictions and actions:

- Scientific and technical cooperation involving persons or groups officially sponsored by or representing the DPRK is prohibited.
- Foreign flagging of North Korean ships is prohibited.
- All States shall take steps to limit the number of bank accounts to one per DPRK diplomatic mission and consular post.
- All States shall prohibit their nationals from providing insurance or re-insurance services to vessels owned, controlled, or operated by the DPRK.
- Imports of North Korean non-ferrous metals are banned.
- Purchase of statues and monuments from the DPRK is prohibited.

Besides, UNSC resolution 2321 clarifies and tightens UNSC resolution 2270's restrictions on coal exports by the DPRK. It is the heart of the new system. To date, coal is the most valuable of the countries' exports and China is the first importer of North Korean coal in the world.<sup>30</sup> Whereas UNSC resolution 2270 prohibited coal imports from North Korea except when transactions were 'exclusively for livelihood purposes' without defining what the notion means, UNSC resolution 2321 is much more specific: 'total exports to all Member States of coal originating in the DPRK that in the aggregate do not exceed \$400,870,018 or 7,500,000 metric tons per year, whichever is lower, beginning January 1, 2017.'<sup>31</sup> A complex monitoring mechanism is associated. Properly implemented, the measure would halve Chinese coal purchases.

#### 4.3 How successful?

The international community's reactions against nuclear and ballistic testing by the DPRK have not managed to hamper Pyongyang's ballistic and nuclear programmes' development to date.

Speaking at the Council of Foreign Relations in New York on 1<sup>st</sup> November 2016, the Director of U.S. National Intelligence James R. Clapper Jr. said the U.S. policy of trying to persuade North Korea to give up its nuclear weapons 'is probably a lost cause'. 'I think the notion of getting the North Koreans to

<sup>28</sup> See for instance Marcus Noland, 'Analysis of UNSCR 2321 Sanctions on North Korea', November 30, 2016; Scott Snyder, 'Toughest Sanctions Ever: UN Security Council Resolution 2321', December 2, 2016; Andrea Berger, 'Recycling the Playbook: UNSCR 2321 and Its Coal Caps', December 16, 2016

<sup>29</sup> <https://www.un.org/press/en/2016/sc12603.doc.htm>

<sup>30</sup> More than 17 million tons of coal were imported in 2015 by China from the DPRK generating approximately 1 billion \$.

<sup>31</sup> OP 26 (b)

denuclearize is probably a lost cause,' Mr. Clapper said, adding: 'They are not going to do that (...). That is their ticket to survival.' In response to this assessment which has been very much relayed since then, the State Department spokesman John Kirby answered that the US's position on North Korea was unchanged: 'We want to see a return to the six-party talk process, and that means we need to see the North show a willingness and an ability to return to that process, which they haven't done yet (...).' We continue — our policy objective is to seek, to obtain a verifiable denuclearization of the Korean Peninsula,' he said. 'That is the policy.'<sup>32</sup>

This recent hiatus between two members of the Obama administration is significant. It reflects a real embarrassment of many US officials with the current approach of the nuclear crisis in the Korean peninsula. Has the Obama's 'strategic patience' policy towards the DPRK been a failure to date is an issue to be raised.

Strategic patience has been properly defined by a report of the US Congressional Research Service (CRS) in January 2016: 'The Obama administration's policy toward North Korea, often referred to as 'strategic patience,' is to put pressure on the regime in Pyongyang while insisting that North Korea return to the Six Party Talks. The main elements of the policy involve insisting that Pyongyang commit to steps toward denuclearization as previously promised in the Six-Party Talks; closely coordinating with treaty allies Japan and South Korea; attempting to convince China to take a tougher line on North Korea; and applying pressure on Pyongyang through arms interdictions and sanctions. U.S. officials have stated that, under the right conditions, they seek a comprehensive package deal for North Korea's complete denuclearization in return for normalization of relations and significant aid, but have insisted on a freeze of its nuclear activities and a moratorium on testing before returning to negotiations. This policy has been closely coordinated with South Korea and accompanied by large-scale military exercises designed to demonstrate the strength of the U.S. South Korean alliance.'<sup>33</sup>

A joint US Korea Institute at SAIS/Hoover Institution at Stanford University seminar held in mid-June 2016 concluded: 'Participants generally agreed that 'strategic patience' had failed—it seems to have been more an exercise in managing US domestic public opinion than an effective policy response. In retrospect, shunning North Korea only gave it breathing space to stabilize its domestic situation and push forward its strategic programs. While hope springs eternal, sanctions do not seem to be slowing the pace of Pyongyang's nuclear and missile programs. At this point, they serve primarily to give the appearance of action.'<sup>34</sup>

In another seminar held in June 2014<sup>35</sup>, 'strategic patience' was also assessed as a failure: the DPRK has survived a leadership transition, it seems to improve economically, it appears safe from the prospect of collapse, and it is being slowly recognized as a *de facto* nuclear weapons possessor state as are India, Pakistan or Israel.

According to many observers in the ROK, the strategic patience policy means 'non-strategic non-action.'<sup>36</sup>

Last, according to commentator Georgy Toloraya on 20 October 2016, 'the policy of strategic patience is thus a dangerous delusion. It gives the semblance of action, while North Korea continues to grow its nuclear and missile programs'<sup>37</sup>.

<sup>32</sup> Rick Gladstone, 'North Korea Giving Up Nuclear Arms 'a Lost Cause,' Official Says,' The New York Times, 25 October 2016.

<sup>33</sup> Emma Chanlett-Avery (coordinator), Ian E. Rinehart, Mary Beth D. Nikitin, North Korea: U.S. Relations, Nuclear Diplomacy, and Internal Situation, Coordinator Specialist in Asian Affairs, Congressional Research service (CRS), 15 January 2016.

<sup>34</sup> Security Cooperation in Northeast Asia: The North Korean Nuclear Issue and the Way Ahead, report published on 7 October 2016.

<sup>35</sup> Walter H. Shorenstein Asia-Pacific Research Center, Stanford University & Institute of Foreign Affairs and National Security, Korea National Diplomatic Academy, The Twelfth Korea-U.S. West Coast Strategic Forum, Seminar's report, June 2014.

<sup>36</sup> Ibid.

<sup>37</sup> Georgy Toloraya, Byungjin vs the Sanctions Regime: Which Works Better?, 38 North, 20 October 2016.

Many assessments consider the DPRK as a regime that could collapse at any moment but that could continue to exist for an important period of time. The economy has improved. Visible improvements in the quality of life especially in Pyongyang have been witnessed by many visitors to North Korea during the past two years.

That being said, it must be recalled that economic, social and political analyses of the DPRK are very rare and, in most cases, very vague. As an illustration, a Russian participant to the fifth international non-proliferation and disarmament conference of the EU Non-Proliferation Consortium held in Brussels on 3 and 4 November 2016 recognized that the economic improvement of the DPRK was a mystery to him whereas he has been visiting Pyongyang regularly for many years.<sup>38</sup> It is generally agreed that the Kim Jong-un regime has been implementing a two-track policy of economic development and nuclear weapons development so called the 'byungjin' line since 2012.

A pending question is whether there is another reasonable choice than restart a diplomatic process in a multilateral format in order to resume negotiations? It must be added that this question has to be accompanied by two following questions: is the purpose of negotiations to freeze on further missile and nuclear developments? Are high level officials in Pyongyang interested in taking the first step in a renewed negotiating process with the US? To some extent, it could be argued that considering its recent successes the North Korean regime could be exercising a sort of strategic patience vis-à-vis the US in their own way.

Would stronger sanctions be the solution? What current administrations in Washington and Seoul, but also in other countries, want to see from the international community are a tightened sanctions policy. Such a policy could comprise the closure of loopholes on mineral shipments across DPRK borders, a ban on textile and sea products exports, a ban on Air Koryo flights, a measure to prohibit ships that have visited North Korea from docking in other countries, a crackdown on cash flows (including those for the North's international workforce) and denial of access to the international banking infrastructure.

It must be recalled though that no consensus has been raised in the UNSC between the P5 since the fifth nuclear test on 9 September 2016 about common language for a resolution on the international condemnation of the test so far. Tightening international sanctions against DPRK is being challenged by China and Russia within the UNSC. Paradoxically, the difficulty with which a new condemnation resolution by the UNSC is being drafted in New York gives an indication of the ambition carried forward by the P3 in a new text. According to Samantha Power, the current U.S. ambassador to the UN, UNSC negotiations over the resolution are 'intense'. She has recently added that the United States wants a resolution that 'makes a substantive difference and changes the calculus over time of the North Korean leadership'.<sup>39</sup>

UNSC resolution 2270 was adopted in March 2016. It is too early to assess its efficiency. A first assessment will be produced and will be made available by the UNSC Panel of Experts of the 1718 Sanctions Committee at the beginning of 2017. In the meantime, it must be recognized that the measures adopted in UNSC resolution 2270 go well beyond any of the resolutions taken against the DPRK by the UNSC before March 2016. It has to be noted though that Chinese coal imports from the DPRK have not decreased from March to November 2016, demonstrating the flexible interpretation of China as to the coal restriction provision of UNSC resolution 2270.

UNSC Resolution 2321 was adopted on November 30, 2016. A first assessment of its implementation will be produced in 2018 by the UNSC Panel of Experts of the 1718 Sanctions Committee. If fully implemented, the new mechanism could delete 20% of the DPRK's external resources according to estimates. Whatever

<sup>38</sup> 2016 EU Non-proliferation and Disarmament Conference, EU Non-Proliferation Consortium, 3, 4 November 2016, Brussels.

<sup>39</sup> Kelsey Davenport, UN struggles over North Korea's actions, Arms Control Today, November 2016.

the results, the mechanism has already been described ‘the toughest sanctions ever’ by then Secretary-General Ban Ki-moon,<sup>40</sup> even if China’s compliance will be instrumental to the success of it.

Considering the way North Korea has resisted the international sanctions regime so far, many observers have been very sceptical about the effectiveness of the UNSC resolution 2321 since December 2016. As far as non-proliferation is concerned, recent history shows that international sanctions regimes are capable of producing results in a longer term perspective by targeting non-compliant countries and increasing the pressure on them.

## 5 Effects on the global non-proliferation regime

### 5.1 The DPRK’s nuclear crisis and the NPT

The global nuclear non-proliferation regime is based on the NPT which is in force since 1970. The DPRK acceded to the NPT as a Non-Nuclear Weapon States (NNWS) in December 1985. Six years after signing the NPT, North Korea concluded a comprehensive safeguards agreement with the IAEA<sup>41</sup>.

Article X of the NPT deals with the right of withdrawal and the duration of the Treaty.<sup>42</sup> Whereas the second paragraph of Article X was under some pressure at the beginning of the 1990s, the first paragraph of Article X has been under pressure after North Korea announced its intention to withdraw from the treaty in January 2003, using arguments noticed in 1993. At that time, that IAEA had demanded special inspections of two nuclear sites that were believed to store nuclear waste. North Korea had refused and had announced its intention to withdraw from the NPT in three months, citing Article X of the NPT. In June 1993, following talks with the United States in New York, North Korea had suspended its decision to pull out of the NPT.

From a legal point of view, article X of the NPT could not be lawfully invoked by the DPRK in January 2003 since no extraordinary event ‘related to the subject matter’ of the NPT occurred in 2002. Still, article X of the NPT is based on interpretation of States parties (‘if it decides’). Whatever the legal debate about the right of withdrawal pursuant to article X of the NPT, the main weakness of this article is that it is mostly auto-interpretative. It has been revealed as one of the major loopholes of the treaty by the decision that DPRK took thirteen years ago. Following several years of refusal by the community of States parties to the NPT (‘empty chair’ policy in the framework of the Treaty review cycle), North Korea’s decision had to be noted, and the country is today recognised *de facto* as a State possessing nuclear weapons outside of the NPT, even though the regime has undoubtedly no chance of obtaining *de jure* recognition of this state of affairs.

Consequently, it can be asserted that the nuclear non-proliferation norm has been lawfully, politically and morally weakened by the use of the withdrawal clause by the DPRK. The policy of the empty chair adopted by all the NPT review conferences’ presidencies since 2003 (2005, 2010, 2015) has been clearly suggesting a sense of discomfort by States parties vis-à-vis this major loophole.

<sup>40</sup> Security Council Strengthens Sanctions on Democratic Republic of Korea, Unanimously Adopting Resolution 2321 (2016), Meetings coverage, 30 November 2016

<sup>41</sup> 30 January 1992.

<sup>42</sup> Article X of the NPT:

‘1. Each Party shall in exercising its national sovereignty have the right to withdraw from the Treaty if it decides that extraordinary events, related to the subject matter of this Treaty, have jeopardized the supreme interests of its country. It shall give notice of such withdrawal to all other Parties to the Treaty and to the United Nations Security Council three months in advance. Such notice shall include a statement of the extraordinary events it regards as having jeopardized its supreme interests.

2. Twenty-five years after the entry into force of the Treaty, a conference shall be convened to decide whether the Treaty shall continue in force indefinitely, or shall be extended for an additional fixed period or periods. This decision shall be taken by a majority of the Parties to the Treaty.’

While withdrawal from the Treaty was long considered from the point of view of 'the right to', the North Korean episode eleven years ago, helped to indicate a weakness of the NPT and to insist on the issue of its strengthening, notably via Article X. Many States, including France, as well as the European Union, introduced the issue of withdrawal during the quinquennial Treaty review cycle, notably focusing on the question of the consequences of withdrawal.<sup>43</sup> Thus, a State that withdraws from the Treaty having violated its provisions would remain responsible for these violations subsequent to its withdrawal. A pre-meditated decision to pursue a military programme following withdrawal from the Treaty would be considered as a violation of the spirit of the text. A State that has withdrawn must no longer use the material acquired while it was a party to the Treaty and by virtue of that adherence. IAEA safeguards should also continue to apply following a State's decision to withdraw from the Treaty. The Security Council's role should also be clarified.

The issue of strengthening the right of withdrawal from the NPT has not yet been the subject of an operational solution, even though Security Council Resolution 1887 (24 September 2009) underlines the Council's role in the evaluation of cases of withdrawal from the NPT. The withdrawal clause has historically been a bone of contention between Nuclear-Weapon and Non-Nuclear-Weapon States, with the latter brandishing the right of withdrawal as a threat in the face of the perceived sluggishness of the nuclear disarmament process of the former.

## 5.2 The risk of a 'proliferation cascade'

The weakening of the NPT as a global security instrument might be of disastrous impact on many countries in Asia. In particular, the risk of a domino's effect – or a 'proliferation cascade' – in North East Asia has been envisaged by many studies and reports in regional and in western literature. To sum up the argument, a nuclear capable North Korea would lead its closest neighbors, the ROK, Japan, and Taiwan, to launch nuclear military programmes despite their historic reluctance in order to create minimum deterrent capabilities against possible conventional acts of aggression by Pyongyang. Such launches would produce a domino's effect in South East Asia (Vietnam, Indonesia, etc.). The stability of the whole region would eventually be at risk. In the best of cases, countries of the region would envisage to reach a nuclear threshold which would be almost as destabilizing as a nuclear arms race.

As an introduction to a chapter on strategic issues in South Korea, Executive Director of IISS-Americas Mark Fitzpatrick wrote in February 2016: 'If a new nuclear-armed state were to emerge in Northeast Asia, it would most likely be the Republic of Korea (ROK).'<sup>44</sup> But even if a majority of the general public in South Korea would favor the launch of a national nuclear-defense programme according to recent polls<sup>45</sup>, no government in Seoul have ever endorsed the pro-nuclear arguments. It is worth recalling though that a secret nuclear defense programme was initiated in the 1970's in South Korea. Besides, the ROK has recently advocated its own right to enrichment and to reprocessing under their 1.2.3. nuclear agreement with the US. Under certain conditions, which are not in place today, South Korea could move towards a recessed weapons capability in the future.

As to Japan, the country could have access to nuclear weapons promptly if a political decision to go nuclear was taken. After two decades of nuclear debates in the country and between Japan and the US, Japanese prime ministers have all adhered to restrictive non-nuclear policies since 1971. The basis is the 'Three Non-Nuclear Principles' endorsed by a Diet resolution in 1971, and regularly confirmed since then. They prohibit Japan from manufacturing, possessing or permitting the entry of nuclear weapons into the country, or its airspace or territorial waters. Although legally non-binding, the Three Non-Nuclear Principles are perceived

<sup>43</sup> For instance, France put forward suggestions in the spring of 2004 on the consequences of withdrawal. It supported the ideas set out in a paper proposed by the United States and Russia. The EU published a detailed working document on the topic during the 2007 Preparatory Committee for the 2010 NPT Review Conference.

<sup>44</sup> Mark Fitzpatrick, *Asia's Latent Nuclear Powers: Japan, South Korea and Taiwan*, Adelphi Paper No.455, IISS, February 2016, pp.17.

<sup>45</sup> Two-thirds of those surveyed according to Jiyeon Kim, *The Fallout: South Korean Public Opinion Following North Korea's Third Nuclear Test*, Asan Institute for Policy Studies, 24 February 2013.

as a morally binding norm at all levels of Japan society. Doubts have been raised by some about the national path towards 'normality' in the country's defense policy recently. To date, the nuclear taboo remains firm among the public as well as within the political elite and the scientific community. That being said, Japan as South Korea could move towards a recessed weapons capability in the future under certain conditions.

Taiwan's nuclear non-proliferation status is not to be reversed either in the foreseeable future, at least because of the nuclear military policy of North Korea. As Japan and South Korea, Taiwan is meant to have the technical and financial capabilities to become a latent nuclear power. Like Japan and South Korea, Taiwan thought about launching a nuclear military programme in the past but its nuclear ambitions have not come back recently. On the contrary, Taiwan officials have endorsed in the beginning of the century a categorical non-nuclear policy, expressed in defence White Papers as 'five noes' – not to possess, develop, acquire, store or use nuclear weapons. In any case, aiming at a nuclear latency in the future would be driven by a sense of protection against a threat from the mainland rather than from the DPRK.

A regional notion, the mechanical effect of a 'proliferation cascade' has never been demonstrated on the ground either in the Middle East or in East Asia. As contemporary history shows, the decision of a State to emerge as a nuclear-armed national actor can only be one factor among others leading other States to launch nuclear-defense programmes. Other factors range from financial, scientific, industrial and human resources capabilities to geostrategic isolation and the political willingness of a political regime to oppose the international community over the long term (economic embargoes, diplomatic isolation, etc.). For the time-being, a nuclear proliferation cascade in North East Asia can be considered more a theoretical risk than a real threat.

### 5.3 From non-proliferation to counter-proliferation

Counter-proliferation strategy and policies against the DPRK have appeared in the US toolbox against Pyongyang in the beginning of the century, with the launch of the Proliferation Security Initiative (PSI) by the George W. Bush administration in Spring 2003.<sup>46</sup> Interdiction policies have become the civil facet of counter-proliferation policies since then.<sup>47</sup> The success of the PSI mechanism has been challenged. It is difficult to assess specifically using open sources. The UN Panel of Experts report in June 2013 cited two seizures of North Korean items: missile-related in 2012, and weapons-related in 2010, destined for Damascus, Syria.

While the efforts of the international community have not managed to hamper Pyongyang's ballistic and nuclear ambitions to date, Japan, South Korea, and the United States are focusing on the deployment of their missile-defence systems. When Pyongyang announced on the 4<sup>th</sup> April 2014 that preparations were underway for a new nuclear test, U.S. Defence Secretary Chuck Hagel responded by deploying two missile-defence destroyers off the Japanese coast. For its part, Tokyo has stated its readiness to shoot down any North Korean ballistic missile that poses a threat to its territory.

The debate over missile-defence systems in North East Asia as a way to face the ballistic and nuclear threats from North Korea has intensified recently in the ROK. Whereas current ROK President Park came into office in 2013 with the will to improve Sino-South Korean relations, it seems that North Korea's fourth nuclear test in January 2016 was a turning point in Sino-South Korean relations. South Korea decided to deploy the US-built Terminal High-Altitude Area Defense (THAAD) missiles and China responded very sharply. China's

<sup>46</sup> President George W. Bush announced the Proliferation Security Initiative (PSI) on May 31 in Krakow, Poland. See Appendix No.5.

<sup>47</sup> The PSI is a mechanism the aim of which is to interdict the transport of nuclear, chemical, and biological weapons, delivery mechanisms, and related components. It is based on bilateral agreements between States, combines the use of existing national and international legal authorities with better intelligence sharing and multilateral coordination

ambassador to South Korea Qiu Guohong stated that South Korea's deployment of THAAD missiles would 'destroy Sino-South Korean relations in an instant.'<sup>48</sup> Nevertheless, South Korea announced on 9 June a final decision to deploy THAAD missiles to counter the increasing North Korean nuclear missile threat.

## 5.4 Risks and opportunities

The development of counter-proliferation solutions against North Korean military threats could reshape the future of the crisis in the Peninsula.

According to commentator Georgy Tolorya on 20 October 2016, 'several countries fear that a continued unchecked increase in Pyongyang's nuclear and missile capabilities will trigger countermeasures, such as the recently announced plan to deploy the THAAD system in South Korea. Such developments—particularly those that increase US military capabilities in the region—will prompt military reactions by China and Russia, initiating a spiraling arms race in Northeast Asia that could spread globally.'<sup>49</sup>

The destabilizing aspect of ballistic missile defense (BMD) developments in the North-East Asian region has made the nuclear and ballistic crisis in the Korean peninsula even more complicated. The determination of the current South Korean government to proceed with the deployment of the THAAD system on its territory seems to be very strong since North Korea conducted its fifth nuclear test on September 2016. Interestingly, US Forces Commander in Korea General Vincent Brooks declared on November 2016 after a meeting with Korean Defense minister Han Min-koo 'I do not expect any delay [in the development of the THAAD system in the RoK] (...). You're going to see the deployment of a Terminal High Altitude Area Defense (THAAD) battery. This is an alliance decision. It will come in the next eight to 10 months,' he added<sup>50</sup>. Naturally, the THAAD system now appears like a new bargaining chip in potential future negotiations involving North Korea and/or China.

A THAAD deployment in South Korea in 2017 would be a reason of concern for China for four main reasons:

First, Chinese analysts do not believe that the deployment of the THAAD is conceived against the North Korean missile threat because they claim it would be useless then. According to them, THAAD would be neither necessary nor effective because low altitude missiles are much more likely to be used by the North against the South given the short distance between the two countries.

Second, the Raytheon's terminal-mode AN/TPY-2 X-band radar leads the THAAD ballistic missile defence system by guiding the THAAD missile to intercept a target. For Chinese analysts, this radar will operate as a video surveillance camera which will jeopardize Chinese national security interests. The deployment of the AN/TPY-2 radar in South Korea is perceived as a means of monitoring Chinese military movements.

Third, the THAAD in South Korea would be part of the global American missile defence system, which would go 'against Beijing's regional military strategy of trying to minimise American influence in Asia'<sup>51</sup>.

Fourth, THAAD deployment would imply a *de facto* reduction of the buffer zone between US and Chinese forces which has been in place since 1953.

Naturally, given the large amount of trade between China and the ROK<sup>52</sup>, economic relations between the two countries could be a casualty if the deployment of THAAD in the region (ROK then Japan) is not accompanied by a sustained strategic dialogue between the US, the US allies, and China. Another obvious casualty would be the regional cohesion against the DPRK WMD programmes' development.

<sup>48</sup> Quote by Benjamin Lee, THAAD and the Sino-South Korean Strategic Dilemma, The Diplomat, 7 October 2016.

<sup>49</sup> Georgy Tolorya, Byungjin vs the Sanctions Regime: Which Works Better?, 38 North, 20 October 2016.

<sup>50</sup> THAAD will be deployed in 8-10 months: USFK commander, The Korea Times, 4 November 2016

<sup>51</sup> Kun Min Tayler Lee, 'THAAD: Missile defense or diplomatic challenge?', Culture Mandala: Bulletin of the Centre for East-west Cultural and Economic Studies, Vol.12, NO.1, September-December 2016, pp.50-57

<sup>52</sup> See 5.2. The role of China

As far as the international fight against the proliferation of WMD is concerned, the North Korean crisis, *inter alia*, has introduced counter-proliferation thinking in the multilateral fora devoted to non-proliferation since the beginning of the century, urging the international community to find effective solutions. 'Effective multilateralism' became the cornerstone of the EU non-proliferation strategy adopted in December 2003. The UNSC resolution 1540 was adopted in Spring 2004 with the purpose of closing the loopholes in the national frameworks against proliferation of WMD worldwide. Many counter-proliferation initiatives were born in the beginning of the century in the wake of the PSI, such as the Global Initiative to Combat Nuclear Terrorism (GICNT) for instance, adopted on July 2006. Counter-proliferation approaches have gradually shaped the international security debates even if the military dimension of these approaches, notably the BMD systems, is still a controversial issue.

## 6 The strategic dimension of the North Korean crisis

The ballistic and nuclear crises in the Korean peninsula are to be considered a proliferation and a security issue at regional and global levels. The crises have also taken on a strategic dimension due to the involvement of three regional stakeholders being global actors and adversaries at the same time: the US, China, and to a lesser extent Russia.

### 6.1 The US extended deterrence issue in North East Asia

#### 6.1.1 The US reaffirmed position

Whatever the perceptions of analysts and observers of the strategic debates in Seoul in response to the recent acceleration of the North Korean WMD programmes and the multiple provocations of the regime, US extended deterrence is key to ensuring that South Korea, as Japan, forgoes nuclear arms today and in the future.

Recent polls show that the South Koreans' confidence in the military alliance with the US is still very high. Still, questions have been raised for some years about the credibility of the US extended deterrence guarantees.

Several elements can be argued in favor of the US strategic commitments towards South Korea: First, the presence of 28,500 US forces personnel in the country can be said a tangible sign of the American commitment. Second, the rebalancing to Asia's policy of the Obama's administration demonstrates a sustained commitment to the alliance with the ROK as with Japan. Third, the security dialogue between the two countries has been strengthened since the beginning of the current decade. As an illustration of it, the 'Joint Vision for the Alliance' statement released in June 2009 by presidents Obama and Lee recalled that 'the United States-Republic of Korea Mutual Defense Treaty remains the cornerstone of the U.S.-ROK security relationship, which has guaranteed peace and stability on the Korean Peninsula and in Northeast Asia for over fifty years'. The statement also asserted that 'the Alliance is adapting to changes in the 21st Century security environment. We will maintain a robust defense posture, backed by allied capabilities which support both nations' security interests. The continuing commitment of extended deterrence, including the U.S. nuclear umbrella, reinforces this assurance.'<sup>53</sup> Lastly, a few days after the fifth nuclear test by North Korea on September 2016, two nuclear-capable B-1B bombers were sent over South Korea in a display of military power.<sup>54</sup>

The US and the ROK agreed 19 October 2016 in Washington to launch a high-level dialogue to discuss how to carry out the U.S. 'extended deterrence' protection of its ally from nuclear and missile threats from North Korea. The agreement to establish the 'Extended Deterrence Strategy and Consultation Group' was reached in 'two plus two' alliance talks that brought together South Korean Foreign Minister Yun Byung-

<sup>53</sup> Joint vision for the alliance of the United States of America and the Republic of Korea, The White House, June 16, 2009.

<sup>54</sup> Edward Hunt, North Korea's nuclear ticket to survival, The Wire, 3 November 2016.

se and Defense Minister Han Min-koo, and their U.S. counterparts, Secretary of State John Kerry and Defense Secretary Ash Carter. According to Foreign Minister Yun, South Korea and the US will 'institutionalize the extended deterrence doctrine, which is at the heart of the U.S. commitment to the defence of South Korea.'<sup>55</sup> Secretary of State John Kerry and Defence Secretary Ash Carter 'reaffirmed that the U.S. will defend South Korea from any and all North Korean threats through extended deterrence, encompassing all parameters of defence capabilities, including nuclear umbrella, conventional, and missile defence. (...) They also made it loud and clear that Pyongyang will be met with effective and overwhelming responses should it resort to nuclear weapons.'<sup>56</sup>

The 'two plus two' alliance talks between South Korea and the US may be an interesting milestone in the handling of the North Korean crisis by the US. Further meetings between the two countries could include discussions on bringing in U.S. strategic assets to South Korea, such as nuclear-capable B-52 and B-1B bombers, F-22 stealth fighter jets and nuclear-powered, cruise-missile submarines. Permanent deployment of such military hardware on the territory of South Korea would be a step forward in the extended deterrence posture of the US in North East Asia since the withdrawal of American nuclear weapons from South Korea in the beginning of the 1990's.

Whereas the North East Asia policy of the US under a Hillary Clinton administration were very precisely described by the Democrat candidate during the campaign<sup>57</sup>, Donald Trump as a candidate made many contradictory declarations, ranging from direct engagement with the DPRK regime to the direct responsibility of China in the resolution of the crisis. According to many American observers, it is too early to say what will President's Trump policy towards North Korea be.

### 6.1.2 The South Korean 'dilemma'

The tightening of the US-ROK alliance, whereas desired by the majority of the Korean population has become a matter of caution for President Park Geun-hye who came into office in 2013 with the ambition of renewing Sino-South Korean relations.

It is an established fact that South Korean economic dependence on China has recently increased to the point that since 2010, the total size of Sino-South Korean bilateral trade has surpassed the size of trade between South Korea and Japan and the US combined. The ratification of the China-Korea Free Trade Agreement in 2015 increased the economic integration of the two countries, which can also prove an economic dependence in the future.

A sort of dilemma could be perceived in South Korea based on the country's increasing dependence on the US for its security and on China for its economy, leading Seoul to possible conflicts of interest in the future. Even if this dilemma may appear theoretical, it could lead future South Korea governments to endorse balanced policies towards China and thus, indirectly, towards North Korea.

## 6.2 The role of China

China is an historical ally of North Korea with which it shares an 870-mile border. Its support dates back to the Korean War (1950-1953). It is generally estimated that 70 to 80 percent of all the foreign assistance provided to the DPRK comes from China. China is responsible for approximately 76% of North Korea's total trade volume<sup>58</sup>. Besides, the total volume of the bilateral trade has significantly increased since the start of

<sup>55</sup> Quoted by Kelsey Davenport, UN struggles over North Korea's actions, Arms Control Today, November 2016.

<sup>56</sup> Ibid.

<sup>57</sup> In 26 September 2016, presidential debate with Donald Trump Clinton emphasized that she wanted 'to reassure our allies in Japan and South Korea... that we have mutual defense treaties and we will honor them.'

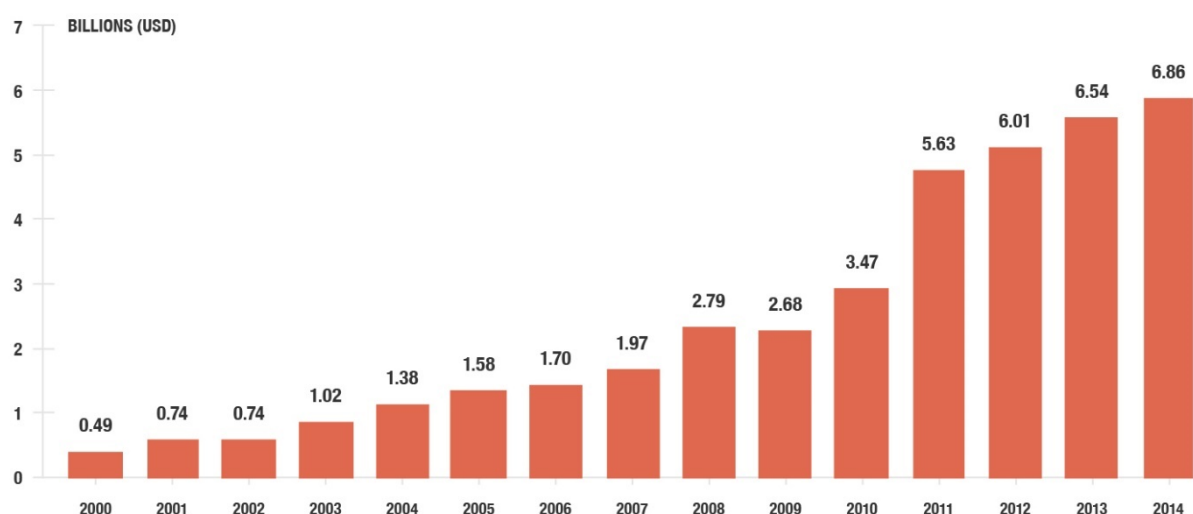
<sup>58</sup> See Appendix No.4: North Korean trade in recent years.

the current nuclear crisis: from about \$500 million in 2000 to nearly \$7 billion in 2014 according to the Seoul-based Korea Trade-Investment Promotion Agency.

North Korea's fast development of its nuclear and ballistic programmes are generally perceived as an evidence that China has not fully used its economic leverage over North Korea to restrain its nuclear ambitions and to moderate its behavior. The role of China, and to a lesser extent the role of Russia in the North Korean proliferation crisis has been much debated.

To some, China's influence over its ally in the north of the Peninsula is such that Chinese responsibility in the nuclear and ballistic crisis is paramount and its economic leverage on North Korea is the decisive factor for the future of the crisis, which is correct. To others, 'North Korea is not China's proxy state and has the capability to independently make decision that can harm Chinese interests.'<sup>59</sup> China has traditionally been reluctant to use economic pressure on Pyongyang but it does not imply that China supports North Korea's nuclear policy. The official Chinese stance over the crisis is based upon three main ideas: a denuclearized, peaceful and stable Korean Peninsula as a final goal, the return of North Korea to the six-party talks or the continuation of the multilateral negotiation process whatever the format as the primary method.

### CHINA–NORTH KOREA TRADE VOLUME



Source: Korea Trade-Investment Promotion Agency (KOTRA)

Credits: Eleanor Albert, Julia Ro

COUNCIL ON  
FOREIGN  
RELATIONS

As generally agreed among experts, the primary interests of China towards the North Korean crisis are: the stability of the Peninsula, the avoidance of war, the strategic rivalry with the US.

The slow but real strengthening of the international sanctions regime against North Korea indicates that China has become less tolerant vis-à-vis North Korea and more supportive of western-led sanctions within the UNSC. The nuclear stability which North Korea is looking for does not fit with the Chinese interests and perception of stability in the Peninsula. But as stated by a recent report by the US Congressional Research Service, 'despite this apparent cooling in relations, Beijing remains an obstacle to many U.S. policy goals.'<sup>60</sup> A pending question is China's position in the UNSC current debate over a tightened sanction resolution against Pyongyang since September 2016.

<sup>59</sup> Benjamin Lee, THAAD and the Sino-South Korean Strategic Dilemma, *The Diplomat*, 7 October 2016.

<sup>60</sup> Emma Chanlett-Avery (coordinator), Ian E. Rinehart, Mary Beth D. Nikitin, North Korea: U.S. Relations, Nuclear Diplomacy, and Internal Situation, Coordinator Specialist in Asian Affairs, Congressional Research service (CRS), 15 January 2016.

Like South Korea, China may face an increasing dilemma over time: either it decides to tighten the sanctions against Pyongyang, taking the risk of a more antagonistic North Korea, a regime collapse and a refugee crisis that would destabilize China's northeastern region as well as the perspective of a reunification of the peninsula under South Korea/US conditions. Or it refuses to impose harsher sanctions against the North's regime, ending the nascent partnership with South Korea and encouraging what China perceives as an American containment strategy against China in the region.

## 6.3 The strategic impacts for the EU

As to the EU, the strategic impact of nuclear proliferation in North East Asia, particularly the recent worsening of the DPRK nuclear and ballistic crises are twofold:

First, the continuous erosion of the nonproliferation norm by a Non-Nuclear Weapon State under the NPT has been weakening the authority of the NPT as an international security instrument while upgrading the value of extended deterrence as a nonproliferation tool. This is impacting the 'effective multilateralism' as the cornerstone of the EU approach towards nonproliferation and disarmament affairs. For the broad interest of the EU, the DPRK must never become a *de jure* Nuclear Weapon State.

Second, the growing number of ballistic fire-tests and the development of ICBMs by the DPRK is posing a direct threat to the vital interests of the Member States of the EU.

Conversely, it must be acknowledged that the EU is not perceived in the ROK as a possible main actor in the peninsula towards the DPRK crisis and the nonproliferation policy of the EU is unknown. Besides, governance uncertainty in the ROK and the future of US policies towards Pyongyang are focusing the attention of regional analysts.

Against this backdrop, it is recommended the following ideas and actions:

- to promote the EU non-proliferation approaches in the RoK through targeted track 1.5 seminars;
- to use the EU political leverage worldwide in order to raise awareness about the DPRK proliferation crisis and the necessity to comply with UNSC resolutions in force;
- to assess independently the failure of the Six Party talks in order to draw lessons for a renewed diplomatic approach to the crisis;
- to promote a dual track approach based on effective containment of the DPRK regime.

## 7 Conclusion

Tensions have risen dramatically in the Korean peninsula since the beginning of the current decade. In this context, the resumption of the six-party talks remains very hypothetical. It is clearly dependent on a change of attitude on Pyongyang's part which is hardly predictable.

The North Korean leader Kim Jong Un has been consolidating his leadership over the regime and the economy is being stabilized. Against that backdrop, a regime's collapse scenario seems to be unlikely to happen anytime soon.

There is little doubt that the short-term response of the international community will be a strengthening of the sanctions regime whatever the specifics.

Even if 'strategic patience' towards North Korea has been very much challenged and criticized for some time, it may be that there is no better alternative to this policy. The United States are not prepared to attack the North's nuclear and missile facilities even if « all the options » have been on the table according to American officials. That being said, the United States are not ready to accept a nuclear North Korea. Resuming multilateral negotiations is a hypothetical option since the international community has no clear

leverage at the moment. Resuming the six-party talks in these particular circumstances could bear the risk of strengthening Pyongyang's position while acclimating the international community to its nuclear status.

Comprehensively conceived, 'strategic patience' should be understood as a strong policy of containment and management of the North Korean nuclear crisis in order to make possible the return of Pyongyang to negotiations.

Whatever the future direction of the US policy towards North Korea, there is an imperative need for a comprehensive policy review after the November 2016 presidential election in Washington.

A complement to the strengthening of the multilateral sanctions against the ballistic and nuclear programmes of the North would be to reconsider the nuclear and ballistic issues as factors among others within the Peninsula crisis, as indicated in the introduction of this report. In that regard, a comprehensive engagement and a greater regional coordination on both the strategic and non-strategic factors of the North Korean crisis could prove effective within a step by step approach.

As a subsidiary issue, it could be asked whether there could be a new role for the EU to play as regards to nuclear and ballistic proliferation in North East Asia.

Theoretically speaking, the EU could have the opportunity to appear as a new actor to help solve strategic issues in the Peninsula if the current deadlock with Pyongyang was to continue. This idea was called upon in the beginning of the century. As Finnish Under Secretary of State Ambassador Jaakko Laajava stated in 2004, 'Northeast Asia, particularly the Korean peninsula, is a good example of a region where the European Union could be an active partner and catalyst for peaceful regional development'<sup>61</sup>. The limited scope of European interests in the Peninsula, the historical distance of the European Union in the Northeast Asian disputes, and its willingness to become a global actor on nonproliferation matters make it a possible stakeholder of a renewed diplomatic process based on a dual track approach.

<sup>61</sup> « The European Northeast Asian policy – partnership in strengthening security and stability », Institute of Foreign Affairs and National Security (IFANS), Seoul, Republic of Korea, March 30, 2004.

## APPENDICES

### Appendix No.1: Brief chronology of the North Korean nuclear and ballistic proliferation crises (1985 – 2016)

 Nuclear tests

 Ballistic tests

**12 December 1985:** North Korea accedes to the nuclear Nonproliferation Treaty (NPT).

**27 September 1991:** US President George Bush announces the withdrawal of all tactical nuclear weapons deployed abroad.

**31 December 1991:** Signature of the South-North Joint Declaration on the Denuclearization of the Korean Peninsula.

**9 April 1992:** North Korea ratifies its safeguards agreement with the IAEA (7 years after adopting the NPT).

**12 March 1993:** North Korea announces its intention to withdraw from the NPT, citing Article X provisions of the Treaty (withdrawal clause).

**21 October 1994:** The United States and North Korea adopt the 'Agreed Framework' in Geneva. The agreement calls for North Korea to freeze and eventually eliminate its nuclear facilities, North Korea allows the IAEA to verify compliance through 'special inspections'. In exchange, Pyongyang will receive two LWRs and annual shipments of heavy fuel oil during construction of the reactors. The LWRs will be financed and constructed through a multinational consortium: the Korean Peninsula Energy Development Organization (KEDO).

**25 February 1998:** South Korean President Kim Dae-jung announces his 'sunshine policy,' (peace, reconciliation, and cooperation between the two Koreas).

**4 October 2002:** The North Koreans acknowledge that the regime has been pursuing a uranium-enrichment program.

**9 December 2002:** Spanish and U.S. naval forces intercept a ship carrying a shipment of North Korean Scud missiles to Yemen.

**27 December 2002:** North Korea orders IAEA inspectors out of the country.

**10 January 2003:** North Korea announces its withdrawal from the NPT.

**31 May 2003:** Launch of the Proliferation Security Initiative (PSI) by the USA.

**August 2003:** Launch of the first round of six-party talks in Beijing.

**19 September 2005:** The participants in the six-party talks conclude a joint statement of principles to guide future negotiations.

**4 July 2006:** North Korea launches one long-range Taepodong-2 missile and four smaller-range missiles (at least).

**15 July 2006:** The UNSC adopts Resolution 1695 (condemns North Korea's missile launches).

**9 October 2006:** North Korea conducts its first underground nuclear test.

**14 October 2006:** The UNSC adopts Resolution 1718.

**February 2007:** The six-party talks concludes an 'action plan' to implement the 19 September 2005 joint statement on North Korea's denuclearization.

**5 April 2009:** Kwangmyongsong-2 satellite launched with three-stage Teapodong-2 delivery vehicle.

**25 May 2009:** North Korea conducts its second underground nuclear test.

**25 May 2009:** North Korea test-fires three short range (130 km) surface to air missiles (after the nuclear test)

**12 June 2009:** The UNSC adopts Resolution 1874.

**17 March 2010:** According to South Korea Defense minister KIM Tae-young, the DPRK has increased its missile capacity from 800 in 2008 to over 1000 as of March 2010.

**26 March 2010:** The South Korean patrol ship Cheonan is sunk the North (North Korea denies).

**8 June 2011:** North Korea launches a KN-06 Surface-to-Air missile (SAM) from west coast of the country (first such test since 2009)

**29 December 2011:** Kim Jong Un officially North Korea's new leader.

**29 February 2012:** The United States and North Korea announce a 'leap day' agreement

**12 December 12 2012:** North Korea launches the Unha-3.

**January 22, 2013:** The NSC adopts Resolution 2087

**12 February 2013:** North Korea conducts its third underground nuclear test.

**7 March 2013:** The UNSC adopts Resolution 2094.

**6 January 2016:** North Korea conducts its fourth underground nuclear test

**2 March 2016:** The UNSC adopts Resolution 2270.

**9 June 2016:** South Korea announces that it has decided to deploy THAAD missiles to counter the increasing North Korean nuclear missile threat.

**Summer 2016:** multiplication of ballistic missiles tests

**24 August 2016:** North Korea conducts what seems to be a successful test of a Bukkeukseong-1 (Polaris-1, KN-11) submarine-launched ballistic missile (SLBM). The missile was launched from GORAE-class experimental ballistic missile submarine. It reportedly flew approximately 500 km before impacting the East Sea. This was the third test of the KN-11 in 2016.

**5 September 2016:** North Korea launches three ballistic missiles, presuming to be intermediate-range (U.S. Strategic Command).

**9 September 2016:** North Korea conducts its fifth nuclear test.

## Appendix No.2: Summary of the 2016 Report of the Panel of Experts established pursuant to resolution 1874 (2009)<sup>62</sup>

'A decade since the Democratic People's Republic of Korea conducted its first nuclear test and since the adoption of the resulting United Nations sanctions regime, the Panel has found no indications that the country intends to abandon its nuclear and ballistic missile programmes. To the contrary, the country recently conducted its fourth nuclear test and is also proceeding with its prohibited ballistic missile development, including the test of a submarine-launched ballistic missile and continued ballistic missile launches. Given the stated intentions of the Democratic People's Republic of Korea and its continued efforts to enhance the scope of its nuclear and missile programmes and to seek international acceptance and legitimacy for these prohibited programmes, there are serious questions about the efficacy of the current United Nations sanctions regime.

The Panel's investigations have shown that the Democratic People's Republic of Korea has been effective in evading sanctions and continues to use the international financial system, airlines and container shipping routes to trade in prohibited items. Designated entities conceal their illicit activities by embedding agents in foreign companies. They use diplomatic personnel, long-standing trade partners and relationships with a small number of trusted foreign nationals. Its designation in July 2014 notwithstanding, Ocean Maritime Management Company, Limited continues to operate through foreign-flagged vessels, name and company reregistrations and the rental of crews to foreign ships. This enables it to obtain access to foreign ports in the region and beyond, as well as maritime insurance, a prerequisite for operation.

The country has continued to engage in the export of ballistic missile-related items to the Middle East and trade in arms and related materiel to Africa. It continues to exploit long-standing military relationships in Africa and Asia to provide training for police and paramilitary units. New trends include the acquisition of foreign-sourced high-end commercial products as well as rudimentary systems to strengthen its capability to indigenously develop its prohibited programmes. The country is also using its participation in international organizations in an effort to legitimize its space launch programme and gain access to scientific networks and knowledge.

All these activities are facilitated by the low level of implementation of Security Council resolutions by Member States. The Panel has consistently highlighted the problems of non-implementation of the resolutions, which allows prohibited activity to continue. The reasons are diverse, but include lack of political will, inadequate enabling legislation, lack of understanding of the resolutions and low prioritization.

The Panel has recommended several designations in the light of the involvement of individuals and entities in prohibited activities or sanctions evasion. It has also suggested updates to the sanctions list. The Panel's report and its conclusions raise important questions about the overall efficacy of the United Nations sanctions regime, which, its progressive tightening over 10 years notwithstanding, has still failed to ensure that the Democratic People's Republic of Korea abandons its nuclear and ballistic missile programmes.'

<sup>62</sup> 24 February 2016, [http://www.un.org/ga/search/view\\_doc.asp?symbol=S/2016/157](http://www.un.org/ga/search/view_doc.asp?symbol=S/2016/157)

## Appendix No.3: Overview of the main North Korean ballistic and cruise missiles<sup>63</sup>

### **KN-02 and KN-02 ER**

Tactical short-range ballistic missile (SRBM).

Frequently tested, possibly deployed.

Estimated range of 100 to 120 km.

Solid-fueled, mobile, accurate, truck-mounted missile capable of carrying a variety of warheads, possibly including submunitions and chemical warheads. The most accurate in North Korea's arsenal. In 2015, North Korea conducted several extended-range KN-02, or KN-02 ER, rocket tests, which could have an estimated range of 170 km. Around one hundred in service.

### **KN-09**

Antiship cruise missile

First tested in February 2015. Possibly deployed.

Close to Russian Kh-35 anti-ship cruise missile. The original Russian model entered service in 1983 (maximum range of 130km with a 145 kg warhead). North Korea could have modified the original Kh-35 designs to improve it. Ships equipped with advanced Aegis missile defense systems may be able to successfully defend against this missile.

### **Hwasong 5 and 6 (Scud) Missiles**

Variants of Soviet Scud –B and –C ballistic missiles

Road-mobile, liquid-fueled SRBMs

Tested, deployed, widely exported

Over 600 Hwasong missiles could have been deployed.

Hwasong-5 estimated range of about 300 km (with payload of approximately 1,000 kg)

Hwasong-6 estimated range of about 500 to 600 km (with payload of 700-750 kg)

Capable of carrying high explosives, submunitions, or chemical warheads, but poor accuracy. Miniaturized nuclear warheads could possibly be mounted on.

### **Nodong**

Single-stage liquid-fueled medium-range ballistic missile (MRBM) with a range of 1,000-1,600 km (Japan potential target).

Often tested, 200 deployed.

Poor accuracy.

Exported. Iran's Shahab-3 and Pakistan's Ghauri-II missiles might be based on its design. 'Some analysts believe that North Korea's third nuclear test in February 2013 may have demonstrated its ability to miniaturize a nuclear weapon to fit atop a Nodong missile or that North Korea is nearing such a capability.

<sup>63</sup> Based on Matthew McGrath and Daniel Wertz, North Korea Ballistic Missile Program, Issue Brief, The National Committee on North Korea, August 2015; resources from '38 North', and 'Arms Control Wonk'.

In addition, several Nodongs tested in November 2014 were reportedly fired at a higher launch angle, which would enable them to better evade missile defense systems in South Korea.<sup>64</sup>

### **Musudan**

Single-stage liquid-fueled intermediate-range ballistic missile (IRBM).

Estimated range of between 2,500 and 4,000 km.

Recently tested (7 times in 2016), possibly deployed.

Publicly displayed in military parades in 2007 and 2010.

According to unconfirmed reports, North Korea could have sold Iran several Musudan missile kits.

### **KN-11 (Bukgeukseong-1, Polaris-1)**

Submarine-launched ballistic missile

Partially tested (first tested components in 2015), not deployed.

Dimensions similar to those of the R-27 or SS-N-6 sea-launched ballistic missiles developed by the Soviet Union in the 1960s. However, it is not certain whether the KN-11 is based on the R-27.

‘Before the KN-11 could become operational, North Korea would likely need to refine its ejection system, test its accuracy and reliability, and ensure the system is seaworthy. It is unclear which submarine North Korea might use to deploy an SLBM system.’<sup>65</sup>

### **Taepodong-1 (Paektusan-1)**

Two-stage liquid-fueled MRBM

Estimated range of 1,500-2,500 km.

Modified to be a space launch vehicle (SLV)

Tested in August 1998.

‘Some sources suggest that the DPRK has deployed 10 Taepodong-1 missiles. However, other analysts believe that the Taepodong-1 is ‘a transitory product for the development of the Taepodong-2.’ Such analysts think it is unlikely that the Taepodong-1 has been deployed at all, since it does not offer significant strategic advantages over the Nodong missile.’<sup>66</sup>

### **Taepodong-2 (Unha-2, Unha-3, Unha-9)**

Two or three-stage liquid-fueled ballistic missile, believed to be an intercontinental ballistic missile (ICBM).

First tested in 2006 (modified to be an Unha space launch vehicle).

Estimates of Taepodong’s range difficult to confirm.

Most recent test of the Unha rocket largely succeeded in placing a satellite into orbit.

Technical barriers may remain before the Taepodong-2 could be considered a fully-operational ICBM.

‘North Korea would need to develop a re-entry vehicle capable of returning a warhead from the atmosphere back to Earth. Overcoming these challenges and increasing the operational reliability of the

<sup>64</sup> Matthew McGrath and Daniel Wertz, North Korea Ballistic Missile Program, Issue Brief, The National Committee on North Korea, August 2015.

<sup>65</sup> Ibid.

<sup>66</sup> Ibid.

missile would require more flight tests. Additionally, the complex and time-consuming logistics of transporting this missile to a fixed launch site, erecting it, and fueling it may diminish its military utility during a conflict. The Unha-9 is a larger version of this system that has been put on display but not launched. This configuration is distinguishable due to a longer first stage and a slightly larger payload capacity.<sup>67</sup>

#### **KN-08**

First publicly displayed in April 2012

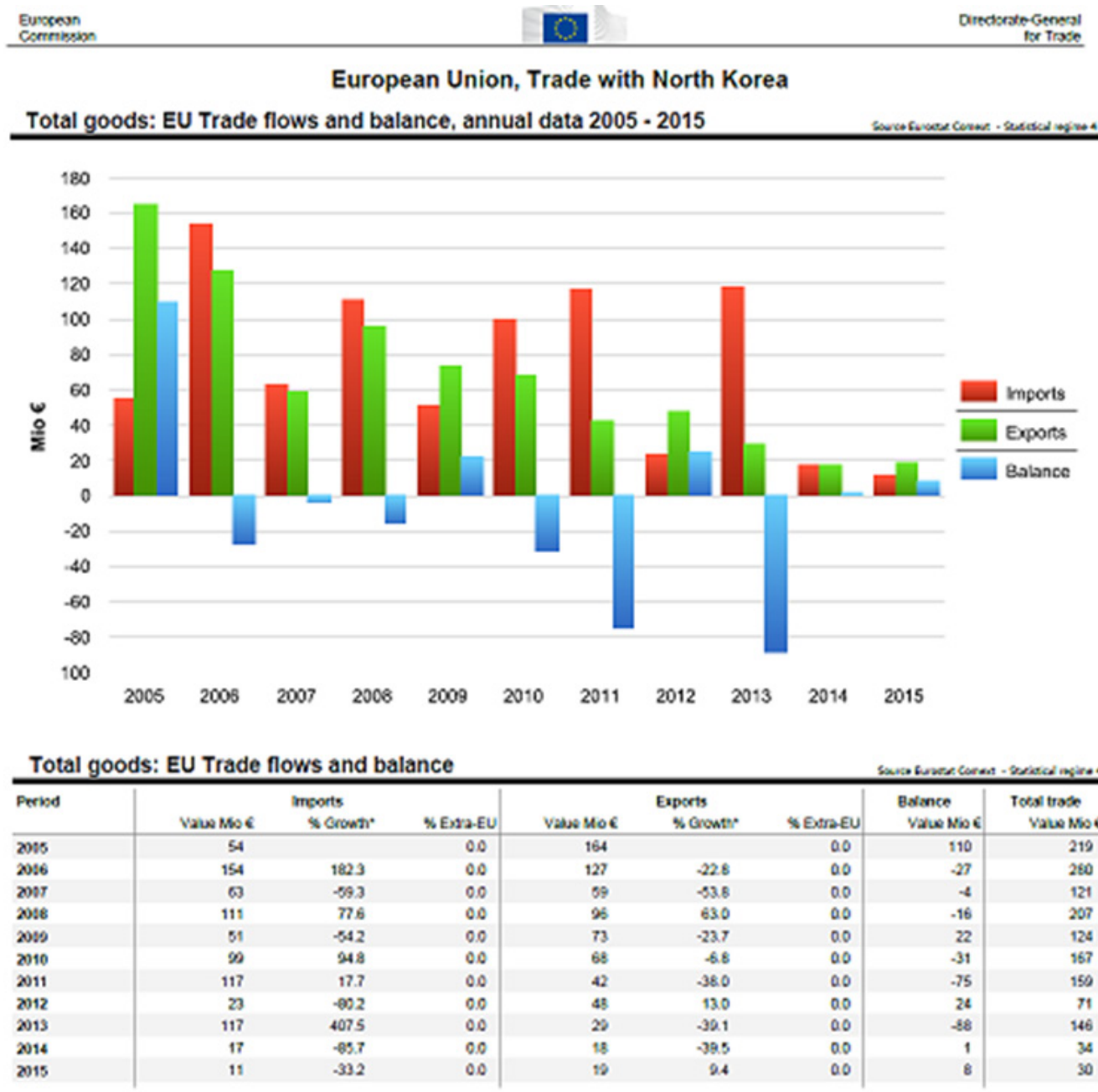
Not flight-tested (ground test activity recently for rocket motors), operational status unknown

Assessments by U.S. government official have been mixed so far.

<sup>67</sup> Ibid.

## Appendix No.4: North Korean trade in recent years

European Union, Trade with North Korea 2005 – 2015 (European Commission, Directorate-General for Trade, 21 June 2016)



## North Korea, Trade with the world, 2005 - 2015



## North Korea, Trade with World

## Total Goods: Trade flows and balance

Source IMF

Period	Imports		Exports		Balance		Total trade	
	Value Mio €	% Growth*	Value Mio €	% Growth*	Value Mio €	% Growth*	Value Mio €	% Growth*
2005	2,633		943		-1,690		3,577	
2006	2,874	9.2	1,212	28.5	-1,662	-1.6	4,087	14.3
2007	3,216	11.9	1,198	-1.2	-2,019	21.4	4,414	8.0
2008	3,442	7.0	1,338	11.7	-2,104	4.2	4,779	8.3
2009	2,532	-26.4	1,042	-22.1	-1,491	-29.1	3,574	-25.2
2010	3,225	27.4	1,625	56.0	-1,601	7.4	4,850	35.7
2011	3,292	2.1	2,523	55.3	-769	-52.0	5,815	19.9
2012	3,858	17.2	2,478	-1.8	-1,380	79.5	6,336	9.0
2013	3,920	1.6	2,630	6.2	-1,290	-6.6	6,550	3.4
2014	3,675	-6.3	2,491	-5.3	-1,184	-8.2	6,166	-5.9
2015	3,826	4.1	2,688	7.9	-1,138	-3.9	6,513	5.6

## Total Goods: Top trading partners 2015

Source IMF

Imports			Exports			Total trade		
Partner	Value Mio €	% World	Partner	Value Mio €	% World	Partner	Value Mio €	% World
World	3,826	100.0	World	2,688	100.0	World	6,513	100.0
1 China	2,921	76.4	1 China	2,035	75.7	1 China	4,957	76.1
2 Congo	209	5.5	2 India	93	3.5	2 India	202	3.1
3 Saudi Arabia	112	2.9	3 Saudi Arabia	89	3.3	3 Saudi Arabia	201	3.1
4 India	109	2.8	4 Myanmar	74	2.8	4 Myanmar	149	2.3
5 Russia	78	2.0	5 Ghana	42	1.6	5 Russia	83	1.3
6 Myanmar	75	2.0	6 Taiwan	24	0.9	6 Thailand	79	1.2
7 Thailand	73	1.9	7 Chile	21	0.8	7 Philippines	62	1.0
8 Philippines	53	1.4	8 Bangladesh	20	0.8	8 Ghana	43	0.7
9 Ukraine	33	0.9	9 Turkmenistan	16	0.6	9 Ukraine	35	0.5
10 Singapore	28	0.7	10 Brazil	14	0.5	10 Bangladesh	32	0.5
11 EU 28	21	0.6	20 EU 28	9	0.3	11 EU 28	30	0.5

World trade: excluding intra-region trade

Top partners: excluding region member states

% Growth: relative variation between current and previous period

## Appendix No.5: Proliferation Security Initiative: Statement of Interdiction Principles<sup>68</sup>

« The Proliferation Security Initiative (PSI) is a response to the growing challenge posed by the proliferation of weapons of mass destruction (WMD), their delivery systems, and related materials worldwide. The PSI builds on efforts by the international community to prevent proliferation of such items, including existing treaties and regimes. It is consistent with and a step in the implementation of the UN Security Council Presidential Statement of January 1992, which states that the proliferation of all WMD constitutes a threat to international peace and security, and underlines the need for member states of the UN to prevent proliferation. The PSI is also consistent with recent statements of the G8 and the European Union, establishing that more coherent and concerted efforts are needed to prevent the proliferation of WMD, their delivery systems, and related materials. PSI participants are deeply concerned about this threat and of the danger that these items could fall into the hands of terrorists, and are committed to working together to stop the flow of these items to and from states and non-state actors of proliferation concern.

The PSI seeks to involve in some capacity all states that have a stake in nonproliferation and the ability and willingness to take steps to stop the flow of such items at sea, in the air, or on land. The PSI also seeks cooperation from any state whose vessels, flags, ports, territorial waters, airspace, or land might be used for proliferation purposes by states and non-state actors of proliferation concern. The increasingly aggressive efforts by proliferators to stand outside or to circumvent existing nonproliferation norms, and to profit from such trade, requires new and stronger actions by the international community. We look forward to working with all concerned states on measures they are able and willing to take in support of the PSI, as outlined in the following set of 'Interdiction Principles.'

### **Interdiction Principles for the Proliferation Security Initiative**

PSI participants are committed to the following interdiction principles to establish a more coordinated and effective basis through which to impede and stop shipments of WMD, delivery systems, and related materials flowing to and from states and non-state actors of proliferation concern, consistent with national legal authorities and relevant international law and frameworks, including the UN Security Council. They call on all states concerned with this threat to international peace and security to join in similarly committing to:

1. Undertake effective measures, either alone or in concert with other states, for interdicting the transfer or transport of WMD, their delivery systems, and related materials to and from states and non-state actors of proliferation concern. 'States or non-state actors of proliferation concern' generally refers to those countries or entities that the PSI participants involved establish should be subject to interdiction activities because they are engaged in proliferation through: (1) efforts to develop or acquire chemical, biological, or nuclear weapons and associated delivery systems; or (2) transfers (either selling, receiving, or facilitating) of WMD, their delivery systems, or related materials.
2. Adopt streamlined procedures for rapid exchange of relevant information concerning suspected proliferation activity, protecting the confidential character of classified information provided by other states as part of this initiative, dedicate appropriate resources and efforts to interdiction operations and capabilities, and maximize coordination among participants in interdiction efforts.
3. Review and work to strengthen their relevant national legal authorities where necessary to accomplish these objectives, and work to strengthen when necessary relevant international law and frameworks in appropriate ways to support these commitments.

<sup>68</sup> The White House, Office of the Press Secretary, Washington, DC, September 4, 2003.

4. Take specific actions in support of interdiction efforts regarding cargoes of WMD, their delivery systems, or related materials, to the extent their national legal authorities permit and consistent with their obligations under international law and frameworks, to include:
  - a. Not to transport or assist in the transport of any such cargoes to or from states or non-state actors of proliferation concern, and not to allow any persons subject to their jurisdiction to do so.
  - b. At their own initiative, or at the request and good cause shown by another state, to take action to board and search any vessel flying their flag in their internal waters or territorial seas, or areas beyond the territorial seas of any other state, that is reasonably suspected of transporting such cargoes to or from states or non-state actors of proliferation concern, and to seize such cargoes that are identified.
  - c. To seriously consider providing consent under the appropriate circumstances to the boarding and searching of its own flag vessels by other states, and to the seizure of such WMD-related cargoes in such vessels that may be identified by such states.
  - d. To take appropriate actions to (1) stop and/or search in their internal waters, territorial seas, or contiguous zones (when declared) vessels that are reasonably suspected of carrying such cargoes to or from states or non-state actors of proliferation concern and to seize such cargoes that are identified; and (2) to enforce conditions on vessels entering or leaving their ports, internal waters or territorial seas that are reasonably suspected of carrying such cargoes, such as requiring that such vessels be subject to boarding, search, and seizure of such cargoes prior to entry.
  - e. At their own initiative or upon the request and good cause shown by another state, to (a) require aircraft that are reasonably suspected of carrying such cargoes to or from states or non-state actors of proliferation concern and that are transiting their airspace to land for inspection and seize any such cargoes that are identified; and/or (b) deny aircraft reasonably suspected of carrying such cargoes transit rights through their airspace in advance of such flights.

If their ports, airfields, or other facilities are used as transshipment points for shipment of such cargoes to or from states or non-state actors of proliferation concern, to inspect vessels, aircraft, or other modes of transport reasonably suspected of carrying such cargoes, and to seize such cargoes that are identified. »

## Appendix No.6: Notes of the Second Draft Presentation to the SEDE

(Hearings by the European Parliament's Subcommittee on Security and Defence – SEDE -, Brussels, 10 November 2016, 9:30 – 11:00)

### Presentation by Benjamin Hautecouverture

Distinguished Members of Parliament,

Ladies and Gentlemen,

It is a real pleasure to be with you this morning and to have the opportunity to share with you some thoughts about what is maybe the more pressing international security issue related to nuclear proliferation at the moment.

I am Benjamin Hautecouverture, a senior research fellow at the Fondation pour la recherche stratégique in Paris, France.

I was asked by the DG for External Policies of the EU to introduce a report I prepared on nuclear proliferation in North East Asia for the Parliament.

I will first provide a summary of the main outcomes of my study. Then we will have plenty of time to exchange and to argue. Thanks to your comments I will finalize my report in a few days, with the hope that it will be useful to all of you.

The North Korean nuclear and ballistic crisis is a complex topic because it is an equation with many variables, some of them being unknown. The results of the presidential election in the United States somehow brings the latest unknown variable of the equation. I'll give some preliminary thoughts about it in my conclusion.

### **The DPRK nuclear and ballistic programmes: an assessment**

Before talking about the various efforts made to curb the DPRK nuclear and ballistic programmes so far I would like to insist on the state of these programmes. What do we know? What can be assessed?

One main idea to keep in mind: the nuclear and ballistic programmes of the DPRK have dangerously improved since the beginning of this decade.

As to the nuclear programme, the latest nuclear test was conducted on 9 September 2016. The CTBTO verification system detected an unusual seismic event of magnitude close to 5. Eventually the test registered at 5.1 on the Richter scale, which indicates an explosion yield of 15 to 20 kilotons. If the estimates prove to be correct, the magnitude of the second 2016 nuclear test would be twice the largest previous one.

The pace of nuclear tests in North Korea is dangerously accelerating: first test in 2006, second in 2009, third in 2013, four and fifth this year, waiting for a sixth maybe in the near future.<sup>69</sup>

To date, North Korea's capacity to produce plutonium is approximately 6 kilograms per year, which is enough to fuel one bomb annually. Usual estimates consider that the country has enough plutonium for 6 to 8 bombs (i.e. between 32 and 54 kilograms of plutonium) as of now.

<sup>69</sup> As to the fourth test in January this year, many experts doubt Pyongyang's claims that the regime tested a fusion bomb. According to others, it might have been a boosted fission device. For the record, a boosted fission device is a nuclear bomb that uses a small amount of fusion fuel to increase the rate, and thus yield, of a fission reaction. The neutrons released by the fusion reactions add to the neutrons released due to fission. Then more neutron-induced fission reactions can take place. The fission device is boosted.

As to the production of highly enriched uranium (HEU), estimates are less easy to make. According to Siegfried Hecker, who visited the Yongbyon centrifuge facility in November 2010, 'the expanded footprint of the facility since, and our probabilistic estimates of how much it could make in covert facilities, it is possible that the DPRK could add 150 kg of HEU (roughly 6 bombs' worth) to a current stockpile of perhaps 300 to 400 kg.'

To sum up, the North Korean regime could have enough fissile material for approximately 20 to 25 bombs by the end of 2016 depending on the estimates.

Talking about the ballistic missiles programme now, according to estimates, around 26 delivery vehicles were tested by North Korea in 2016. This is to be compared with 12 tests in 2015, 19 in 2014, 7 in 2013. The pace of ballistic missile tests by North Korea has accelerated so much this year that it has become convenient to distinguish between missiles under development and operational ones.

Among the first type are 'the Unha satellite launch vehicle, the Musudan IRBM, and the KN-11/Bukkeukseong-1 SLBM. In the latter two cases, roughly half a dozen tests have been conducted in the past year alone. Other developments include ground test activity for the new KN-08/KN-14 ICBM and a yet-unnamed solid-propellant IRBM presumed under development.' As to the IRBM that we usually call Musudan, it has been tested nine times in 2016, the two latest tests happening two weeks ago and apparently failing. First it means that the North Koreans are seriously committed to the Musudan. Then a partially operational device could appear in the near future, be it next year or in 2018.

As to the operational vehicles, most of them concern Scuds (that is the Hwasong 5 & 6), the occasional MRBM Nodong and increasingly the new tactical SRBM KN-02. These tests have been conducted around a dozen times a year by now.

What seems to be relatively new is that all the recent North Korean ballistic tests have been openly shown to the international community.

One last illustration: one month ago, on 20 September 2016, the North Korean Central News Agency (KCNA) reported the testing of a large new rocket engine at the Sohae Satellite Launching Station. According to the press agency, this new engine could be used for a new space launch vehicle. Whatever the specifics of the story, it indicates a basic capability of the country in outer space as well as a capability to build rockets using solid and liquid propellants.

North Korean capabilities must not be exaggerated though. The North has not shown the ability to successfully launch an ICBM. Obviously, it has not demonstrated the survivability of a nuclear warhead during reentry into the atmosphere.

Our problem now is maybe that whatever the strengthening of the international sanctions against the regime, North Korea might have the capacity to keep on developing its ballistic programme by its own means.

### **The DPRK's involvement in proliferation activities worldwide**

North Korea has established a certain number of mechanisms initially designed to consolidate its supply of goods and technologies whose exporting is regulated. These mechanisms evolved over time to contribute to the financing of the North's nuclear and ballistic programmes. They have been bolstered to allow Pyongyang to maintain its proliferating activities despite the multilateral and national sanctions regimes in force.

As to nuclear proliferation from North Korea, it has been heavily suspected for a long time, but there has been no specific evidence of it so far in open literature.

As to ballistic proliferation, it has been demonstrated that Pyongyang has supported the Iranian and Syrian weapons programmes since the 1980s. Later on, scientific and technical cooperation agreements were

signed between North Korea and Syria in 2002 and North Korea and Iran in 2012. According to missile proliferation experts though, 'there is little evidence to indicate deep missile-related collaboration'.

### **The international reactions against the North Koreans programmes**

We have to face a reality: The international sanctions regime has been the main diplomatic answer at multilateral level against the nuclear and ballistic evolving programmes of the DPRK for ten years. Considering the accelerating pace of these programmes, condemnatory UN resolutions and new sanctions taken since the deadlock of the six party talks after spring 2007 can be considered largely symbolic. One has to recognize that very little has been done to address the problem differently since then, but it must be recognized that the international sanctions regime has been tightened over the years.

The issue of the sanctions' effectiveness towards the nuclear and ballistic programmes of the DPRK is being very much debated. It can even be said that it is the main issue concerning the DPRK crisis.

The UN Security Council (UNSCV) adopted five resolutions against North Korea since its first nuclear underground test in 2006, paving the way for an international sanctions regime focused on denying North Korea access to technology, materials and assistance for its nuclear and missile programmes.

The international sanctions regime between 2006 and 2013 has progressively strengthened but it was linked to a demonstrated nexus between North Korean activity and its WMD programs. Thus, any ambiguity could be a means for countries to avoid taking action. Besides, some of the provisions in these four resolutions could be differently interpreted. Then the will of North Korea's trading partners to take action was key for the nascent international regime to have any real value. And this the main problem.

China is an historical ally to North Korea. It is generally estimated that 70 to 80 percent of all the assistance provided to the DPRK by foreign countries comes from China. China is responsible for approximately 76% of North Korea's total trade volume. And the total volume of the bilateral trade has increased from about \$500 million in 2000 to nearly \$7 billion in 2014. To make it simple: China is not playing the game. China has not fully used its economic leverage over North Korea to restrain its nuclear ambitions and to moderate its behavior.

UNSC resolution 2270 adopted on 2 March 2016 has deeply modified the ambition of the UN sanctions regime against North Korea. It created a comprehensive, legally-binding sanctions program. Another UNSC resolution of sanctions is being debated within the Council since the latest nuclear test of the DPRK on last September.

### **Effects on the global non-proliferation regime**

As to the NPT regime, it can be asserted that the nuclear non-proliferation norm has been lawfully, politically and morally weakened by the use of the withdrawal clause by the DPRK.

As to the risk of a proliferation cascade in the region, the scenario would be the following: a nuclear capable North Korea would lead its closest neighbors, The ROK, Japan, and Taiwan, to launch nuclear military programmes despite their historic reluctance in order to create minimum deterrent capabilities against possible conventional acts of aggression by Pyongyang. Such launches would produce a domino's effect in South East Asia (Vietnam, Indonesia, etc.). The stability of the whole region would eventually be at risk.

A regional notion, the mechanical effect of a 'proliferation cascade' has never been demonstrated on the ground either in the Middle East or in East Asia. As contemporary history shows, the decision of a State to emerge as a nuclear-armed national actor cannot be more than one factor among others leading other States to launch nuclear-defense programmes. Other factors range from financial, scientific, industrial and human resources capabilities to geostrategic isolation and the political willingness of a political regime to oppose the international community over the long term (economic embargoes, diplomatic isolation, etc.).

For the time-being, a nuclear proliferation cascade in North East Asia can be considered more a theoretical risk than a real threat.

A more tangible issue is the development of BMD systems in the North-East region. South Korea announced last June a final decision to deploy THAAD missiles to counter the increasing North Korean nuclear missile threat. These developments may have a destabilizing effect in the peninsula and more broadly in the region. This issue introduces to the strategic aspect of the crisis.

### **The strategic dimension of the North Korean crisis**

US extended deterrence is key to ensuring that South Korea, as Japan, forgoes nuclear arms today and in the future.

Recent polls show that the South Koreans' confidence in the military alliance with the US is still very high. Still, questions have been raised for some years about the credibility of the US extended deterrence guarantees. Whereas the US have engaged in a process of reassurance vis-à-vis its ally, the tightening of the US-ROK alliance, whereas desired by the majority of the Korean population has become a matter of caution for President Park.

South Korean economic dependence on China has recently increased to the point that since 2010, the total size of Sino-South Korean bilateral trade has surpassed the size of trade between South Korea and Japan and the US combined. Then a sort of dilemma could be perceived in South Korea based on the country's increasing dependence on the US for its security and on China for its economy, leading Seoul to possible conflicts of interest in the future.

The official Chinese stance over the crisis is based upon three main ideas: a denuclearized, peaceful and stable Korean Peninsula as a final goal, the return of North Korea to the six-party talks or the continuation of the multilateral negotiation process whatever the format as the primary method. Besides, as it is generally agreed among experts, the primary interests of China towards the North Korean crisis are: the stability of the Peninsula, the avoidance of war, the strategic rivalry with the US.

Like South Korea, China may face an increasing dilemma over time: either it decides to tighten the sanctions against Pyongyang, taking the risk of a more antagonistic North Korea, a regime collapse and a refugee crisis that would destabilize China's northeastern region as well as the perspective of a reunification of the peninsula under South Korea/US conditions. Or it refuses to impose harsher sanctions against the North's regime, ending the nascent partnership with South Korea and encouraging what China perceives as an American containment strategy against China in North East Asia.

### **Conclusion: the role of the EU**

Three main factors explain the EU's involvement in the North Korean crisis since the mid 1990's:

1. The negative effects of the DPRK's nuclear programme on the global nuclear nonproliferation regime
2. The increase in the range of North-Korean ballistic missiles
3. The risks of nuclear and ballistic proliferation from North Korea

The European Union has actively participated to the first phase of the North Korean nuclear crisis in the middle of the 1990s through the European Atomic Energy Community (EURATOM), which took part in the Korean Peninsula Energy Development Organization (KEDO). But it is a fact that the failure of KEDO can be perceived indirectly as a failure of European engagement.

Since then, the European Union's position is meant to first support the six-party talks process, then to ask 'the complete, verifiable, and irreversible dismantlement of North Korea's nuclear programs, in order to denuclearize the Korean Peninsula,' and finally to actively participate to the sanctions regime.

The European Union's relative reserve about other forms of engagement to address the North Korean nuclear crisis has to do with several factors: first, the failure of the KEDO has created a precedent that favors a careful approach to the problem; then the European Union's strong involvement to help resolve the Iranian nuclear crisis since 2004 mobilized much potential; last the main strength of the European Union in the nonproliferation field remains the value added it can make to the operation of effective cooperation and of assistance programs with requesting parties. The EU has not had such opportunity with the DPRK since the collapse of the KEDO.

It now could be asked whether there could be a new role for the EU to play as regards to nuclear and ballistic proliferation in North East Asia.

Theoretically speaking, the EU could have the opportunity to appear as a somehow new actor to help solve strategic issues in the Peninsula if the current deadlock with Pyongyang was to continue. This idea is open to debate.

### **Annex: Donald Trump's positions on international arms control and the DPRK nuclear crisis – some preliminary thoughts**

8 November 2016: Republican Donald Trump elected 45th President of the United States of America

#### ***General arms control policy***

Trump's policies have changed so much and so quickly over the course of the campaign that it is difficult to say with any confidence what his policies are about anything. He once said he would be willing to meet with Kim Jong Un. On the other hand, he is likely to pick as a Secretary of State a conservative Republican who is very sceptical about negotiations.

Trump does not seem to appreciate international security institutions such as the NPT, and the nonproliferation regime more broadly, will be damaged without U.S. support.

We also know that he very harshly criticized the nuclear deal with Iran which, by the way, will be under very much pressure.

To make it brief, it is possible that the American consensus on exterior and defense policy of the country will be questioned but no one knows to what extent.

As to the Democrats, the best choice for a Secretary of State would be Senator Bob Corker.

Robert Phillips 'Bob' Corker (born August 24, 1952) is an American politician and the junior United States Senator from Tennessee, serving since 2007. Corker, a member of the Republican Party, is currently the chairman of the United States Senate Committee on Foreign Relations. Corker is a rather traditional Conservative. He was one of three Republicans to support the New Strategic Arms Reduction Treaty (New START) in the Senate Foreign Relations Committee in September 2010. He would be a relatively cautious choice.

An opposite alternative would be John Bolton, the father of counter-proliferation.

#### ***What Korean policy?***

Trying to predict President Trump's policy toward Asia, or any global region for that matter, is difficult if not impossible. Trump has not articulated an Asian policy nor does he even have identifiable Asian advisors.

'Republican Asia experts call Trump 'ruinous', titled an article of the Financial times in August this year.

He made several declarations, evolving, or contradictory.

In 26 September 2016, presidential debate with Hillary Clinton, Trump addressed the North Korean issue. During the debate Clinton emphasized that she wanted 'to reassure our allies in Japan and South Korea... that we have mutual defence treaties and we will honor them.'

Trump said the contrary.

### **The value of extended deterrence questioned**

To some, Trump has said that the ROK and Japan should acquire nuclear weapons. It is not really true. Trump didn't say that South Korea should go nuclear, but he argued the South should pay fair prices if they want to be under the shelter of the so-called the U.S. nuclear umbrella.

Although Trump disavowed his earlier encouragement of South Korea seeking nuclear weapons of their own, his questioning of the value of extended deterrence will spur (incite) South Korean interest in getting an indigenous deterrent. The consequence is that the Korean Peninsula would become even more dangerous.

Generally speaking, with a weakening of the nuclear nonproliferation, the ROK will be further emboldened to acquire its own nuclear deterrent.

### **Counter-proliferation solutions favoured**

In a book written in 2000, Trump wrote:

'What would I do in North Korea? Fair question. It's easy to point out the problem, but what should be done to solve it? Am I ready to bomb this reactor? You're damned right.'

'As an experienced negotiator, I can tell you that negotiation with these madmen will be fruitless once they have the ability to lob a nuclear missile into Chicago, Los Angeles, or New York.'

'I don't advocate thermonuclear war, but if negotiations fail, I advocate a surgical strike against these outlaws before they pose a real threat.'

'As President I would be prepared to order a strike – using conventional weapons – against North Korean targets if it prevented nuclear blackmail or the nuclear destruction of the U.S. population'.

'A surgical strike would not only put out the fire in North Korea, but it would also send a message around the world that the United States is going to eliminate any serious threat to its security.'

### **Chinese direct engagement towards North Korea**

'I can't take anything off the table. Because you look at some of these countries, you look at North Korea, we're doing nothing there. China should solve that problem for us. China should go into North Korea.'

'China is totally powerful as it relates to North Korea.'

This assumption was shared by Defence Secretary Ash Carter earlier in September: 'One other thing I would single out is the role of China. It's China's responsibility.' 'China shares important responsibility for this development, and has the important responsibility to reverse it.'

Trump also argued that Iran should have to intercede in the North Korean matter, as a condition of the Iranian nuclear deal. He suggested Tehran and Pyongyang are allies. The full extent of that relationship is unclear, though some reports indicate ties between the two governments could run deep.

'Iran is one of their biggest trading partners. Iran has power over North Korea,' Trump added. 'When they made that horrible deal with Iran, they should have included the fact that they do something with respect to North Korea.'

## **US direct engagement with Kim Jong Un**

An article published in state media outlet *DPRK Today* in May 2016 referred to Trump's proposal to hold direct talks with Kim Jong Un, praising the likely Republican nominee as a 'wise politician' and 'far-sighted presidential candidate.'

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### Question by Ms A. Gomes

Q: Given the very bleak assessment of the tools we use to press the DPRK to have a meaningful respect for global and regional security and international law, isn't this relative failure an opportunity to consider a so-called 'out-of-the-box' approach to the crisis, as suggested by the president-elect Donald Trump? Would such approach be counterproductive, considering the impasse we are in today, and could it spark counter-reactions, from the part of South Korea and Japan?

If an agreement was reached with the DPRK, what would be its terms, and would they be limited to the nuclear aspect?

A: An 'out-of-the-box' approach would characterize the potential American approach in the years to come: we can indeed imagine how Trump could break free from the structured thinking we have witnessed from Washington until now. First, he is not president yet, and he may become much more pragmatic and flexible once he is in office. In fact, the character we see in the presidential candidate will not necessarily be the same when he actually becomes president. The issue we are faced with is the prospect of a direct engagement between the U.S. and the DPRK. This type of bilateral negotiation has happened before, but why would it happen now? In order for such relation to make sense, the U.S. will need to have a strategy: one could be to freeze current North Korean capacities, negotiate a moratorium on tests and allow for the inspectors to return. For many experts, this would not constitute such a good deal, but it could be the best one in current circumstances. It would also mean that the U.S. would give up on the core of the American position in the last years, which is the denuclearization of the peninsula. It remains the most probable option. Therefore, this kind of 'out-of-the-box' thinking would not necessarily be counterproductive. In fact, it could be a good way to slow the nuclearization of the DPRK down. Without a slowdown, the DPRK could easily be a nuclear power in two years or so.

### Questions by Mr B. Zdrojewski

Q: Mr Hautecouverture, you were talking about the progress achieved by the DPRK (for example, by being able to transfer, and deploy a nuclear warhead and material from places to places), but you have also mentioned some of their technical failures. I am interested in those failed attempts to launch warheads and to have them survive after being launched in the atmosphere, because I think it can be very telling about the North Korean capabilities today.

A: It is true that eight out of nine fire tests for the intermediate ballistic missile Musudan have failed, but the engineers are learning from their failures. The reason why we should be worried is that they keep testing them, and at some point, they will stop failing and start developing a capable force. We should expect those successes in the next year, or the year after at the latest.

Q: I also wanted to draw your attention on the DPRK's capacity to trade nuclear material in the context of global terrorism. If we want to defeat the Islamic State, and if we do defeat them in the military dimension, it will mean that there will be fragmented fighters who may be tempted to get access to nuclear material (for example, to make a dirty bomb). I do think that president-elect Trump should be incentivized to take specific actions. What is your opinion on those issues?

A: When addressing the threat of smuggling, we need to distinguish between two things: dirty bombs are made with radiological material, which can be found very easily, whereas nuclear material is much more difficult to have access to. The security of nuclear material is at the core of Barack Obama's initiative since 2010: The Nuclear Security Summits' process which ended in the Spring of 2016. Thanks to the assessment of the threat in the 2010 summit, many initiatives have been taken in order to secure the valuable material worldwide.

Q: The ROK and Japan seem to be the most likely targets when it comes to attacks undertaken by North Korea. What is being done to protect those states against a terrorist attack from the DPRK?

A: There is no nuclear material coming from the DPRK today. I can also tell you that the DPRK has not represented an urgent threat so far because Russia and China would not facilitate the smuggling of nuclear material out of the country. Of course, we cannot rule out that there might be a risk someday, but there is no political threat from the DPRK today. North Korea wants a deterrent, it does not want to disrupt the international order with terrorist attacks and the smuggling of nuclear material. However, in the long run, it could fit in a deterrent calculus against the U.S. or some U.S.'s allies. Finally, it would be risky for North Korea to support terrorist acts, because we could be able to trace the material back to Pyongyang. Besides, nuclear security in South Korea and Japan has been developed, and I do not think that they are more fragile than the other nuclear countries.

#### Questions by Mr J. Štětina

Q: Do we know where the North Korean regime does the tests, and do we have any information about the impact of those tests on the atmosphere or the environment in general? One recalls the time of the nuclear tests conducted by the Soviet Union, they made them quite shamelessly in the atmosphere or deep underground...

A: Nuclear weapons have been tested in Punggye-ri, in the northeast part of the country, the tests are conducted in the deep underground. As far as I know, the impact on the environment is not a pressing issue but we do not know very much about these tests.

Q: How do you think the election of Donald Trump is going to impact the nuclear deal with Iran? How is it judged and assessed by the new president-elect, and should we expect a revision of the deal in the U.S.? If so, what changes should we expect?

A: I am afraid I cannot answer that question. The problem is that the deal is under pressure in Teheran and now in Washington as well. Considering the implementation of the deal, the change in the American administration is indeed troublesome, but I have no knowledge of specific changes within the deal.

#### Final remarks by Mr Ambassador J. Bylica

On the 'out-of-the-box' approach, a U.S. visit at the highest level of state could indeed be one of the diplomatic ways to make a breakthrough in this difficult situation. One has to keep in mind that a couple of similar attempts have already been undertaken with the DPRK. There have been negotiations, agreements, or planned visits by Secretary-general Ban Ki-moon, which have not materialized. One needs to keep in mind previous deals and experiences in order to design future ones. It is indeed important to assess why previous deals have failed: maybe the deal should have been broader, maybe we should put more on the table, like we did with Iran. We also need to keep in mind that the relationship between the European Union and the DPRK is different from the one Pyongyang shares with the Washington.

Regarding failures and setbacks in the tests of the different North Korean programs, some experts consider that in at least one of the tests, the nuclear reaction did not go as far as it was supposed to go. All nuclear countries have had setbacks in their programs, but unfortunately, one learns from setbacks.

Finally, on the issue of smuggling, I want to insist on the fact that the European Union is very much involved in this effort globally. It has participated to the Nuclear Security Summits and supports the UNSC Resolution 1540. A lot of EU funding goes into the fight against proliferation and against any scenario of terrorist attacks using nuclear material. Finally, on South Korea and Japan, their main relationships are with the U.S., and even though some European member states have military cooperation on bilateral levels, most of the security issues are discussed with Washington.

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