A STUDY ON NORTH KOREA’S PROLIFERATION PARTNERS AND IMPLICATIONS FOR A NORTH KOREAN CONTINGENCY

By

JEE, Eunpyoung

THESIS

Submitted to
KDI School of Public Policy and Management
In Partial Fulfillment of the Requirements
For the Degree of

MASTER OF PUBLIC POLICY

2017
A STUDY ON NORTH KOREA’S PROLIFERATION PARTNERS AND IMPLICATIONS FOR A NORTH KOREAN CONTINGENCY

By

JEE, Eunpyoung

THESIS

Submitted to
KDI School of Public Policy and Management
In Partial Fulfillment of the Requirements
For the Degree of
MASTER OF PUBLIC POLICY

2017

Professor Hun Joo PARK
A STUDY ON NORTH KOREA’S PROLIFERATION PARTNERS AND IMPLICATIONS FOR A NORTH KOREAN CONTINGENCY

By

JEE, Eunpyoung

THESIS

Submitted to
KDI School of Public Policy and Management
In Partial Fulfillment of the Requirements
For the Degree of
MASTER OF PUBLIC POLICY

Committee in charge:

Professor Hun Joo PARK, Supervisor

Professor Jeffrey Scott ROBERTSON

Professor Changyong CHOI

Approval as of August, 2017
Abstract

In the midst of Pyongyang’s dangerous nuclear gamble, many predict a North Korean contingency and warn proliferation of weapons and military personnel. For this reason, government, military, and think tank researches recommended military intervention to address the proliferation issue. In this regard, they already covered proliferation sources (WHERE), missions (WHAT), assigned units (WHO), imperative for multilateral coordination (HOW), and force requirements (HOW MANY) of military intervention.

However, proliferation partners (WHERE TO) of the loose North Korean weapons and military personnel are yet to be thoroughly covered. In light of this, this study analyzes the North Korean proliferation partners for the last 50 years to estimate potential buyers of loose North Korean weapons and military personnel in case of the contingency.

Based on analysis of North Korean weapons export data and proliferation timeline, this research has found out the most likely buyers of North Korean weapons and military personnel: Iran and Syria. This research has also discovered North Korea’s closest and oldest partners: Pakistan, Iran, and Syria. Each of these countries has unique roles besides being North Korea’s ‘WMD cousins’ and their roles provide implications to North Korean contingency. Pakistan, North Korea’s ‘nuclear mentor’ is likely to be a ‘logistics node’ for Iran when another transport route is unavailable. Iran, North Korea’s ‘proliferation intermediary’ in the Middle East, may be the most likely proliferation partner in case of the contingency. Syria, a ‘testing ground’ for North Korean military minds and preview of a North Korean civil war, is another most likely proliferation partner of loose North Korean weapons and military personnel in the contingency.

Adding value to the previous studies, the research findings from analyzing the North Korean proliferation suggested most likely proliferation partners (WHERE TO) and implications to the North Korean contingency. This research is dedicated to not only the Republic of Korea but also all states concerned with proliferation of weapons and military personnel. It will add value to the existing research on the North Korean contingency by looking at the proliferation issue from another angle. In addition, highlighting North Korea’s proliferation partners will be helpful in understanding the global weapon proliferation network.
# Table of Contents

1. Introduction ........................................................................................................................................... 4

2. Literature Review ................................................................................................................................... 5

3. Methodology ......................................................................................................................................... 8

4. Caveats .................................................................................................................................................. 9

5. North Korea’s Proliferation Partners (1967-2016) and Implications for a North Korean Contingency... 11
   (1) Group 1: Weapon Customers ........................................................................................................ 13
   (2) Group 2: Missile Clients .................................................................................................................. 14
   (3) Group 3: Expertise Partners ........................................................................................................... 15
   (4) Group 4: WMD Cousins ................................................................................................................ 15
   (5) Closest and oldest partners: Pakistan, Iran, and Syria................................................................. 16

6. Conclusion ........................................................................................................................................... 21

7. Recommendations ............................................................................................................................... 22

8. Appendix ............................................................................................................................................. 23
   (1) Key Terms .................................................................................................................................... 23
   (2) North Korea’s Weapons Export Volume ....................................................................................... 24
   (3) North Korea’s Weapons Export Items ......................................................................................... 25
   (4) Timeline ....................................................................................................................................... 26

9. References .......................................................................................................................................... 34
1. Introduction

North Korea is often considered a ‘Failed State’ for its political repression, economic misery, human rights abuse, international isolation and tension with its neighbors. More recently, Trump Administration stated, “all options are on the table”¹ (Washington Post 2017) signaling that it may take a military measure as Pyongyang insists on its nuclear ambition. The international community has been stressing that only way for North Korea to survive is to open and reform its economy as China under Deng Xiaoping did, and cease its nuclear program. However, North Korea keeps refusing to take the recommended path of the international community but heads toward the opposite direction: a Militaristic Nuclear State.

For this reason, many predict the demise of the Kim regime. It is estimated that one of the most likely and dangerous consequences of the North Korean contingency is proliferation of weapons and military personnel. In light of this, many previous studies suggested military intervention to address the proliferation issue. Based on multiple forms (human, image, signal, and electronic) of intelligence collected in North Korea, government, military, and think tank researches already covered proliferation sources (WHERE), missions (WHAT), assigned units (WHO), imperative for multilateral coordination (HOW), and force requirements (HOW MANY) of military intervention.

However, previous studies have not adequately covered proliferation partners (WHERE TO). For this reason, this study analyzes the history of North Korean proliferation for the last 50 years to estimate potential buyers of loose North Korean weapons and military personnel in case of the contingency. This research aims at deriving lessons from the existing North Korean proliferation partners and provides policy recommendations for the intelligence communities in all states concerned of controlling or at least mitigating proliferation of weapons and military personnel.

This research will be valuable for three reasons. First, it highlights partners for proliferation that always deserved further research.² Second, it will be useful for multiple states that are concerned of weapon proliferation: the Republic of Korea, United States, China, Israel, etc. Third, considering the high intensity of the recent security environment on the Korean Peninsula that might spell an abrupt change to North Korea, this research will be of value for its timeliness.

---

² Korea Defense Intelligence Agency (KDIA), the chief intelligence authority in the ROK military has a large staff organization and sources for intelligence collection, fusion, and analysis from North Korea but still needs improvement in its overseas intelligence capability.
2. Literature Review

Previous studies produced in the government, military, and think tank domains already covered possible scenarios, probability, estimated consequences, and recommended measures about the North Korean contingency. In particular, regarding the concern on proliferation of weapons and military personnel, they already made a remarkable contribution to solving this problem by military intervention. They already covered proliferation sources (WHERE), assigned units (WHO), missions (WHAT), imperative for multilateral coordination (HOW), and force requirements (HOW MANY) of military intervention to address the proliferation issue.

First, previous research in the think tank community and military covered proliferation sources: production and storage facility for conventional and WMD arsenal scattered throughout North Korea. *Nuclear Threat Initiative* organized WMD facilities in North Korea in a map.\(^3\) (Nuclear Threat Initiative 2017) As displayed in Figure 1, locations (WHERE) of North Korean WMD facilities are well known. It means that WMD proliferation sources are already identified by multiple intelligence sources and government and military authorities must have corresponding measures and plans already.

---

Second, previous literature covered a recommended measure: military intervention. In his 38 North piece, Robert Peters well described missions for the intervening military forces (WHAT). “Its effort must include locating, seizing and securing weapons depots; rendering constituted WMD safe through dismantlement of the warhead or weapon delivery mechanism; maritime interdiction to prevent leakage off the peninsula; stopping movement of people and materials of concern along land borders; and dismantlement of possible proliferation networks so that materials of concern or even weapons do not move out of the theater in the midst of a chaotic security environment”.  

Third, based on the available North Korea intelligence, Military authorities allegedly have a combined plan to address WMD challenges in North Korea; Concept Plan 5029.  

In addition, China also seems aware of possible WMD and refugee crisis. People’s Liberation Army Shenyang Military District regularly holds river-crossing exercises, possibly in preparation of a military intervention to set up refugee camps within the North Korean territory and control WMD.

Fourth, Bruce Bennett also stressed the importance of multilateral military coordination among intervening states (HOW). He wrote, “ROK and US should work closely with China, Russia, and even Japan should also be involved in dealing with the possible violence in North Korea because they will each have a stake in any regional conflict”. Bennett also notes, “While South Korean and US forces advance from the South to secure the means of delivery for WMD and its production facilities located in the Southern part of North Korea, the intervening Chinese forces would be able to reach and handle the fissile material in the Yongbyon Nuclear Facility.

Fifth, force requirement (HOW MANY) estimate to implement WMD elimination and DDR (Demobilization, Disarmament, and Reintegration) is also covered by previous literature. In Table 1, Jennifer Lind displayed force requirements for stability operations in North Korea in a most permissive environment, in which no military or paramilitary forces resist the stabilization effort. In this case, total number of troops needed

---

8 Bennett, “Preparing for Possibility of a North Korean Collapse”, 179.
9 Bennett, Preparing for Possibility of a North Korean Collapse, 216.
is 263,000 at least, and troops between 52,000 and 59,000 will be required for WMD elimination and conventional disarmament missions that are directly relevant to proliferation. (LindJennifer 2012, 5)

<table>
<thead>
<tr>
<th>Mission</th>
<th>Requirements (number of soldiers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability operation</td>
<td>198,000 - 312,000</td>
</tr>
<tr>
<td>Border control</td>
<td>24,000</td>
</tr>
<tr>
<td>WMD elimination</td>
<td>3,000 - 10,000</td>
</tr>
<tr>
<td>Conventional disarmament</td>
<td>49,000</td>
</tr>
<tr>
<td>Combat/Deterrence</td>
<td>70,000-10,500</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>263,000 – 405,000</strong></td>
</tr>
</tbody>
</table>

*Table 1. Force Requirements for Post-Collapse Stability Operations in North Korea*

However, even though previous literature made great accomplishments in addressing the proliferation sources (WHERE), missions (WHAT), assigned units (WHO), multilateral coordination (HOW), and force requirements (HOW MANY) of military intervention, previous literature has not adequately covered potential proliferation partners (WHERE TO). Addressing proliferation sources is important but identifying and analyzing the potential partners of proliferation should not be overlooked. Because, dealing with the proliferation sources along with proliferation partners will be much more effective.

In light of this, this research highlighting the previously overlooked aspect, North Korea’s proliferation partners (WHERE TO), will have research value for mainly three reasons. First, it will add value to the existing research by looking at the proliferation issue from another angle. Second, since Pyongyang already has been proliferating WMD, conventional weapons, and military personnel to states and even non-state actors for decades, highlighting North Korea’s proliferation partners will be helpful in understanding the global weapon proliferation network.

3. Methodology

As aforementioned, this study aims to highlight potential North Korean proliferation partners in case of North Korean contingency. Accordingly, the main question for the research is as follows.

Research question: “Who would be interested in proliferated North Korean weapons and military personnel?”

In light of this, this study analyzes the North Korean proliferation partners for the last 50 years to estimate potential buyers of loose North Korean weapons and military personnel in case of the contingency. It derives lessons from the findings of the existing North Korean proliferation partners to provide policy recommendations.

This research analyzes the history of North Korea’s the proliferation between North Korea and its partners since 1967 when it reportedly began. Then why analyze history? North Korea’s proliferation partners will not likely to change significantly even in contingency. Since finding a new partner outside the existing network will be unlikely in the midst of the contingency in particular. Those willing and able to sell weapons and military personnel would look to the existing partners rather than exploring new ‘markets’. Assuming no significant change of Pyongyang’s proliferation partners, potential buyers of the proliferated weapons and military personnel in contingency will not be so different from the existing ones. For this reason, it is important to analyze the existing partners. Analyzing the history of Pyongyang’s proliferation can help us estimate the how the proliferation partners would work in the future.

There are two main pillars of the history analysis. First, North Korea’s weapons export volume and export items will reveal Pyongyang’s most important weapons export partners and best-selling items. Second, a timeline, a compilation of intelligence from multiple sources, of North Korea’s proliferation activities will provide how North Korea has been selling its conventional weapons, military personnel, missiles, and WMD. By using both weapons export data and timeline, I tried not to omit crucial details by using two pillars of sources, but provide more accurate and comprehensive research findings.

Subsequently, based on research findings from the North Korea’s proliferation network, their implications to North Korea will be further elaborated. Lastly, policy recommendations based on the findings will follow.
4. Caveats

(1) Open-source information
For use or citation of confidential sources is limited, all sources used for this research are based on open-source information including media coverage, books, journal articles, reports, and online data.

(2) Focus on North Korea’s outbound proliferation
This research focuses on North Korea’s outbound proliferation, which means where and how Pyongyang proliferated its weapons and military personnel. Although former Soviet Union, Pakistan, and China have played a key role in the North Korean nuclear and missile program, multiple researches already covered the details behind how Pyongyang acquired missiles and nuclear weapons. Therefore, this research does not focus on how North Korea acquired its weapons and technology, but focuses on how North Korea proliferates them.

(3) Proliferation can happen without central government control
In fact, Libyan case well demonstrates that proliferation of weapons and military personnel occurs without central government control. The 2011 fall of Gadhafi regime resulted in proliferation of conventional weapons including Man-Portable Air Defense System (MANPADS), Rocket-Propelled Grenades (RPG), mines, mortars, and ammunition. Russian-made RPG-29 were smuggled out of Libya and sold to Syria, handed over to Hezbollah in Lebanon, and used against the Israel Defense Forces in battles. 11 (SchiffZe'ev 2006) In addition, Gadhafi’s mercenaries heavily armed and well trained in the Libyan civil war returned to their homes in Mali, Chad, and Niger and became rebel militants. 12 (GlobalHelios 2013)

(4) Limited information
First pillar of the analysis on the North Korean proliferation network, the weapons export data only displays transfer of conventional weapons and missiles. It does not display military personnel and WMD transfer. Second pillar, the timeline includes compiled intelligence from multiple sources but not limited to visits and dispatch of key figures such as scientists and government officials, intercepts of cargos from North Korean ports, transport of weapons and ammunitions, sanctions imposed on key entities, and major agreements. As the timeline is a compilation of scattered information found in government documents, media coverage, academic journals, intelligence report, and claims by relevant individuals, the timeline may not include all

the North Korean proliferation activities. Also, the timeline includes several allegations of proliferation activity difficult to confirm for insufficient evidence.

(5) **India, Israel, and the US bias**

English-written sources by the US, Israeli, and Indian experts that accuse Pakistan, Iran, Syria, and Iraq are widely cited for their availability. Unfortunately, Arabic and Persian sources were not available due to the language barrier, and English sources written by Syrian, Iranian, Pakistani experts, making the research is not free from India, Israel, and the US bias.
5. North Korea’s Proliferation Partners (1967-2016) and Implications for a North Korean Contingency

As aforementioned, based on weapons export data and timeline (owing to their volume, refer to Appendix in the latter part of the paper), Table 2 displays the summary of the North Korean proliferation partners.

<table>
<thead>
<tr>
<th>Group 1 Conventional weapons (C)</th>
<th>Group 2 Missile (M)</th>
<th>Group 3 Expertise (E)</th>
<th>Group 4 WMD (W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madagascar</td>
<td></td>
<td>Syria</td>
<td></td>
</tr>
<tr>
<td>1977-1986 Egypt</td>
<td>Iran</td>
<td>Syria</td>
<td></td>
</tr>
<tr>
<td>Guyana</td>
<td>Libya</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iran</td>
<td>Pakistan</td>
<td>Syria</td>
<td></td>
</tr>
<tr>
<td>Libya</td>
<td>Syria</td>
<td>Syria</td>
<td></td>
</tr>
<tr>
<td>Syria</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tanzania</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1987-1996 Uganda</td>
<td>Iran</td>
<td>Syria</td>
<td></td>
</tr>
<tr>
<td>Pakistan</td>
<td>Libya</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Syria</td>
<td>UAE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1997-2006 Ethiopia</td>
<td>Iran</td>
<td>Hamas</td>
<td>Iran</td>
</tr>
<tr>
<td>Hezbollah</td>
<td>Pakistan</td>
<td>Hezbollah</td>
<td>Pakistan</td>
</tr>
<tr>
<td>Myanmar</td>
<td>Syria</td>
<td>Iran</td>
<td>Syrian</td>
</tr>
<tr>
<td>Vietnam</td>
<td>Vietnam</td>
<td>Yemen</td>
<td>North Korea</td>
</tr>
<tr>
<td>Yemen,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007-2016 Hamas</td>
<td>Hezbollah</td>
<td>Hezbollah</td>
<td>Iran</td>
</tr>
<tr>
<td>Hezbollah</td>
<td>Iran</td>
<td></td>
<td>Syria</td>
</tr>
<tr>
<td>Iran</td>
<td>Syria</td>
<td>Syria</td>
<td></td>
</tr>
<tr>
<td>Myanmar</td>
<td>Palestine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Palestinian</td>
<td>Republic of Congo</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Syria</td>
<td>Hezbollah</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iran</td>
<td>Syria</td>
<td>Hezbollah</td>
<td></td>
</tr>
<tr>
<td>Syria</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Summary of North Korean proliferation network
Horizontal rows are organized by time. North Korea’s partners placed in the upper row are considered to have the oldest link with Pyongyang. If a partner is no longer displayed on the lower row like Madagascar, it implies that its link with Pyongyang grew weak. In contrast, if it still appears in the lower row like Syria for instance, its link with Pyongyang remains strong. Therefore, North Korea’s most recent partners are Hamas, Hezbollah, Iran, Myanmar, Palestine, Republic of Congo, and Syria.

Vertical columns are organized by North Korea’s relationship. As shown on the table, Pyongyang’s network consists of four Groups. Group 1 partners are least significant, while Group 4 partners are most significant for Pyongyang. In this structure, North Korea’s relationship with the Group 1 partners can be described as weapon customers, while the relationship with Group 4 partners such as Iran, Pakistan and Syria is most significant. There are several partners listed in multiple Groups like Hezbollah, Iran, and Syria, their Group is determined with the highest Group they belong. For instance, since Syria is listed in all four Groups, it is considered Group 4, the highest Group.

Table 3 shows the North Korean proliferation partners by time. Those listed in the top row are least likely to get in touch with Pyongyang for further deals. In contrast, those listed in the bottom row have the most recent link with Pyongyang and likely to keep it unless a significant change in relationship takes place.

<table>
<thead>
<tr>
<th>1967-1976</th>
<th>Democratic Republic of Congo, Egypt, Madagascar, Syria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1977-1986</td>
<td>Egypt, Guyana, Iran, Libya, Pakistan, Syria, Tanzania</td>
</tr>
<tr>
<td>1987-1996</td>
<td>Iran, Pakistan, UAE, Uganda, Syria</td>
</tr>
<tr>
<td>1997-2006</td>
<td>Ethiopia, Hamas, Hezbollah, Iran, Myanmar, Pakistan, Syria, Vietnam, Yemen</td>
</tr>
<tr>
<td>2007-2016</td>
<td>Hamas, Hezbollah, Iran, Myanmar, Palestine, Republic of Congo, Syria</td>
</tr>
</tbody>
</table>

Table 3: North Korea's proliferation partners (by time)

Among the partners shown in the Table 3, most frequently listed partners, which means North Korea’s oldest partners are marked bold: Iran, Pakistan, and Syria. They kept close ties with North Korea for at least three decades.
Table 4 displays the four groups of North Korean overseas partners based on relationship. Analysis on each four groups and their implications in case of North Korean contingency will follow. Partners that recently had interacted with North Korea are marked bold.

<table>
<thead>
<tr>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Group 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weapons customers (17)</td>
<td>Missile clients (8)</td>
<td>Expertise partners (5)</td>
<td>WMD cousins (3)</td>
</tr>
<tr>
<td>DR of Congo</td>
<td>- Hezbollah</td>
<td>- Egypt</td>
<td>- Iran</td>
</tr>
<tr>
<td>Egypt</td>
<td>- Iran</td>
<td>- Hamas</td>
<td>- Pakistan</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>- Libya</td>
<td>- Hezbollah</td>
<td>- Syria</td>
</tr>
<tr>
<td>Guyana</td>
<td>- Pakistan</td>
<td>- Iran</td>
<td>- UAE</td>
</tr>
<tr>
<td>Hamas</td>
<td>- Syria</td>
<td>- Syria</td>
<td>- Yemen</td>
</tr>
<tr>
<td>Hezbollah</td>
<td>- Yemen</td>
<td>- Syria</td>
<td>- Yemen</td>
</tr>
<tr>
<td>Iran</td>
<td>- Uganda</td>
<td>- Palestine</td>
<td>- Vietnam</td>
</tr>
<tr>
<td>Libya</td>
<td>- Vietnam</td>
<td>- Rep. of Congo</td>
<td>- Yemen</td>
</tr>
<tr>
<td>Madagascar</td>
<td>- Yemen</td>
<td>- DR of Congo</td>
<td>- DR of Congo</td>
</tr>
<tr>
<td>Myanmar</td>
<td>- Yemen</td>
<td>- Egypt</td>
<td>- Iran</td>
</tr>
<tr>
<td>Pakistan</td>
<td></td>
<td>- Hamas</td>
<td>- Pakistan</td>
</tr>
<tr>
<td>Syria</td>
<td></td>
<td>- Hezbollah</td>
<td>- Syria</td>
</tr>
<tr>
<td>UAE</td>
<td></td>
<td>- Iran</td>
<td>- Syria</td>
</tr>
<tr>
<td>Vietnam</td>
<td></td>
<td>- Syria</td>
<td>- Yemen</td>
</tr>
<tr>
<td>Yemen</td>
<td></td>
<td>- Yemen</td>
<td>- Yemen</td>
</tr>
</tbody>
</table>

Table 4: North Korea’s proliferation partners (by relationship)

(1) Group 1: Weapon customers
Those placed in the Group 1 column are called ‘Weapon Customers’. Group 1 includes Democratic Republic of Congo, Ethiopia, Guyana, Madagascar, Myanmar, Republic of Congo, Palestine, Tanzania, Uganda, and Vietnam. They are considered the lowest Group considering their investment value.

Selling conventional weapons is considered short-term relationship. Because it does not involve long-term commitment compared with transfer of missile, expertise, and WMD. Despite a few exceptions, when Pyongyang finds a potential for further investment from a Group 1 partner, its relation upgrades to a higher group.
North Korean conventional weapons will likely proliferate to the Group 1 partners in case of the contingency. Group 1 partners will likely be interested in buying the North Korean conventional weapons as they already did. In the same way, any North Korean in charge of storage and maintenance of the conventional weapons are likely to get in touch with the ‘weapon customers’ on their sales record by any means with or without centralized control of the Kim regime. In particular, North Korean conventional weapons are likely to fall in the hands of the most recent partners including Hamas, Hezbollah, Iran, Myanmar, Palestine, Republic of Congo, and Syria.

(2) **Group 2: Missile clients**

Group 2 partners are ‘Missile clients’ that buy North Korean missiles and pay North Korean missile technicians for providing technological maintenance. Hezbollah, Iran, Libya, Pakistan, Syria, UAE, Vietnam, and Yemen fall into this Group. Group 2 includes several partners that have only short-term relationship with North Korea such as UAE and Vietnam.

Missile clients (Group 2) are considered higher than Group 1 because of high investment value of missiles technology. Compared to conventional weapon technology, it takes much more time - years or even decades - for investment to develop and produce missile components, namely boosters, engines, guidance system, launchers, re-entry vehicles, fuse, warheads, etc. In addition, growing technicians with knowledge of basic science (physics and chemistry), and applied science (ballistics, aerodynamics, space engineering, etc.) takes decades as well.

In addition, what differentiates a missile from conventional weapons is its strategic value. Since missiles can fly hundreds of kilometers at least and destroy or attrit enemy assets without loss of friendly assets, they are regarded as strategic assets. Moreover, strategic value of a missile is maximized when a missile carries a WMD-loaded warhead. It becomes a means of delivery for WMD, making it incomparably more lethal than conventional warheads. The more lethal it is, the more expensive it becomes. For this reason, North Korea has been actively selling missiles to its missile clients (Group 2) that paid for expensive high-end weapons.

Group 2 missile clients are likely buyers of the loose North Korean missiles in case of the contingency. In particular, among the missile clients including Hezbollah, Iran, Libya, Pakistan, Syria, UAE, Vietnam, and Yemen, most recent missile clients Hezbollah, Iran, and Syria are most likely to attempt to acquire the loose North Korean missiles.
(3) **Group3: Expertise partners**

Group 3 partners including Egypt, Hamas, Hezbollah, Iran, and Syria are so-called ‘Expertise partners’. These ‘partners’ learn from their North Korean ‘mentors’: military instructors, underground facility engineers, operation planners, and pilots (high-value military personnel) for example. In return, North Korean military personnel teaching in the partner countries can acquire real combat experience, which is unavailable in North Korea.

Group 3 is considered closer to North Korea than the Group 2 as it involves long-term relationship. It takes years of investment to develop military education and training programs and grow human resources with expertise in operating fighter jets, constructing underground facilities, and devising operation plans. The hard-earned North Korean military expertise proliferates to the Group 2 partners in the name of military cooperation. Group 3 partners have long-standing relationship with Pyongyang for more than 10 years, making them eligible for higher group than the Group 2 except Hamas with short history that began in 1987.  

(4) **Group 4: WMD cousins**

Iran, Pakistan, and Syria are North Korea’s ‘WMD cousins’, with the closest relationship among the proliferation partners. At the same time, they are the oldest partners that have kept close ties with North Korea for at least three decades.

Iran has been seeking North Korean assistance in their nuclear programs until the Joint Comprehensive Plan of Action (JCPOA) when it agreed to use its nuclear program for exclusively peaceful purposes. Pakistan bartered its nuclear technology with North Korean
missile technology in the late 1990s\textsuperscript{15} (Council on Foreign Relations 2005), making it difficult to monitor by export and import records. This is the reason why the North Korean export data displays only one transaction with Pakistan. Syria, as accused by many experts in the previous studies, has been the most loyal user of not only North Korean nuclear technology but also chemical weapons, conventional weapons, missiles, underground construction technology, and military expertise.

In case of contingency, North Korean WMD is likely to proliferate to Pyongyang’s WMD cousins: Iran and Syria. Given the long-term ‘WMD relationship’ with North Korea, their WMD experts must have established a good range of human network each other. Assuming their WMD relationship stays the same, North Korean WMD experts will likely seek asylum with key material. In this case, most likely partners for the North Korean WMD are Iran and Syria, Pyongyang’s most recent WMD partners. A reason behind the Pakistani exclusion from this list will be further explained the latter part.

(5) \textbf{Closest and oldest partners: Pakistan, Iran, and Syria}

Among the proliferation partners, there are three most significant ones: Pakistan, Iran, and Syria. They are significant not only because of their close and long-term relationship with Pyongyang but also for their roles in the indirect proliferation in the region. Their roles are analyzed to understand how the proliferation partners work together.

\textbf{Pakistan}

First among North Korea’s three WMD cousins, Pakistan has three main roles: a ‘logistics node’ for Iran when necessary, ‘nuclear mentor’, and missile client.

First, Pakistan’s role began in the 1980s when Pakistan provided a ground transport route of North Korean conventional weapons and missiles bound for Iran via Pakistan. During the Iran-Iraq war, Iran could successfully acquire North Korean conventional weapons and missiles thanks to the Pakistani help.

Second, Pakistan played a role of ‘nuclear mentor’ to North Korea with the Chinese nuclear technology after signing of a secret Sino-Pakistani nuclear technology cooperation agreement in 1976.\textsuperscript{16} (WeinerTim 1998) In an effort to have someone to maintain balance of power behind India, China


provided Pakistan with active nuclear technological assistance. The plutonium production reactor and reprocessing facility in Pakistan were reportedly built by Chinese assistance.\textsuperscript{17} (GertzBill 1996) China also provided Pakistan with missiles including M-9, M-11 and a number of Dong Feng-21 (renamed Hatf, Shaheen I & Shaheen II respectively) ballistic missiles.\textsuperscript{18} (MalikMohan 2003, 62) In the 1990s, North Korea and Pakistan found a mutually beneficial deal: nuclear and missile barter. The Father of Pakistani nuclear bomb, Abdul Qadeer Khan (a.k.a. AQ Khan) visited North Korea multiple times in the 1990s for nuclear technology transfer.

Third, Pakistan used to be a major missile client for North Korea until 2007 when its missile program reached maturity that ensures sufficient range and payload to strike strategic partners in India.\textsuperscript{19} (Nuclear Threat Initiative 2016) As the timeline provides, North Korea has actively sent missile scientists to Pakistan along with sales of missile components until Pakistan no longer needs to extend its missile range.

Pakistan’s three roles provide two implications for North Korea. First, Pakistan can still provide a key transport route of North Korean conventional weapons, military personnel, missiles, and even WMD to Iran if direct routes to Iran are unavailable. Second, despite the most recent confirmed evidences of nuclear proliferation between Islamabad and Pyongyang, Pakistan may be still providing nuclear assistance to North Korea until Pyongyang’s nuclear program reaches maturity. Third, North Korean missiles and WMD are unlikely to proliferate to Pakistan since it already accomplished nuclear deterrence with missiles ranging India.

**Iran**

Among the North Korean proliferation partners, only Iran and Syria are listed in all four groups, which rely on North Korean conventional weapons, military expertise, missiles, and WMD. Beside Iran’s prominent presence among the proliferation partners, Iran also plays a unique role in the network: a ‘proliferation intermediary’.

Iran serves as an intermediary of North Korean conventional weapons and military expertise in the Middle East. Iran’s elite conservative forces, the Iranian Revolutionary Guard Corps (IRGC) has a special operations unit called the Qods Forces (QF). It assumes a foreign policy role in the IRGC to exert Iran’s

\textsuperscript{17} Bill Gertz, “China Aids Pakistani Plutonium Plant”, \textit{Washington Times}, April 3, 1996.
\textsuperscript{18} Mohan Malik, “The Proliferation Axis: Beijing-Islamabad-Pyongyang”, 62.
influence throughout the region by supporting pro-Iranian forces in clandestine ways.\textsuperscript{20} (IssacharoffAvi 2014) The QF serves as a link that connects Iran with Syria, and even non-state actors like Hezbollah and Hamas by providing them with military expertise and weapons.

IRGC leaders have confirmed the QF is in Syria to assist the Assad regime against an armed uprising, and it is advising the Iraqi government against the ISIS.\textsuperscript{21} (KatmanKenneth 2016) An Iranian port at Bandar Abbas, located at the Strait of Hormuz serves as a key node for transporting goods to Iran’s protégés including Syria, Hezbollah, and Hamas. Andrea Berger, a renowned expert on North Korean WMD proliferation wrote, “There is little reason to doubt that this proliferation network will persist”.\textsuperscript{22} (BergerAndrea 2014)

Iran’s role in the North Korean proliferation network implies several points. First, Iran will be the most likely partner for loose North Korean conventional weapons, military personnel with expertise, missiles, and WMD. Unlike Pakistan who accomplished strategic deterrence against India based on maturity in its missile and nuclear programs, Iranian leaders, IRGC in particular, may be still eager to follow the path of Pakistan. Naturally, North Korean missile and nuclear expertise are desperately needed in this sense. Second, Iran, using the Qods Force in particular, is likely to play the intermediary role in the Middle East by relaying the loose North Korean weapons and military personnel as it has.

**Syria**

Since Syria has been the most loyal client of all kinds of North Korean military weapons and expertise ranging from conventional weapons to WMD, it has multiple roles in the network: a loyal client, ‘testing ground’ for North Korean military minds, and a ‘patron’ for non-state actors.

First, Syria has been the most loyal partner to North Korea. In the 1960s and 1970s, North Korea’s primary export item for Syria was military personnel with expertise: instructors, pilots, tank crew, etc. Subsequently, Damascus and Pyongyang enhanced their area of cooperation to conventional weapons, missiles, and finally WMD.

Second, Syria is a testing ground for North Korean military minds. By engaging in Syrian conflicts, North Korean military minds can acquire field experience and lessons unavailable in North Korea, where a


real combat does not take place. Like the Republic of Korea military that acquires real field experience by dispatching its troops for peacekeeping operations in Iraq, Afghanistan, Lebanon, South Sudan, and so on, North Korea also learns from real field experience from the Syrian battlefield.

Third, similar to Iran, the intermediary of proliferation, Syria also plays a ‘patron’ role for non-state actors such as Hezbollah and Hamas with conventional weapons and military expertise from North Korea. Thanks to the Syrian patronage, Hamas and Hezbollah have been beneficiaries of the North Korean military accomplishments during the last two decades, and enhanced their capability against primary adversary: the Israel Defense Forces (IDF).

The mastermind behind all these was Kim Kyok Sik, the Minister of People’s Armed Forces and a key link between Pyongyang and Damascus visited Syria. In 1970s, he served as the deputy military attaché in the North Korean embassy in Damascus. The projects he managed included helping to rehabilitate the Syrian armed forces in the 1970’s, coordinating shipments of MRL systems\(^\text{23}\)—including the now infamous 122mm MRL systems used to deliver chemical rounds against the Syrian civilians in the recent civil war. He also managed projects aimed at providing training and military support to non-state actors including Hezbollah through Syria until his death in 2015.\(^\text{24}\) (BechtolBruce 2015)

Syria’s roles have several implications for a North Korean contingency. First, along with Iran, Syria will be the most likely buyer of loose North Korean conventional weapons, military personnel, missiles, and WMD for the same reasons aforementioned. Second, in case a civil war breaks out in North Korea, it may resemble the ongoing Syrian civil war, which is a testing ground for the North Korean military. Because both North Korean conventional and unconventional weapons are in use during the Syrian conflict beside the North Korean military expertise such as operation planning, combat tactics, and underground facility construction techniques, a North Korean civil war may look like a déjà vu of the Syrian civil war.

Based on the research findings, Figure 2 summarizes how North Korean proliferation network functions.

---

\(\text{23} \) MRL: Multiple Rocket Launch

\(\text{24} \) Bruce Bechtol, “North Korea and Syria: Partners in Destruction and Violence”, 280.
Figure 2. North Korea's proliferation network
6. Conclusion

North Korea, the failed state and proliferation source of conventional weapons, military expertise, missiles, and WMD, will face its demise anyhow and anytime. For this reason, previous literature by government, military, and think tank community covered proliferation sources (WHERE), missions (WHAT), assigned units (WHO), imperative for multilateral coordination (HOW), and force requirements (HOW MANY) of military intervention to address the proliferation issue.

However, proliferation partners (WHERE TO) were yet to be thoroughly covered. In light of this, this research highlighted the potential proliferation partner by analyzing the history of North Korean proliferation since its beginning in 1967. Based on analysis of North Korean weapons export data and proliferation timeline, this research revealed the most likely buyers of North Korean weapons and military personnel. Hamas, Hezbollah, Iran, Myanmar, Palestine, Republic of Congo, and Syria are most likely buyers for conventional weapons, Hezbollah, Iran, and Syria for missiles, Hezbollah and Syria for military expertise, and Iran and Syria for WMD. Most likely buyers of all of the four are Iran and Syria.

In addition, this research discovered North Korea’s closest and oldest partners in its proliferation network: Pakistan, Iran, and Syria. Each of these WMD cousins has unique roles that provide implications to North Korean contingency. Pakistan, North Korea’s ‘nuclear mentor’ is likely to be a ‘logistics node’ for Iran when other transport is unavailable. Iran, North Korea’s ‘proliferation intermediary’ in the Middle East, may be the most likely proliferation partner in case of the contingency. Syria, a ‘testing ground’ for North Korean military minds and preview of a possible North Korean civil war, is another most likely proliferation partner of loose North Korean weapons and military personnel in the contingency.

By looking at the proliferation issue from another angle (WHERE TO), this research analyzed North Korea’s proliferation partners. Furthermore, this research shed light to a part of the global weapon proliferation network by analyzing North Korea’s proliferation partners and how they work with each other. Accordingly, not only the Republic of Korea but also all states concerned with proliferation of weapons and military personnel must take actions in a timely manner.
7. Recommendations

This part provides several policy recommendations based on the research findings and implications. The recommended Course of Actions (COA) are mainly for the Republic of Korea but also applied to any country concerned of North Korean proliferation of weapons and military personnel.

COA #1: If available, take DIE (Diplomatic, Intelligence, and Economic) measures directly with most likely buyers of the North Korean weapons and military personnel: Republic of Congo, Hamas, Hezbollah, Iran, Myanmar, Palestine, and Syria.

Since North Korea’s most recent proliferations headed to the partners above, taking appropriate DIE measures would be important in tracking and controlling the proliferation activity in case of the North Korean contingency. In this case, the measures include official and unofficial diplomatic deals, overt and covert intelligence deals, and providing economic incentives for potential intermediaries and end-users of the proliferated North Korean weapons and military personnel in exchange of information.

COA #2: Along with COA #1, enhance DIE measures with neighboring countries or Inter-Governmental Organizations of the partners above.

Since Hamas and Hezbollah are not state actors with diplomatic authority, and some states like Syria may have better diplomatic relationship with North Korea than the ROK, diplomatic effort may not be a viable option. In this case, covert diplomatic negotiations with the UN to assign the ROK Battalion or ‘Dongmyong Unit’ dispatched in Lebanon for a peacekeeping mission may be a viable option. In addition, intelligence cooperation with the Israel, Lebanon, and Saudi Arabia will also be an alternative.

COA #3: Enhance cooperation with port and airport authorities of all countries geographically located between North Korea and the likely partners.

Since there are records of intercepts and seizure of North Korean cargo that contained conventional weapons, missiles, and their components, enhancing cooperation with port and airport authorities will be helpful in tracking and intercepting the proliferation attempts.
8. Appendix

(1) Key Terms

- Contingency: It refers to all possible events that may bring a major instability to the North Korean regime’s control on its weapons and military personnel. It includes a coup, revolution, civil war, invasion, natural disaster, etc.

- Weapons of Mass Destruction (WMD): According to the US Federal Bureau of Investigation (FBI), WMD is defined “Any weapons that is designed or intend to cause death or serious bodily injury through the release, dissemination, or impact of toxic or poisonous chemicals, or their precursors”

- Conventional weapons: All types of weapons except WMD are categorized as conventional weapons. In this research, North Korea’s main export items such as anti-tank missiles, self-propelled rocket launchers, rifles, and artilleries are conventional weapons.

- Military personnel: Single or multiple personnel with adequate military education and training are considered military personnel. In particular, technicians and scientists with military technology are also military personnel considering the danger they might pose on or against their willingness.

- Proliferation: In this paper, proliferation refers to temporary or permanent change of ownership of the weapon(s) or chain of command for military personnel. It includes tangible assets such as missiles, weapons, parts, and fissile material. In addition, it also included intangible assets including underground construction, missile, and nuclear technology, military expertise including education and training, and mercenary contract as well. In this context, proliferation may take place inside and outside the North Korean territory. However, this research primarily focuses on proliferation outside the North Korean territory.

- Partners: Partners in this paper mean both state and non-state actors that have engaged in any type of proliferation activities regardless of their frequency.

(2) North Korea’s Weapons Export Volume

Stockholm International Peace Research Institute (SIPRI) provides data on North Korean weapons export volume. The earliest record available is export to Democratic Republic of Congo in 1974.

<table>
<thead>
<tr>
<th>North Korean weapons export volume (1967-2016)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DR Congo (1974-1975)</td>
</tr>
<tr>
<td>Egypt (1984-1987)</td>
</tr>
<tr>
<td>Ethiopia (2000)</td>
</tr>
<tr>
<td>Guyana (1980)</td>
</tr>
<tr>
<td><strong>Iran (1982-2004)</strong></td>
</tr>
<tr>
<td>Libya (1980, 1999)</td>
</tr>
<tr>
<td>Madagascar (1975-1979)</td>
</tr>
<tr>
<td>Myanmar (1999)</td>
</tr>
<tr>
<td>Pakistan (1996-1997)</td>
</tr>
<tr>
<td><strong>Syria (1981-2009)</strong></td>
</tr>
<tr>
<td>Tanzania (1980)</td>
</tr>
<tr>
<td>UAE (1989)</td>
</tr>
<tr>
<td>Uganda (1987)</td>
</tr>
<tr>
<td>Viet Nam (1996-1998)</td>
</tr>
<tr>
<td>Yemen (2001-2002)</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Source: SIPRI Arms Transfers Database

Table 2: North Korean weapons export volume

Table 5 displays that Iran and Syria are among the largest importers of North Korean weapons.
(3) North Korea’s Weapons Export Items

In addition to Table 5, Chart 1 provides a more detailed North Korean weapons exports. Weapons marked red are Surface-to-Surface Missiles (SSM) that are not considered conventional weapons.

<table>
<thead>
<tr>
<th>Recipient/supplier (S)</th>
<th>ordered</th>
<th>No. designation</th>
<th>Weapon description</th>
<th>Year(s) of order</th>
<th>Year of delivery</th>
<th>Year of delivered</th>
</tr>
</thead>
</table>
| DR Congo
S: North Korea
(10) | 3 | Project-123/P-4 | Fast attack craft | (1973) | 1974 | 3 |
| (10) | M-46 130mm | Towed gun | (1975) | 1975 | (10) |
| Egypt
S: North Korea
| Ethiopia
S: North Korea
(10) | YW-531/Type-63 | APC | (2000) | 2000 | (10) |
| Guyana
S: North Korea
(10) | D-30 122mm | Towed gun | (1979) | 1980 | 12 |
| (6) | Type-63 107mm | Towed MRL | (1982) | 1983 | (6) |
| Iran
S: North Korea
(100) | BM-21 Grad 122mm | Self-propelled MRL | (1982) | 1982-1987 | (100) |
| (200) | Type-63 107mm | Towed MRL | (1982) | 1982-1986 | (200) |
| (480) | Type-59-1 130mm | Towed gun | (1983) | 1983-1988 | (480) |
| (4000) | 9M14M/AT-3 | Anti-tank missile | 1986 | 1986-1989 | (4000) |
| (3) | Chaho | Patrol craft | (1986) | 1987 | 3 |
| (100) | R-17 Elbrus/Scud-B | SSM | 1987 | 1987-1988 | (100) |
| (10) | Tir | FAC | 2002 | 2002-2004 | (10) |
| Libya
S: North Korea
(10) | BM-21 Grad 122mm | Self-propelled MRL | (1979) | 1980 | (10) |
| (5) | Hwasong-6/Scud Mod-C | SSM | 1995 | 1999 | (5) |
| Madagascar
S: North Korea
(10) | MiG-17 | Fighter aircraft | (1975) | 1975 | 4 |
| (4) | Nampo | Landing craft | (1978) | 1979 | (4) |
| Myanmar
S: North Korea
(16) | Type-59-1 130mm | Towed gun | (1998) | 1999 | (16) |
| Pakistan
S: North Korea
(2) | Nodong | SSM | (1993) | 1996-1997 | (2) |
| Syria
S: North Korea
(100) | Scud Mod-D | SSM | (1996) | 2000-2009 | (100) |
| (10) | Type-63 107mm | Towed MRL | (1981) | 1982 | (10) |
The table and chart display the North Korea’s main proliferation includes conventional weapons and Surface-to-Surface Missile (SSM). However, they do not cover the proliferation of military expertise and WMD. Furthermore, although Pakistan is not one of the largest importers of North Korean weapons according to the SIPRI data, the link between Pyongyang and Islamabad is crucial in understanding the North Korean proliferation. The following timeline shows the history of North Korean proliferation activities with its partners including Pakistan.

(4) Timeline

In addition to the weapons export data, North Korea’s proliferation network dates back to 1967 when North Korea started dispatching military personnel for Syria fighting the Arab-Israeli war. The timeline provides Pyongyang’s proliferation activities that are not displayed in the export data. Proliferation activities include but not limited to exports, visits and dispatch of key figures such as scientists and government officials, intercepts of cargos from North Korean ports, transport of weapons and ammunitions, sanctions imposed on key entities, and major agreements. North Korea’s proliferation activities are comprised with four categories marked Conventional Weapons, Expertise, Missiles, and WMD.
<table>
<thead>
<tr>
<th>Year</th>
<th>Partners</th>
<th>Events</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1967</td>
<td>Syria</td>
<td>- North Korean pilots assisted the Syrian air force during the Arab-Israeli war.</td>
<td>Expertise</td>
</tr>
<tr>
<td>1970</td>
<td>Syria</td>
<td>- Pyongyang dispatched 200 tank crewmen, 53 pilots, and 140 technicians to Syria.</td>
<td>Expertise</td>
</tr>
<tr>
<td>1973</td>
<td>Egypt &amp; Syria</td>
<td>- During the Arab-Israeli War, the DPRK dispatched 30 pilots to Egypt and Syria, who provided training for Syrian pilots to fight against Israel.</td>
<td>Expertise</td>
</tr>
<tr>
<td>1975</td>
<td>Syria</td>
<td>- Pyongyang sent 75 Air Force instructors to Damascus.</td>
<td>Expertise</td>
</tr>
<tr>
<td>1976</td>
<td>Syria</td>
<td>- Pyongyang sent 40 MIG pilots to Damascus.</td>
<td>Expertise</td>
</tr>
<tr>
<td>1980</td>
<td>Iran</td>
<td>- During the Iran-Iraq war (1980-1988), North Korea emerged as one of the major suppliers of weapons to Iran through Pakistan. North Korean ships offloaded their arms cargo in the port of Karachi, Pakistan. North Korea supplied to Iran around 100 Scud B (Hwasong 5) ballistic missiles.</td>
<td>Conventional Weapons &amp; Missile</td>
</tr>
<tr>
<td>1981</td>
<td>Syria</td>
<td>- North Korea’s arms supplies to Syria began in the early 1980s with the export of 50 BM-21 Grad 122mm (BM-11 version) and 10 Type-63 107mm multiple rocket launchers, delivered between 1981 and 1984.</td>
<td>Conventional weapons</td>
</tr>
<tr>
<td>1982</td>
<td>Syria</td>
<td>- North Korea dispatched SOF (special operations forces) servicemen to Syria to provide training for guerrilla operations, some of whom were killed by the Israeli military. In the Lebanon War, the Syrian army successfully and efficiently used the North Korean 122mm BM-11 systems. Reportedly, around 25 North Korean soldiers were killed during this conflict when the Israelis destroyed one of the MRL systems.</td>
<td>Conventional weapons &amp; Expertise</td>
</tr>
<tr>
<td>1984</td>
<td>Syria</td>
<td>- Fifty North Korean military instructors were sent to Syria.</td>
<td>Expertise</td>
</tr>
<tr>
<td>1988</td>
<td>Iran</td>
<td>- North Korea served as a conduit for Chinese transfers of Silkworm anti-ship missiles to Iran to avoid Washington’s censure of Beijing. It included 80 Chinese Silkworms and 40 North Korean Scud Bs as part of the same shipment.</td>
<td>Conventional weapons &amp; Missile</td>
</tr>
<tr>
<td>1989</td>
<td>Pakistan</td>
<td>- Pakistan bought around 12-25 liquid-fueled Nodong ballistic missiles from North Korea.</td>
<td>Missile</td>
</tr>
<tr>
<td>1990</td>
<td>Syria</td>
<td>- Thirty North Korean military instructors were sent to Syria.</td>
<td>Expertise</td>
</tr>
<tr>
<td>1991</td>
<td>Pakistan</td>
<td>- Islamabad sought Pyongyang’s assistance in long-range missile technology to counter India’s testing of the Agni missile.</td>
<td>Missile</td>
</tr>
<tr>
<td>1991</td>
<td>Syria</td>
<td>- Until 1996, North Korea sold Syria 150 Scud Mod-C surface-to-surface missiles (SSM), some for local assembly from kits or for local production. Also, North Korea sold 12, or possibly even 24, 9P117/SS-1 Scud TEL (transporter erector-launcher), supplied between 1991 and 1993.</td>
<td>Missile</td>
</tr>
</tbody>
</table>

29 Ibid.
30 Ibid.
31 Ibid.
34 Bruce Bechtol, “North Korea and Syria: Partners in Destruction and Violence”, 279. (BechtolBruce 2015)
36 Bruce Bechtol, “North Korea and Syria: Partners in Destruction and Violence”, 279. (BechtolBruce 2015)
39 Bruce Bechtol, “North Korea and Syria: Partners in Destruction and Violence”, 279. (BechtolBruce 2015)
<table>
<thead>
<tr>
<th>Year</th>
<th>Country(s)</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>Iran, Pakistan, &amp; Syria</td>
<td>DPRK Deputy Premier and Foreign Minister Kim Yong-nam visited Syria (July 27-30), Iran (July 30-August 3), and Pakistan (August 4-7) to explore areas of bilateral cooperation. 42</td>
</tr>
<tr>
<td></td>
<td>Pakistan</td>
<td>Pakistan’s nuclear and missile scientist, Dr. A. Q. Khan, initiated talks for purchase and transfer of 10-12 1,500-km range Nodong missiles. 43</td>
</tr>
<tr>
<td>1993</td>
<td>Iran &amp; Pakistan</td>
<td>Pakistani and Iranian missile scientists were present for the DPRK’s Nodong missile test on May 29-30. 44</td>
</tr>
<tr>
<td></td>
<td>Pakistan</td>
<td>In December, Pakistan Prime Minister Benazir Bhutto visited Beijing and Pyongyang seeking long-range ballistic missiles capable of striking strategic partners within India. 45</td>
</tr>
<tr>
<td>1994</td>
<td>Iran &amp; Pakistan</td>
<td>In April, a DPRK Foreign Ministry delegation headed by Pak Chungkuk traveled to Pakistan and Iran. 46</td>
</tr>
<tr>
<td></td>
<td>Pakistan</td>
<td>In September, another delegation led by Choe Hui-chong, chairman of the State Commission of Science and Technology visited Pakistan. 47</td>
</tr>
<tr>
<td>1995</td>
<td>Pakistan</td>
<td>In November, a DPRK military delegation led by Marshal Choe Kwang visited missile production facilities in Pakistan and finalized the agreement on the transfer of about 12-25 Nodong missiles with Dr. A. Q. Khan and Dr. Ashfaq Ahmad Khan, head of the Pakistan Atomic Energy Commission. 48</td>
</tr>
<tr>
<td>1996</td>
<td>Pakistan</td>
<td>Taiwan detained a North Korean ship Chusong for misdeclaration of 15 tons of ammonium perchlorate, a key missile fuel component bound for Pakistan. 49</td>
</tr>
<tr>
<td></td>
<td>Syria</td>
<td>North Korea agreed to sell Syria 25 or even 50, Seud Mod-D SSMs, delivered between 2000 and 2004. 50</td>
</tr>
<tr>
<td>1997</td>
<td>Iran</td>
<td>A “joint team” of Chinese and North Korean technicians went to Iran to assist in Tehran’s ballistic missile efforts. The Iranian Shahab-3 and Shahab-4 missiles are variants of North Korean and Chinese missiles. 51</td>
</tr>
<tr>
<td></td>
<td>Pakistan</td>
<td>Dr. A.Q. Khan made three secret visits to North Korea. 52 The Pakistan government began paying for Nodong missiles by providing nuclear expertise. 53</td>
</tr>
<tr>
<td>1998</td>
<td>Pakistan</td>
<td>Pakistan test fired a Nodong missile renamed Ghauri on April 6, prompting the US State Department to impose sanctions against Changgwang Sinyong Corporation (CSC) and Pakistan’s Khan Research Laboratories (KRL) on April 24. 54 One week after Pakistan’s first nuclear tests, Kim Sa-nae, wife of a senior DPRK diplomat, was shot dead in Islamabad. A special flight transported the coffin that carried her body also included a sample gas centrifuge used to enrich uranium necessary to produce nuclear weapons. 55</td>
</tr>
</tbody>
</table>

42 Ibid. It is estimated that Kim sought to enhance the missile and nuclear technology cooperation between Pyongyang and the three countries.


44 Ibid.


46 Ibid. Multiple visits of high profile figures are interpreted as Pyongyang’s effort to boost cooperation in missile and nuclear technology.

47 Ibid.

48 Ibid.

49 Ibid.


53 Ibid.

54 Ibid.

55 Ibid.
<table>
<thead>
<tr>
<th>Year</th>
<th>Country</th>
<th>Event Description</th>
</tr>
</thead>
</table>
| 1999 | Pakistan | - In June, India caught a North Korean ship bound for Pakistan loaded with 300 tons of equipment and engineering drawings for a plant to manufacture the 300-km range Hwasong 5 and the 500-plus-km range Hwasong 6, both derived from the Scud.  
- On September 16, Robert Walpole, national intelligence officer for Strategic and Nuclear Program, testified to the US Senate that Pakistan’s Ghauri missile was flight tested with North Korean assistance.  
- On September 16, Robert Walpole, national intelligence officer for Strategic and Nuclear Program, testified to the US Senate that Pakistan’s Ghauri missile was flight tested with North Korean assistance.  
- In June, India caught a North Korean ship bound for Pakistan loaded with 300 tons of equipment and engineering drawings for a plant to manufacture the 300-km range Hwasong 5 and the 500-plus-km range Hwasong 6, both derived from the Scud.  
- On September 16, Robert Walpole, national intelligence officer for Strategic and Nuclear Program, testified to the US Senate that Pakistan’s Ghauri missile was flight tested with North Korean assistance.  |
| 2000 | Iran | - IRGC tests Shahab-3 missile equipped with a North Korean engine.  
- US State Department sanctioned Changgwang Sinyong, a North Korean company, and Iran's Ministry of Defense Armed Forces Logistics (MODAFL), Aerospace Industries Organization (ADIO), Shahid Hemat Industrial Group (SHIG) and SANAM Industrial Group for missile technology proliferation.  
- In May, North Korea shipped its first set of Scud D systems to Syria. This was immediately followed up by a test launch of the Scud D during September of 2000.  
- Joong-Ang Ilbo revealed that an Iranian freighter visited the North Korean harbors of Nampo and Songnim multiple times in February and November 2002, where it loaded missiles and rocket fuel destined for Iran.  |
| 2000 | Syria | - In May, North Korea shipped its first set of Scud D systems to Syria. This was immediately followed up by a test launch of the Scud D during September of 2000.  
- Joong-Ang Ilbo revealed that an Iranian freighter visited the North Korean harbors of Nampo and Songnim multiple times in February and November 2002, where it loaded missiles and rocket fuel destined for Iran.  |
| 2000 | Hamas & Hezbollah | - IDF captured a North Korean vessel carrying weapons (rockets, mortar shells, anti-tank missiles, anti-tank mines, AK-47s, sniper rifles, and ammunition) for Hamas and Hezbollah.  
- IRGC tests Shahab-3 missile equipped with a North Korean engine.  
- US State Department sanctioned Changgwang Sinyong, a North Korean company, and Iran's Ministry of Defense Armed Forces Logistics (MODAFL), Aerospace Industries Organization (ADIO), Shahid Hemat Industrial Group (SHIG) and SANAM Industrial Group for missile technology proliferation.  
- In May, North Korea shipped its first set of Scud D systems to Syria. This was immediately followed up by a test launch of the Scud D during September of 2000.  
- Joong-Ang Ilbo revealed that an Iranian freighter visited the North Korean harbors of Nampo and Songnim multiple times in February and November 2002, where it loaded missiles and rocket fuel destined for Iran.  |
| 2002 | Iran | - In July, US satellites spotted a US-gifted Pakistani C-130 Hercules cargo plane picking up missile parts from North Korea at the height of India-Pakistan tensions.  
- In October, US officials publicly confirmed that Islamabad provided gas centrifuges for Pyongyang’s uranium enrichment program, in return for North Korea’s supply of Nodong missiles to Pakistan.  |
| 2002 | Pakistan | - In July, US satellites spotted a US-gifted Pakistani C-130 Hercules cargo plane picking up missile parts from North Korea at the height of India-Pakistan tensions.  
- In October, US officials publicly confirmed that Islamabad provided gas centrifuges for Pyongyang’s uranium enrichment program, in return for North Korea’s supply of Nodong missiles to Pakistan.  |
| 2002 | Syria | - Kim Yong Nam visited Syria to sign an agreement for scientific cooperation. The U.S. and the IAEA believe that this agreement means Pyongyang stepped up efforts to assist Assad in building a nuclear reactor, which looks like North Korea's Yongbyon nuclear reactor.  
- Joong-Ang Ilbo revealed that an Iranian freighter visited the North Korean harbors of Nampo and Songnim multiple times in February and November 2002, where it loaded missiles and rocket fuel destined for Iran.  
- In July, US satellites spotted a US-gifted Pakistani C-130 Hercules cargo plane picking up missile parts from North Korea at the height of India-Pakistan tensions.  
- In October, US officials publicly confirmed that Islamabad provided gas centrifuges for Pyongyang’s uranium enrichment program, in return for North Korea’s supply of Nodong missiles to Pakistan.  
- In October, US officials publicly confirmed that Islamabad provided gas centrifuges for Pyongyang’s uranium enrichment program, in return for North Korea’s supply of Nodong missiles to Pakistan.  |
| 2002 | Yemen | - US and Spanish forces intercepted and then released a Yemen-bound North Korean vessel also carrying Scud missiles.  
- Joong-Ang Ilbo revealed that an Iranian freighter visited the North Korean harbors of Nampo and Songnim multiple times in February and November 2002, where it loaded missiles and rocket fuel destined for Iran.  
- In July, US satellites spotted a US-gifted Pakistani C-130 Hercules cargo plane picking up missile parts from North Korea at the height of India-Pakistan tensions.  
- In October, US officials publicly confirmed that Islamabad provided gas centrifuges for Pyongyang’s uranium enrichment program, in return for North Korea’s supply of Nodong missiles to Pakistan.  |
| 2003 | Iran | - North Korean nuclear specialists visited Iran in 2003 to develop nuclear warheads for North Korean Nodong (or Shahab) missiles. Iran was reported to have offered shipments of oil and natural gas to North Korea to secure this joint development of nuclear warheads.  
- North Koreans were seen at Iranian nuclear facilities.  
- Joong-Ang Ilbo revealed that an Iranian freighter visited the North Korean harbors of Nampo and Songnim multiple times in February and November 2002, where it loaded missiles and rocket fuel destined for Iran.  
- In July, US satellites spotted a US-gifted Pakistani C-130 Hercules cargo plane picking up missile parts from North Korea at the height of India-Pakistan tensions.  
- In October, US officials publicly confirmed that Islamabad provided gas centrifuges for Pyongyang’s uranium enrichment program, in return for North Korea’s supply of Nodong missiles to Pakistan.  
- In October, US officials publicly confirmed that Islamabad provided gas centrifuges for Pyongyang’s uranium enrichment program, in return for North Korea’s supply of Nodong missiles to Pakistan.  |

---

56 Ibid.
57 Ibid.
59 Ibid.
64 Ibid.
66 Ibid.
<table>
<thead>
<tr>
<th>Year</th>
<th>Region</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>Syria &amp; Hezbollah</td>
<td>Assad met with North Korean officials in Damascus and requested North Korean assistance in helping Hezbollah to design and construct underground military installations.</td>
</tr>
<tr>
<td>2005</td>
<td>Syria</td>
<td>Several Syrian technicians from the Syrian Scientific Studies and Research Center (SSRC)—were killed on a train in an apparent attempt to kill Kim Jong Il—who was not on the train.</td>
</tr>
<tr>
<td>2006</td>
<td>Hezbollah</td>
<td>North Korean assisted Hezbollah construct bunkers and tunnels, the IRGC apparently made further use of North Korea’s skills in developing underground military facilities.</td>
</tr>
</tbody>
</table>

68 Ibid.
72 Ibid.
73 Manyin, “North Korea: Back on the Terrorism List?”. (ManyinMark 2010)
74 Ibid.
76 Shichor, Yitzhak “Evil from the North: The DPRK-Syria Axis and its Strategic Dimensions”, 79. (ShichorYitzhak 2007)
78 Ibid.
<table>
<thead>
<tr>
<th>Year</th>
<th>Country</th>
<th>Details</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>Iran</td>
<td>National Council of Resistance of Iran, an exile opposition group asserted that North Korean experts were working at the Memot Missile Industries Complex in Iran to develop intermediate range missile with a range of 1,900 miles and the Shahab 4 missile. Later in 2006, it was reported that North Korea had shipped its new Musudan intermediate range missile. IRGC Chief Commander publicly acknowledged for the first time that it had obtained missiles from North Korea during the Iran-Iraq war in the 1980s, but added that it no longer needed Pyongyang’s assistance.</td>
<td><a href="http://fas.org/sgp/crs/row/RL30613.pdf">ManyinMark 2010</a></td>
</tr>
<tr>
<td>2006</td>
<td>Iran</td>
<td>U.S. Secretary of Defense Robert Gates stated in November 2007 that North Korea had supplied Iran with missiles with a range of 1,562 miles (probably the Musudan).</td>
<td><a href="http://fas.org/sgp/crs/row/RL30613.pdf">ManyinMark 2010</a></td>
</tr>
<tr>
<td>2007</td>
<td>Syria</td>
<td>Several North Korean workers allegedly killed in the Israeli airstrikes on the Syrian nuclear reactor. Dozens of pictures from inside the facility showed North Korean workers in the facility. July 27, several Iranian advisors, Syrian technicians, and North Korean advisors were reportedly killed when they were loading a chemical warhead controlling VX and Sarin onto a Scud missile for a test-launch.</td>
<td><a href="http://www.newyorker.com/magazine/2012/09/17/the-silent-strike">HaydenMichael 2012</a></td>
</tr>
<tr>
<td>2007</td>
<td>Hezbollah</td>
<td>A Lebanese government official in early 2008 noted that North Korea assisted Hezbollah to construct new underground military facilities north of the Litani River in Lebanon.</td>
<td><a href="http://www.timesofisrael.com/israel-uses-17-tons-of-explosives-to-destroy-syrian-reactor/">KalmanAaron 2012</a></td>
</tr>
<tr>
<td>2008</td>
<td>Iran</td>
<td>National Council of Resistance of Iran claimed that the Iranian Defense Ministry has a secret facility at Khojir near Tehran, and North Korean specialists are at this facility to develop nuclear warheads for intermediate range ballistic missiles. The Sankei Shimbun report of July 12, 2008, also described two visits of high-level Iranian officials to North Korea in February and May. The Iranian delegation included officials of Iran’s Atomic Energy Organization and National Security Council. North Korea and Iran reportedly carried out joint tests of the Musudan, and reportedly signed an agreement for the continued North Korean supply of Musudan technology to Iran.</td>
<td><a href="http://www.timesofisrael.com/israel-uses-17-tons-of-explosives-to-destroy-syrian-reactor/">KalmanAaron 2012</a></td>
</tr>
<tr>
<td>2008</td>
<td>Iran or Syria, (Hezbollah &amp; Hamas)</td>
<td>North Korean cargo filled with rocket fuses bound for Bandar Abbas in Iran were seized by an unspecified United Nations Member State, the cargo was en route to Iran or Syria, where Hamas or Hezbollah could have been the end-users.</td>
<td><a href="http://www.timesofisrael.com/israel-uses-17-tons-of-explosives-to-destroy-syrian-reactor/">KalmanAaron 2012</a></td>
</tr>
<tr>
<td>2008</td>
<td>Syria</td>
<td>Former Director of the CIA, Michael Hayden, said the plutonium reactor built by the North Koreans for the Syrians and destroyed by the Israeli Air Force in September 2007, magazine says”.</td>
<td><a href="http://www.timesofisrael.com/israel-uses-17-tons-of-explosives-to-destroy-syrian-reactor/">KalmanAaron 2012</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Country</th>
<th>Event</th>
<th>Type</th>
</tr>
</thead>
</table>
| 2009 | Iran             | - Iranian officials are reportedly present when North Korea launches a long-range rocket (Unha-2) in April and detonates a nuclear device in May. 92  
- UAE detained a vessel from the DPRK to Bandar Abbas, Iran. The cargo included detonators, rocket launchers, munitions, and explosives including ammunition for rocket-propelled grenade (RPG) weapons.93  
- The Japanese Kyodo news agency reported in December that North Korea failed to supply Iran with electronic components for the Musudan in 2009, causing Iran to postpone a test launch of the missile.94 | Conventional weapons, Missile, & WMD |
| 2009 | Syria            | - In March, Israel intercepted 500 tons of North Korean weapons on its way from Iran to Syria. Weapons on board included: mortars, rockets, ammunition for AK-47s, hand grenades, anti-tank shells, and rocket fuses.95 North Korea has been one of the primary weapon suppliers to Syria for decades.96  
- In October, the ROK seized North Korean-origin chemical warfare protective suits destined for Syria.97 | Conventional weapons          |
| 2010 | Hezbollah        | - With the Pyongyang-backed Syrian assistance, Hezbollah launched two Scud D missiles with a range of 700 kilometers.98 | Missile                      |
| 2010 | Iran             | - North Korean aircraft loaded with weapons (rockets, fuses, rocket-propelled grenades and missile parts) was seized in Thailand. According to Bloomberg News, which obtained a copy of the Thai government report, the cargo was destined for Mahraab Airport in Tehran.99 | Conventional weapons          |
| 2010 | Republic of Congo| - In February, South Africa seized North Korean-origin spare tank parts destined for the Republic of Congo.100 | Conventional weapons          |
| 2011 | Myanmar          | - In June 2011, the M/V Light, a merchant vessel bound for Myanmar suspected of carrying military-related cargo, returned to North Korea after refusing a U.S. Navy inspection request.101 | Conventional weapons          |
| 2011 | Palestine        | - Israel Defense Forces captured a vessel and found anti-ship missiles and associated launchers, mortar shells, radar systems, AK-47s ammunition. These, the IDF said, were Gaza-bound and Iranian-made. 102 | Conventional weapons          |
| 2012 | Iran             | - A group of 12 officials from the Shahid Hemmat Industrial Group (SHIG), which is involved in Iran's ballistic missile program, reportedly attended a failed rocket launch in North Korea.103  
-North Korea-Iran Science Cooperation Agreement in Sept 2012 controls the | Missile & WMD                 |

96 Shichor, Yitzhak “Evil from the North: The DPRK-Syria Axis and its Strategic Dimensions”, 79 (ShichorYitzhak 2007)  
97 Ibid.  

similar wording—including provisions for “exchange of expertise” and “joint use of scientific research equipment”—as the scientific agreement signed between North Korea and Syria in 2002.  

- Iran and North Korea sign a science and technology cooperation agreement. Supreme Leader Ali Khamenei declares that the two countries have “common enemies”.  

<table>
<thead>
<tr>
<th>Year</th>
<th>Country</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>Syria</td>
<td>Syrian Observatory for Human Rights revealed that North Korean military officers were assisting the Assad regime suppressing Syrian rebel groups. North Korean soldiers are said to have been providing Assad’s troops with logistical support, creating operational plans for them and even supervising Syrian government artillery attacks against the opposition.</td>
</tr>
<tr>
<td>2014</td>
<td>Hamas</td>
<td>During the 2014 Gaza war, Hamas militants launched surprise attacks from allegedly North Korean-style tunnels that crossed under Israel's security fence and into Israel.</td>
</tr>
<tr>
<td>2014</td>
<td>Syria</td>
<td>Photos showed ISIS militants using a North Korean variant of the Iгла-1E MAN Portable Air-Defense System (MANPADS), which means they captured the North Korean weapons provided to the Assad’s forces.</td>
</tr>
<tr>
<td>2015</td>
<td>Iran</td>
<td>Seven-person North Korean Defense Ministry team was in Iran during the last week of April. This was the third time in 2015 that North Koreans had been to Iran and a nine-person delegation was due to return in June, according to NCRI (National Council of Resistance of Iran).</td>
</tr>
<tr>
<td>2016</td>
<td>Syria</td>
<td>Russian media agency TASS covered that Two North Korean units called Chalma-1 and Chalma-7 are fighting for Assad regime in Syria.</td>
</tr>
</tbody>
</table>

106 MICHAEL FREUND, “Indeed, North Korea is directly linked to just about every menace facing Israel, and it is time for the Jewish state to do something about this threat”. The Jerusalem Post, August 25, 2015, http://www.jpost.com/Opinion/Fundamentally-Freund-The-North-Korean-threat-to-Israel-413133 (FREUNDMICHAEL 2015)  
9. References


FREUND, MICHAEL. "Indeed, North Korea is directly linked to just about every menace facing Israel, and it is time for the Jewish state to do something about this threat." The Jerusalem Post. 8 25, 2015. http://www.jpost.com/Opinion/Fundamentally-Freu (accessed 5 20, 2017).


