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Inter-Korean Military Confidence Building After 2003

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Abstract

Tensions on the Korean Peninsula remain high despite a long-term strategy by South Korea to increase inter-Korean exchanges in economics, culture, sports, and other topics. This is because the process of reconciliation has rarely extended to military and security topics and those initiatives that were negotiated have been ineffective. Bilateral interactions must include actions to reduce threats and improve confidence associated with conventional military forces (land, sea, and air) as well as nuclear, chemical, and biological activities that are applicable to developing and producing weapons of mass destruction (WMD). The purpose of this project is to develop concepts for inter-Korean confidence building measures (CBMs) for military and WMD topics that South Korea could propose to the North when conditions are right. This report describes the historical and policy context for developing security-related CBMs and presents an array of bilateral options for conventional military and WMD topics within a consistent framework. The conceptual CBMs address two scenarios: 1) improved relations where construction of a peace regime becomes a full agenda item in inter-Korean dialogue, and 2) continued tense inter-Korean relations. Some measures could be proposed in the short term under current conditions, others might be implemented in a series of steps, while some require a higher level of cooperation than currently exists. To support decision making by political leaders, this research focuses on strategies and policy options and does not include technical details.

ACRONYMS

ABACC	Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials
ACBM	The Agreement on Confidence Building Measures in the Military Field Along the Line of Actual Control in the China-India Border Areas (1996)
AMAS	South Atlantic Maritime Area
AMPT	Agreement on the Maintenance of Peace and Tranquility Along the Line of Control (1993) in the India-China Border Areas
APEC	Asia-Pacific Economic Council
ARF	Asian Regional Forum
BTWC	Biological and Toxin Weapons Convention
BW	biological weapons
CBM	confidence building measure
CFC	Combined Forces Command (US-ROK)
CFE	Conventional Forces in Europe
CMC	Cooperative Monitoring Center (of Sandia National Laboratories)
CPC	Conflict Prevention Center
CSBM	confidence and security building measures
CSCAP	Council for Security Cooperation in the Asia-Pacific
CSCE	Commission on Security and Cooperation in Europe
CTBT	Comprehensive Nuclear Test Ban Treaty
CW	chemical weapons
CWC	Chemical Weapons Convention
DGMO	Directors General of Military Operations (India, Pakistan)
DMZ	demilitarized zone
DPRK	Democratic People's Republic of Korea
EEZ	exclusive economic zone
EU	European Union
EURATOM (or EAEC)	European Atomic Energy Community
IAEA	International Atomic Energy Agency
ICBM	Intercontinental Ballistic Missile
INCSEA	Prevention of Incidents On and Over the High Seas
INF	Intermediate Range Nuclear Forces Treaty
JFC	Joint Fishing Commission
JMC	Joint Military Commission
JNCC	Joint Nuclear Control Commission

JWG	Joint Working Group on Boundary Issues
JZEV	Joint Zone Enforcement Vessels
KAERI	Korean Atomic Energy Research Institute
KEDO	Korea Energy Development Organization
KIDA	Korea Institute for Defense Analyses
KWP	Korea Workers' Party
LAC	Line of Actual Control (Kashmir)
LWR	light water reactor
MAC	Military Armistice Committee
MDL	Military Demarcation Line
MND	National Intelligence Service
MTCR	Missile Technology Control Regime
MW	megawatt of electrical power
NATO	North Atlantic Treaty Organization
NDC	National Defense Commission, North Korea
NEACD	Northeast Asia Cooperation Dialogue
NEACPC	Northeast Asia Conflict Prevention Center
NNL	Northern Limit Line
NNSC	Neutral Nations Supervisory Committee
NPR	Nuclear Posture Review (US)
NPT	Nuclear Nonproliferation Treaty
NRRC	Nuclear risk reduction center
OPCW	Organization for the Prohibition of Chemical Weapons
OSCE	Organization for Security and Cooperation in Europe
PDMA	Agreement Between the USA and the USSR on the Prevention of Dangerous Military Activities
PKO	peacekeeping operations
ROK	Republic of Korea
SAR	Search and Rescue
SCCC	Joint System for Accounting and Control of Nuclear Materials (Brazil-Argentina)
SOF	special operations forces
START	Strategic Arms Reduction Treaty (US-USSR)
TCNC	Technology Center for Nuclear Control (ROK)
UK	United Kingdom
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea

US

United States

USFK

US Forces Korea

WHO

World Health Organization

WMD

weapons of mass destruction

CONTENTS

1. Introduction	15
1.1. Purpose	15
1.2. Background.....	17
1.3. Assumptions.....	18
2. Environment for Inter-Korean Dialogue and Military Confidence Building	20
2.1. North Korean Reforms.....	20
2.1.1. Economic Reforms	20
2.1.2. Conciliatory Stance to the South.....	20
2.1.3. New Flexibility in Foreign Policy.....	21
2.1.4. Assessment of Northern Reforms	22
2.2. North Korea's WMD Programs and Their Effect on Inter-Korean Relations.....	24
2.2.1. Missiles	24
2.2.2. Chemical and Biological Weapons	25
2.2.3. Nuclear Weapons	27
2.3. Prospects to Resolve the Current Confrontation.....	31
3. International Precedents for Military and Nuclear CBMs.....	34
3.1. The Concept of Confidence Building Measures	34
3.2. Implementation of CBMs	36
3.3. Applicability of CBM Precedents to the Korean Peninsula	37
4. Military Confidence Building Measures between North and South Korea	40
4.1. Common Areas Affecting Military Confidence Building	41
4.1.1. Sources of Tension	41
4.1.2. Options for Confidence Building Measures in Common Areas.....	42
4.2. Ground Forces	44
4.2.1. Sources of Tension	44
4.2.2. Confidence Building Measures for Ground Forces.....	45
4.3. Naval Forces	60
4.3.1. Sources of Tension	60
4.3.2. Confidence Building Measures for Naval Forces	60
4.4. Air Forces.....	64
4.4.1. Sources of Tension	64
4.4.2. Confidence Building Measures for Air Forces.....	66
5. Weapons of Mass Destruction	71
5.1. Weapons of Mass Destruction – Nuclear	71

5.1.1. Sources of Tension	71
5.1.2. Options for Confidence Building in Nuclear Topics	73
5.2. Weapons of Mass Destruction – Chemical	77
5.2.1. Sources of Tension	77
5.2.2. Options for Confidence Building in Chemical Weapon Topics	77
5.3. Weapons of Mass Destruction – Biological	79
5.3.1. Sources of Tension	79
5.3.2. Options for Confidence Building in Biological Topics	79
5.4. Weapons of Mass Destruction – Ballistic Missiles	82
5.4.1. Sources of Tension	82
5.4.2. Options for Confidence Building in Missile Topics	83
6. Conclusions	85
Appendix A: International Precedents for Confidence Building Measures.....	87
A.1 Precedents – Europe, The Cold War Period	87
A.1.1. Helsinki Final Act (1975).....	87
A.1.2. Stockholm Document (1986)	88
A.1.3. Vienna Documents (1990, 1992, 1994).....	89
A.2. Precedents: Post Cold War in Europe	90
A.2.1. Agreement for Peace in Bosnia and Herzegovina (1995)	90
A.2.2. The Open Skies Treaty (1992)	91
A.2.3. Regional Nuclear Cooperation (1958)	91
A.3. Precedents – Southern Asia.....	92
A.3.1. India-Pakistan	92
A.3.2. India-China	94
A.4. Precedents – The Middle East.....	96
A.4.1. Israel-Egypt.....	96
A.4.2. Israel-Syria	97
A.4.3. Israel-Palestine	98
A.4.4. Israel-Jordan (1994)	99
A.5. Precedents – Latin America	99
A.5.1. Multilateral Regional Agreements	99
A.5.2. Sub-Regional Agreements.....	100
A.5.3. Argentina-Chile (1984)	101
A.5.4. Ecuador-Peru (1998)	102
A.5.5. Argentina–United Kingdom (UK).....	103

A.5.6. Argentina-Brazil – Nuclear Transparency and Controls	105
A.6. Precedents – International Maritime Cooperation	108
A.6.1. The US-USSR Incident at Sea Agreement (1972)	108
A.6.2. Other Bilateral Incident at Sea Agreements	109
A.6.3. United Kingdom – Iceland (1976)	109
A.6.4. International Fishing Agreements in Asia	110
Appendix B: Structure of a Conceptual North-South Joint Fishing Venture	112

FIGURES

Figure 1: UN Secretary-General Kofi Annan walking through the buffer zone in Nicosia, Cyprus on 16 May 2002 with UNFICYP Force Commander Lt. Gen. Hwang Jin Ha.....	49
Figure 2: Ukrainian Open Skies Treaty AN-30 aircraft	57
Figure 3: 1.0 m resolution Image from the Ikonos Satellite	58
Figure 4: M-47 and T-54 Tanks.....	59
Figure 5: Example of ROK Navy Un Bong Class Landing Ship.....	64
Figure 6: F-5 and MIG-19 Aircraft	68
Figure 7 The KEDO construction site in Kumho, North Korea in 2002	72
Figure 8: Map of NLL and conceptual joint fishing zones	113
Figure 9: ROK Navy Kilurki-class patrol boat	114

TABLES

Table 1: Military Forces on the Korean Peninsula.....	40
Table 2: Comparison of Northeast Asian Air Forces	65

Executive Summary

Tensions on the Korean Peninsula are currently high. Relations between the US and the Democratic People's Republic of Korea (DPRK) declined dangerously as a result of the DPRK nuclear weapon development activities, its breaking of the Agreed Framework, and its withdrawal from the Nuclear Non-proliferation Treaty (NPT). Although the US has stated its intention to resolve the problem of the DPRK's nuclear weapons program diplomatically and not to invade North Korea, any conflict would undoubtedly involve the Republic of Korea (ROK). Damage to the relations between the two Koreas has not been as great as the decline in DPRK-US relations. Economic and cultural interactions continue, including the re-establishment of highway and railroad links. Bilateral military relations, however, remain very limited, and incidents still occur along the demilitarized zone and Northern Limit Line (NLL).

In spite of the increased inter-Korean exchanges in economics, culture, sports, and other areas since the Kim Dae-jung government entered office, military confrontation continues into the Roh Moo-hyun administration because the Pyongyang regime has not extended the new South-North relationship to military affairs. The Korean Peninsula remains the most militarized area in the world with armed forces of 2 million confronting each other along the 1953 truce line. The naval clashes in the West Sea in 1999 and 2002 and periodic shootings and violations within the demilitarized zone (DMZ) are evidence that military affairs are still the central problem between the two Koreas. These events have undermined the ROK Sunshine Policy.

Policy strategists in Asia and the US, such as former US ambassador to the ROK James Laney, have suggested that the ROK, US, and Japan seek to negotiate a "grand bargain" with the DPRK to resolve the security concerns of all parties. South Korea is North Korea's largest provider of aid and its second-largest trading partner and therefore has considerable leverage with the North. South Korea can develop confidence and security building measures (CSBM) focusing on military and WMD-related topics that would help facilitate the negotiation of a future grand bargain. These CSBMs would be intended to reduce current tensions, demonstrate good faith on all sides, establish precedents for cooperation, build experience for arms control/reduction, and encourage the North to join the international community.

The purpose of this project is to develop concepts for inter-Korean military and WMD CSBMs that the ROK government might propose to the DPRK. The options for CSBMs identified by the project for ground, naval, and air forces, and weapons of mass destruction build on past inter-Korean talks and international CSBM experience. Some could be

implemented in the short term to extend South-North communication to security topics while building the foundation for a “grand bargain” while others require more advanced cooperation. This research is executed jointly by the Korea Institute for Defense Analyses (KIDA) of the ROK and the Cooperative Monitoring Center (CMC) of the US Department of Energy’s Sandia National Laboratories to demonstrate the common ROK-US interests on the Korean Peninsula and reconfirm the traditional friendship and policy collaboration between the two nations. To support decision-making by political leaders, this research focuses on strategies and policy options and does not include technical details.

This research postulates two scenarios for future inter-Korean relations. The first scenario assumes that military affairs, including the reduction of military tension and the construction of a peace regime, become full agenda items for inter-Korean dialogue. Both US-DPRK and inter-Korean relations then improve as a result of the North's reforms and a comprehensive solution to the problem of WMDs. The second scenario assumes a continuation in current inter-Korean relations (status quo), without significant improvement but also without degradation.

This research concentrates on the first scenario (improved relations) and presents suggestions and recommendations for inter-Korean military CSBM negotiation with the hope that they can contribute to the decision-making process of the governments in Seoul and Washington. Many of the simpler options identified in this research can still contribute to the decision-making process in case of the second scenario (status quo). These modest suggestions and recommendations for first steps in stabilizing and improving security relations with North Korea can be useful even if relations do not improve rapidly and the reform process in the North is slow.

The definition of confidence building measures (CBMs) varies from a narrow focus on operational military activities to a broad interpretation that includes any political, economic, or military action that builds confidence. Confidence building is most frequently seen as a process of communication between governments concerning security-related matters. A commonly used definition for CBMs is: both formal and informal measures, whether unilateral, bilateral, or multilateral, that address, prevent, or resolve uncertainties among states, including both military and political elements. Such measures contribute to a reduction of uncertainty, misperception, and suspicion associated with military activities and thus help to reduce the possibility of incidental or accidental war. Thus, CBMs help manage problems and avoid confrontations, but they are not the same as comprehensive security frameworks or joint

defense arrangements. CBMs are viewed as precursors to arms control and act as tools designed to work toward the day when solution-oriented diplomacy can work.

The options for CSBMs identified by the project for ground, naval, and air forces, and weapons of mass destruction build on past inter-Korean talks and international CSBM experience. Options are presented in the following categories:

Options for CBMs in General Topics

Options for CBMs for Ground Forces:

- Nonmilitary cooperation with Military implications
- Military-to Military Contacts
- Safety and Prohibition of Dangerous Military Activities
- Communication, Control and Transparency
- Security Building Measures and Arms Control.

Options for CBMs for Naval Forces:

- Safety and Prohibition of Dangerous Military Activities
- Military-to-Military Contacts
- Communication, Control and Transparency
- Security Building Measures and Arms Control

Options for CBMS for Air Forces:

- Safety and Prohibition of Dangerous Military Activities
- Security Building Measures and Arms Control

Options for CBMs for Nuclear WMD

Options for CBMs for Chemical WMD

Options for CBMs for Biological WMD

Options for CBMs for Ballistic Missiles

This study suggests a framework of policy development by government officials to consider. Some could be implemented in the short term to extend South-North communication to security topics. Many of the CBMs presented build upon each other and can be implemented in phases. To support decision making by political leaders, this research focuses on strategies

and policy options and does not include technical details. Future analysis directed to developing a strategy framework to prioritize and integrate options for CBMs would be useful.

Reducing tensions on the Korean Peninsula and building a solid foundation for reconciliation will require a balance between the South Korean goal of reunification and its requirements for security. In spite of recent differences of opinion with the US and the need to update the alliance, cooperation with the US is essential. The ROK must eliminate inconsistency between national cooperation and international cooperation. ROK policy to the North must be in harmony with its foreign policy because engagement with the North will only bear fruit if it is in the interest of both Koreas and supported by interested countries.

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1. Introduction

1.1. Purpose

Tensions on the Korean Peninsula are currently at a high point. Promising developments in 2002 have been replaced by a rapidly evolving crisis. Relations between the US and the Democratic People's Republic of Korea (DPRK) declined dangerously as a result of the DPRK nuclear weapon development activities, its breaking of the Agreed Framework, and its withdrawal from the Nuclear Non-proliferation Treaty (NPT). The DPRK claims that the crisis is solely a dispute with the US and has tried to create a split in the ROK-US alliance. The US argues that the DPRK's actions are a threat to the whole world and has sought to refer the matter to the United Nations (UN) Security Council for multilateral resolution. Although the US has stated its intention to resolve the problem of the DPRK's nuclear weapons program diplomatically and not to invade North Korea, any conflict would undoubtedly involve the Republic of Korea (ROK).

Damage to the relations between the two Koreas has not been as great as the decline in DPRK-US relations. Economic and cultural interactions continue, including the re-establishment of highway and railroad links. Bilateral military relations, however, remain very limited, and incidents still occur along the demilitarized zone and Northern Limit Line (NLL). The Kim Dae-jung government stated its intent to resolve the North's nuclear weapon activities peacefully and not to cut economic ties with the North. The new Roh Moo-hyun government has pledged to continue this policy. Some members of the previous and current governments have spoken of the ROK taking a "mediating" role between the US and the DPRK.

Half a century after the end of the Korean War, there is still no political structure for permanent peace on the Korean Peninsula. The Armistice Agreement was intended to be a temporary measure, and the signatories are still technically at war. Japan and the US do not have diplomatic relations with the DPRK. The 1994 US-DPRK Agreed Framework is not a treaty. Bilateral South-North agreements signed over the years were envisioned as confidence building steps toward reconciliation – not treaties.

Policy strategists in Asia and the US, such as former US ambassador to the ROK James Laney, have suggested that the ROK, US, and Japan seek to negotiate a "grand bargain" with the DPRK to resolve the security concerns of all parties.^{1,2} Such an agreement would link North

1 Michael O'Hanlon, "Impasse in Korea: A Conventional Arms-Accord Solution?" *Survival*, Spring 1999.

Korean programs for weapons of mass destruction (WMD), missiles, and conventional forces with arms control, lifting of sanctions, economic aid, diplomatic recognition, and formal peace treaties. The allies (and the US in particular) would need to make such an agreement attractive to the North. A key component of a grand bargain would be a security guarantee by the US – either unilaterally or in partnership with other interested powers. For its part, the North would reciprocate by giving up its programs to obtain WMD, end long-range missile development and production, and reduce its military forces to levels consistent with a defensive rather than an offensive strategy. Verification of commitments is essential and would be linked to the promised economic and diplomatic benefits.

South Korea is North Korea's largest provider of aid and its second-largest trading partner and therefore has considerable leverage with the North. South Korea can develop confidence and security building measures (CSBM) focusing on military and WMD-related topics that would help facilitate the negotiation of a future grand bargain. These CSBMs would be intended to reduce current tensions, demonstrate good faith on all sides, establish precedents for cooperation, build experience for arms control/reduction, and encourage the North to join the international community. Consequently, preparation for inter-Korean negotiation to reduce threats from conventional forces and WMDs is one of the most urgent tasks for the new ROK government. In addition, it is important to maintain the strength of the ROK-US alliance by improving policy coordination and collaboration in the preparation for dialogues with the DPRK.

The purpose of this project is to develop concepts for inter-Korean military and WMD CSBMs that the ROK government might propose to the DPRK. The options for CSBMs identified by the project for ground, naval, and air forces, and weapons of mass destruction build on past inter-Korean talks and international CSBM experience. Some could be implemented in the short term to extend South-North communication to security topics while building the foundation for a "grand bargain" while others require more advanced cooperation. This research is executed jointly by the Korea Institute for Defense Analyses (KIDA) of the ROK and the Cooperative Monitoring Center (CMC) of the US Department of Energy's Sandia National Laboratories to demonstrate the common ROK-US interests on the Korean Peninsula and reconfirm the traditional friendship and policy collaboration between the two nations. To support decision-making by political leaders, this research focuses on strategies

2 James Laney and Jason Shaplen, "How to Deal With North Korea," *Foreign Affairs*, March/April 2003, Volume 82, No. 2.

and policy options and does not include technical details. The final report will be presented in both the US and the ROK, including publication, briefings, and conference presentations.

1.2. Background

In spite of the increased inter-Korean exchanges in economics, culture, sports, and other areas since the Kim Dae-jung government entered office, military confrontation continues because the Pyongyang regime has not extended the new South-North relationship to military affairs. The Korean Peninsula remains the most militarized area in the world with armed forces of 2 million confronting each other along the 1953 truce line. The naval clashes in the West Sea in 1999 and 2002 and periodic shootings and violations within the demilitarized zone (DMZ) are evidence that military affairs are still the central problem between the two Koreas. These events have undermined the ROK Sunshine Policy.

Substantive negotiations between South and North about military or nuclear affairs have not occurred since the early 1990s. The 1991 Basic Agreement and the 1992 Denuclearization Agreement created the inter-Korean Joint Military Commission (JMC) and the Joint Nuclear Control Commission (JNCC) respectively. However, both of these commissions stopped functioning by 1993.³ To date, the enormous economic assistance to the North by the South has not resulted in direct discussions to improve these security concerns.

Despite the June 2002 naval incident initiated by the Northern military, there are indications that the North may be interested in limited internal reform and better military relations with the South. In July 2002, the North expressed regrets over the West Sea incident. The North began a series of major economic reforms, and reached an agreement to restart the construction of road and rail links across the DMZ – a goal first stated in the 1991 Basic Agreement. North Korea participated in the 14th Asian Games in September 2002 in Busan with enthusiastic support by the South Korean audience.

³ The Agreement on Reconciliation, Non-aggression, and Exchanges and Cooperation signed on Dec. 13, 1991 (also known as the “Basic Agreement”) and The Joint Declaration for Denuclearization of the Korea Peninsula signed on January 20, 1992, define the framework for South-North cooperation in military and nuclear topics. The Basic Agreement establishes confidence building and transparency between the respective militaries implemented by the Joint Military Commission. The Denuclearization Agreement prohibits both sides from having nuclear material reprocessing and/or enrichment facilities and obligates the two Koreas to establish a Joint Nuclear Control Commission for bilateral nuclear inspections. The agreements entered into force on February 19, 1992, but inter-Korean talks through the JNCC and JMC soon became stalemated. The JNCC conducted 13 meetings but has not convened since January 1993 because of the North’s insistence that North Korean inspectors be able to inspect all US military bases in the South.

Unfortunately, this amicable new atmosphere was soon seriously damaged by dangerous developments in the North's programs to develop WMDs. The US State Department revealed that the DPRK First Vice Foreign Minister Kang Suk-joo had admitted to US Assistant Secretary of State James Kelly during his visit to Pyongyang on October 3-5, 2002 that the North possessed a uranium enrichment program. This action is a violation of the 1992 Inter-Korean Denuclearization Agreement, the NPT, and the 1994 US-DPRK Agreed Framework. The revelation initiated another confrontation between the US, the International Atomic Energy Agency (IAEA), and the DPRK over the North's nuclear program.

A series of confrontational events followed the October announcement that again threatened the basis for the Sunshine Policy and added new uncertainties to future inter-Korean relations. A renewed North Korean nuclear program constitutes a direct threat to South Korea and the international community. Nevertheless, some North Korea watchers in Seoul and the US believe that the North's hard-line actually represents its desire for negotiations with the US. If they are right, the current tense situation might actually provide a starting point for the solution of the North's WMD problems during the new ROK administration.

1.3. Assumptions

This research postulates two scenarios for future inter-Korean relations. The first scenario assumes that military affairs, including the reduction of military tension and the construction of a peace regime, become full agenda items for inter-Korean dialogue. Both US-DPRK and inter-Korean relations then improve as a result of the North's reforms and a comprehensive solution to the problem of WMDs. This assumption requires fulfillment of a variety of preconditions:

- The new ROK government continues a policy of nonconfrontation with North Korea.
- North Korea decides to implement further economic reforms and participate in the international society. The influence of pragmatic reformers rises in North Korea.
- A solution to the current dispute over North Korean WMD-related activities is achieved.
- US-DPRK relations improve.
- The US and international society (particularly China and Russia) support a Northern policy of restructuring and openness.
- Japan and the DPRK make progress toward establishing formal relations.

The second scenario assumes a continuation in current inter-Korean relations (status quo), without significant improvement but also without degradation. North Korea watchers who predict this scenario note that the North's reforms are still insufficient for fundamental change. The tense relations between the US and North Korea, the unpredictability of the Pyongyang regime, and periodic South-North military clashes also contribute to stalemate. In this scenario, North Korea continues to avoid substantive dialog about military topics while at the same time seeking continued economic assistance and collaboration from South. Other features of the scenario are the following:

- The new ROK government is less forgiving and does not continue the Sunshine Policy toward North Korea in the current form.
- Public disappointment in the South rises with the North's sluggish reforms.
- The North's military continues to initiate periodic provocations.
- The US-DPRK confrontation over WMDs continues.
- Japan-DPRK formalization negotiations become stalemated.
- Hard-liners dominate in the North.
- Surrounding nations continue to be suspicious about the North's will to introduce economic reforms and open its society.

It is possible that the current crisis may escalate and renew hostility between the South and the North. Such a scenario is beyond the scope of consideration in this research because inter-Korean dialogue over military affairs will not be possible in these conditions.

This research concentrates on the first scenario (improved relations) and presents suggestions and recommendations for inter-Korean military CSBM negotiation with the hope that they can contribute to the decision-making process of the governments in Seoul and Washington. Many of the simpler options identified in this research can still contribute to the decision-making process in case of the second scenario (status quo). These modest suggestions and recommendations for first steps in stabilizing and improving security relations with North Korea can be useful even if relations do not improve rapidly and the reform process in the North is slow.

2. Environment for Inter-Korean Dialogue and Military Confidence Building

2.1. North Korean Reforms

2.1.1. Economic Reforms

The Pyongyang government began an unprecedented series of economic reforms during the summer of 2002; however, the North's first steps in economic reform date back to the designation of Najin and Sunbong as free trade zones in December 1991. In 1994, the North revised the Joint Venture Law to attract foreign investment, but the initiative did not result in much new investment. The North's poor infrastructure and unskilled labor force are obstacles to foreign investment. Consequently, economic activity by cooperative farms, factories, and other state-run economic entities shrank, while underground economic activities such as black markets, farmers' markets, etc., increased drastically.

If this distortion of the socialist economy continues, it could stifle the centrally controlled economy. This necessitated the Pyongyang regime to make some reforms. In July 2002, North Korea devalued the its currency from 2.15 won to 200 per dollar, abandoned a portion of its state-run distribution system, abolished the state price-control systems for some commodities, and increased their prices to market levels. To accommodate the sudden price hikes, Pyongyang drastically raised salaries by 15 to 25 times for some professions with priority given to military and production workers such as coal miners. The Sinuiju Special Administrative Region law issued on September 12 was the most significant capitalist reform and seeks to develop this city of 400,000 people into a capitalist, Hong Kong-style free trade district. The law legalized key capitalist features like personal ownership and inheritance of properties, and it delegated administrative and legal control to the local authorities of the region. The regime appears to be seeking to avoid the mistakes committed in Najin and Sunbong. These reforms are noteworthy in that they may signal acceptance of capitalism to a considerable degree. Devaluation of the North Korean currency is also noteworthy since it signals the North's desire to export its products.

2.1.2. Conciliatory Stance to the South

North Korea's stance toward the South became less confrontational during the summer of 2002. After its expression of regret over the West Sea naval incident, North Korea accepted an invitation to the 7th Ministerial-level Talks and various inter-Korean working-level meetings for economic cooperation. These meetings invigorated cultural and sports exchanges such as exchanges of symphony orchestras. The North's participation in the 14th Asian Games in

Busan was highlighted by the presence of North Korean female cheerleaders. The cheerleaders and the South Korean audience jointly cheered athletes of both Koreas.

On September 18, 2002, groundbreaking ceremonies were held for the reconnection of two railways routes. This joint project resulted in the establishment of local hot lines between military units of both Koreas to coordinate activities and prevent unintended conflicts during the construction period. This is the first hot-line connection between the militaries of the two Koreas since the division of the Peninsula.

In October 2002, the 8th Ministerial-level Talks were held in Pyongyang. The talks were followed by visit to Seoul by a high-level DPRK economic delegation, working-level meetings in Kaesong for the prevention of flooding in the Imjin River basin, and a tour by North Korean *Taekwondo* athletes. The two Koreas agreed to establish inter-Korean Red Cross organization contacts, open a land route across the DMZ soon for Mt. Kungang tourism, begin construction of the Kaesong industrial park in December, complete railroad connection by the end of December, and convene the 9th Ministerial-level Talks in Seoul in January 2003 (later cancelled). In addition, the two Koreas also planned to have meetings to organize sports and fishery cooperation.

The South Korean government exerted enormous effort to maintain the momentum for reconciliation. Upon the North's acceptance of the 7th Ministerial-level Talks, the Seoul government decided to provide 300,000 tons of food aid and to pay the expenses of the North Korean athletes participating in the Busan Asiad. Long-banned North Korean flags were hoisted in the stadiums as the North's national anthem was played. Although the final status of many of these agreements remains uncertain, the two Koreas were clearly engaging each other in a cooperative manner after the West Sea incident.

2.1.3. New Flexibility in Foreign Policy

During the same period, North Korea's foreign policy also demonstrated unprecedented flexibility. The historic Japan-DPRK summit meeting on September 17, 2002 was the first high-level contact since Kanemaru Kim visited Pyongyang in 1991 to negotiate normalization of diplomatic relations. The North desperately wants Japanese capital for its economic recovery and made clear that it sought full diplomatic relations with Japan and would abide by all its international agreements. The North was, in effect, confirming its willingness to comply with the 1994 Agreed Framework and the 1999 moratorium on missile test launches.

North Korea Chairman Kim Jong-Il surprised the world at the summit meeting by admitting that the North had kidnapped Japanese citizens. This was a sharp contrast to previous Northern denials of kidnapping allegations. Such confessional diplomacy was widely interpreted as displaying a will to participate responsibly in international society. Although it precipitated strong anti-North Korean sentiments in Japan, the confession will surely have positive effects on DPRK-Japan relations in the long run and represents a new, practical approach to DPRK foreign policy.

2.1.4. Assessment of Northern Reforms

The North's economic reforms and the new flexibility shown at the Japan-DPRK summit were viewed as good signs by South Koreans who expect peaceful and constructive change in North Korea. Nevertheless, there are reasons to moderate this optimism. Some analyses conclude that the reforms are intended to sustain the socialist economy because the announced reforms do not include political reforms. The North has not allowed any changes in the political system, governing ideologies, or military strategies. The "strong and powerful nation" remains the central governing ideology, and the government constructs barbed wire fences around the Shinuiju district to keep out "capitalist contamination."

The pessimistic analysts point out a sharp contrast with China's reforms in the late 1970s. Chinese leaders designated special economic zones in the coastal areas and used them as spearheads to disseminate capitalist economic activities into the mainland – the opposite of the DPRK approach. The Chinese leadership willingly acted as architects as well as evangelists of the capitalist reforms, while the North Korean leadership fears the spread of capitalist methods. According to this analysis, the North's reforms such as salary increases, devaluation of currency, expanded personal share in the cooperative farms, etc., will help bring the underground economy into the realm of the official socialist economy, thus contributing the stabilization of its faltering economy.

The declining US-DPRK relations and the problem of DPRK WMD programs are not causes for optimism. Of course, the WMD matters could be a starting point for a comprehensive security solution if the North's soft-line admission of uranium enrichment is really a tactic in confessional diplomacy. Conversely, if the North harbors dangerous goals such as becoming a declared nuclear power, continuing missile exports, and continued possession of bio-chemical weapons, US-DPRK relations will plummet.

The historic unpredictability of the Pyongyang regime is another factor that may dampen optimism about the future of inter-Korean relations. Predictability is difficult given the

North's unique decision-making structure. As a hereditary and totalitarian leader, Chairman Kim Jong-Il does not have to account for public opinion in his decision-making. All government organizations and officials are loyal to him because they depend on him for their power and prestige. In theory, the North Korean constitution stipulates a division of power between the cabinet and the Supreme Peoples' Assembly. In practice, the National Defense Commission (NDC), the Central Committee of the Korea Workers' Party (KWP), the KWP Political Bureau, and the Secretariat are de facto super-constitutional organizations that monopolize all important decisions, including military affairs. Kim Jong-Il's loyalists staff the KWP Secretariat and Political Bureau. Under this structure, Kim Jong-Il, as Chairman of the NDC and General Secretary of KWP Central Committee, makes all national decisions. Therefore his whimsical thinking and intuition are crucial variables in the formation of DPRK national policy.

Formal agreements with North Korea may not necessarily result in real progress in inter-Korean relations. The following lists examples of North Korean behavior that conflicts with its statements and signed agreements:

- Despite the 1972 South-North Joint Declaration, North Korea did not stop military provocations.
- The inter-Korean JMC and the JNCC, established pursuant to the 1991 Basic and 1992 Denuclearization Agreements, stalled in 1993 because of the North's intransigence – in effect annulling the historic agreements.
- In June 2001, repeated violation of the ROK territorial waters and the NLL by North Korean ships and patrol boats embarrassed the Seoul government when it was planning to celebrate the first anniversary of the historic 2000 inter-Korean summit.
- In 2001, North Korean workers at the light water reactor (LWR) construction site in Kumho refused to work unless their wages were drastically increased, forcing Korea Energy Development Organization (KEDO) to employ Uzbek workers.
- On June 29, 2002, North Korea provoked a clash in the West Sea that sank a South Korean patrol boat. The event is puzzling because billions of people were watching the World Cup football championship held in South Korea.

Thus, it is inadvisable to be either too optimistic or pessimistic about future progress in the inter-Korean relations. A more objective conclusion may be that the North is at a true crossroads. The path it chooses remains uncertain, but it is not likely that North Korea will stay at the crossroads for a long period of time.

2.2. North Korea's WMD Programs and Their Effect on Inter-Korean Relations

2.2.1. Missiles

Although the ROK is the nation threatened most directly by DPRK missiles, the issue has never been an agenda item in the inter-Korean dialogue. Pyongyang began its ballistic missile program in the 1970s. From 1976 to 1978, the North participated in China's DF-61 ballistic missile program. North Korea later successfully reverse-engineered Soviet Scud missiles and launchers. North Korea began production of a modified version of the Scud called Scud-B (320 km range) in 1986 followed by the Scud-C (500 km range) in 1991. In 1993, the North first test-fired the Rodong missile (based on Scud technology with a range of 1,000 to 1,300 km) and began its deployment in 1997. KIDA estimates that North Korea may have deployed up to 1,000 Scud and Rodong missiles. The three-stage Daepodong-2 missile was first test launched in August 1998 (the third stage test was a failure) and is estimated to have a design range of 2,500–3,000 km. North Korea claimed that the missile was a new space launch vehicle called the Paektusan-1. The Daepodong indicates that the North is seeking an Intercontinental Ballistic Missile (ICBM) capability.

Since the 1980s, North Korea has exported missiles, parts, launchers, and related technologies to Pakistan, Syria, Iran, Egypt, Yemen, and possibly other Middle Eastern countries. The value of its missile exports totaled \$580 million in 2001, accounting for one-third of the DPRK's total exports that year. North Korea has refused to join the Missile Technology Control Regime (MTCR) and its exports stand in defiance of international efforts toward nonproliferation. Furthermore its exports increase regional instability and create new security problems – particularly in South Asia and the Middle East. Israel attempted to negotiate compensation to North Korea in mid-1990s to stop the nation's missile export to Arab countries but failed. The Clinton administration also attempted to negotiate a stop to exports on a compensation basis, but failed because the North demanded enormous quid pro quo. The US-DPRK missile talks have been stalled since the inauguration of President George W. Bush, who has stated that the US will not pay compensation to missile proliferators.

North Korea has restrained its missile program by stopping missile test launches since its announcement of a moratorium in 1999. Nevertheless, the ROK and US governments report that North Korea has continued research on inertial navigation systems, payload adjustment, and engine thrust. In spite of the test-launch moratorium, the North possesses a formidable missile force that can be used to threaten South Korea, Japan, and US forces in both nations.

2.2.2. Chemical and Biological Weapons

Chemical weapons (CW) and biological weapons (BW) have never been a topic in US-DPRK or inter-Korean dialogues.

Chemical and biological agents can be effective weapons of mass destruction with low production cost if they are effectively dispersed. They can be delivered by a variety of means: artillery, mortars, and short-range rockets. Existing systems put about a third of South Korea's population within range. The effective distribution of agent from high-speed ballistic missiles is a difficult technical problem, and it is not clear if the North Korea is currently capable of building such a delivery system. If so, all of South Korea could be targeted with CW or BW.

Chemical Weapons

After the 1961 "Chemical Declaration" by Kim Il-sung, North Korea began to establish chemical weapons units in all army corps, divisions, and infantry brigades. In addition, every North Korean army division has an anti-nuclear and anti-chemical-weapon defense unit. They are controlled and commanded by the central Anti-Nuclear and Anti-Chemical Weapon Defense Bureau, within the Joint Chiefs of Staff of the Ministry of Defense. Facilities for research, development, and production of CW are spread throughout North Korea.

During the 1970s North Korea imported large amounts of chemicals from Japan and the Soviet Union that the ROK National Intelligence Service (MND) believes was used for the production of chemical weapons. Currently, the ROK MND believes that the DPRK maintains at least eight chemical weapon production facilities⁴ and five CW testing locations.⁵ North Korea is capable of producing nerve, blood, and blistering agents, but the rate of production of these agents is unknown. The North is estimated to possess 2,500 to 4,000 tons of indigenously manufactured chemical agents making it the third largest CW state after the US and Russia.⁶

The DPRK is a member of the 1925 Geneva Convention on Chemical Weapons, however the Geneva Convention prohibits only use of chemical weapons, not research, production, and

⁴ *North Korean Military Posture*, ROK Defense White Paper, 2000.

⁵ "North Korea's CB Weapons: Threat and Capability," Kyoung-Soo Kim, *Korean Journal of Defense Analysis*, Vol. XIV, No. 1, Spring 2002.

⁶ The amount was testified by Director Shin Kun of the National Intelligence Service before the Intelligence Committee of the National Assembly on October 28, 2002. Prior to this, the 1999 National Defense White Paper estimated that the North possessed 2,500–5,000 tons of chemical weapons. Most chemical munitions are in the form of artillery shells. North Korea also produces large quantities of detection kits, masks, protection clothes, and detoxification agents.

deployment of such weapons. The DPRK, however, is not a member of the Chemical Weapons Convention (CWC) and is not destroying its chemical weapons stockpile.

Biological Weapons

North Korea has BW programs in spite of signing the 1972 Biological Weapon Convention (BWC). The BWC allows production and possession of protective equipment, preventive medication, and peaceful biological agents (although it does not make a clear distinction with military agents). Biological weapons may be strategically attractive to North Korea because they are considerably less expensive to research and produce than conventional weapons or other forms of WMD. It has been estimated that establishing a small biological agent factory would cost the North approximately \$10,000.⁷ The North may therefore view the potential high impact of a BW as an efficient tool to offset the technical gap between Northern and Southern military capabilities.⁸

North Korea established the Institute of Microbiological Diseases in 1954 that also provided the basis for research and development of biological weapons. The DPRK BW program is thought to have begun in the early 1960s and reached full production status during the 1980s.⁹ The North's BW research and production system appears to follow the same organizational structure as those for chemical weapons with the 2nd Natural Science Institute being the controlling organization.¹⁰ It is generally believed that the North's BW program has focused on traditional agents such as botulinum toxin, anthrax bacteria, and plague bacteria, although research may also include typhoid, cholera, smallpox, yellow fever, and hemorrhagic fevers.¹¹

The DPRK has frequently denied any BW production through Korean Central News Agency press releases. Following a 1997 ROK Ministry of National Defense re-evaluation of Northern CBW threats, both the ROK and US Forces Korea (USFK) agreed that the extent of Northern BW capabilities had been previously underestimated and began establishing a combined CBW warfare readiness posture.¹²

⁷ Kim, Kyoung-Soo, "North Korea's CB Weapons: Threat and Capability," *The Korean Journal of Defense Analysis*, Vol. XIV, No.1 Spring 2002.

⁸ *Ibid.*

⁹ Republic of Korea, Ministry of National Defense 2000 White Paper, p. 47.

¹⁰ Kim, Kyoung-Soo, "North Korea's CB Weapons: Threat and Capability," *The Korean Journal of Defense Analysis*, Vol. XIV, No.1, Spring 2002.

¹¹ North Korea Advisory Group, Report to the Speaker, U.S. House of Representatives, November 1999.

¹² Republic of Korea Ministry of National Defense 1999 White Paper, p. 24.

2.2.3. Nuclear Weapons

North Korean nuclear development began with research on the fabrication of fuel rods and chemical processing of spent fuel in 1950s. During the 1960s, it built its first reactor (based on the Soviet IRT-2000), operated the reactor and a cyclotron, and started construction of the Yongbyun nuclear research complex. The Yongbyun complex now covers some 4.5 million square meters with 280 buildings.¹³ By the 1970s, North Korea had learned the concepts of spent reactor fuel reprocessing and even fast breeder reactor design. During the same period, it embarked on uranium refining, uranium enrichment, and fabrication of fuel rods. In 1985, the North completed the 5 megawatt (MW) reactor at Yongbyun and, in 1986, began construction of the reprocessing plant in Yongbyun.

To encourage North Korea to stop developing these facilities, South Korea decided to give up any future capability in nuclear material enrichment and reprocessing. The Roh Tae-Woo government issued its Non-nuclear Declaration on November 8, 1991, in which South Korea reconfirmed that it did not possess nuclear weapons and promised not to possess and operate enrichment and reprocessing facilities. The Declaration was followed by the historic inter-Korean Basic Agreement of December 13, 1991. The Seoul government declared on December 18, 1991, that all US nuclear weapons had been withdrawn from South Korea. The inter-Korean Joint Declaration of Denuclearization of the Korean Peninsula was signed on January 20, 1992. In the Joint Declaration, both Koreas promised not to pursue enrichment, reprocessing, and nuclear weapons. In January 1992, North Korea and the International Atomic Energy Agency (IAEA) signed a Full Scope Safeguards Agreement resulting in the IAEA's first inspection in North Korea in May 1992.

IAEA inspections indicated that North Korea had reprocessed fuel rods for plutonium. North Korea initially denied plutonium production but later admitted that it had reprocessed 258 spent fuel rods in one production batch and extracted 90 grams of plutonium at Yongbyun during March 1990. The IAEA defines a “significant quantity” of plutonium as 8 kg of metal. Spent fuel rods are stored inside the 5-MW reactor building, and the radiochemical laboratory is located nearby. Although this date is prior to the DPRK’s signing of the Denuclearization Agreement and NPT, these agreements require that holdings of fissile material be declared and placed under IAEA safeguards. IAEA inspectors, however, suspected that North Korea had reprocessed at least three times, extracting more than the amount of plutonium it stated. The IAEA's request for special inspections of two suspicious undeclared facilities was

¹³ In contrast, the Daeduk Atomic Research Complex, South Korea's largest atomic research park, covers only 1.2 million square meters with some 30 buildings.

rejected by North Korea. The dispute between the IAEA and North Korea stopped all inspection activities. On March 12, 1993, North Korea announced its withdrawal from the NPT. During the dispute, the Clinton administration considered ordering air strikes to destroy the Yongbyun nuclear research complex. The long period of brinkmanship diplomacy concluded when the two nations signed the Agreed Framework on October 20, 1994.

The Agreed Framework halted North Korea's efforts to create plutonium in graphite reactors and separate it in reprocessing plants. In the agreement, North Korea agreed to freeze its plutonium-related facilities including the 5 MW reactor and the fuel reprocessing plant. The Agreed Framework stopped ongoing construction, although one of two reprocessing lines was believed to be operational prior to the agreement. Although there is considerable uncertainty, the IAEA estimates that between 7 and 22 kg of plutonium might have been extracted.¹⁴ Construction at a 50 MW and a 200 MW graphite reactors were also halted. These reactors were 1 to 2 years from completion and were estimated by the IAEA to be theoretically capable of producing 55 kg and 210 kg of plutonium, respectively, per year in full operation.

The intent of the Agreed Framework was to replace existing and planned North Korean reactors with reactors that have much lower potential to support nuclear weapon proliferation. The new reactors were also intended to build energy infrastructure in the North and help it integrate into the economic and political mainstream of East Asia. The United States agreed to facilitate the construction of two LWRs in Kumho, North Korea, through the international KEDO consortium by 2003 and to provide 500,000 tons of heavy oil annually until the LWRs are complete. The ROK promised to bear 70% of the KEDO consortium's construction expense, and Japan promised to provide a total of \$1 billion. The US and the EU also committed to provide funding.

The Agreed Framework postponed full IAEA inspections of Yongbyun until before delivery of key nuclear components, which would take place about five years after the start of construction.¹⁵ In addition, the US promised to lift economic sanctions, try to normalize diplomatic relations, and provide a de facto negative security assurance to North Korea.

¹⁴ David Albright, "Back to the Future in North Korea," Carnegie Endowment for International Peace, *Non-Proliferation Brief Issue Brief*, 13 December 2000, Volume III, No. 36.

¹⁵ Article IV-3 of the Agreed Framework states: "When a significant portion of the LWR project (turbine generator) is completed, but before the delivery of key nuclear components (reactor, steam generator, prime coolant, etc.), the DPRK will come into full compliance with its safeguards agreement...." Ambiguity of this article now allows the US-DPRK tug-of-war over when and how IAEA nuclear inspection should be reinstated. The US maintains that Pyongyang should complete accountability of its previous nuclear activities before the delivery of the reactors, while North Korea counters that it has only to accept inspections just before the delivery

The implementation of the Agreed Framework, however, has been volatile with the North's initial opposition to South Korea-made reactors, infiltration by North Korean submarines into South Korean waters, the test launch of a Daepodong missile, and controversies about the tunnel facility at Kumchang-ni. All these controversies caused delays in the delivery of heavy fuel oil and start of construction in the KEDO project. American hard liners argued for suspension of the LWR construction and their replacement with thermal power stations. Under the delayed schedule, the two LWRs are to be completed by 2008 and 2009, respectively. Until the resumption of the IAEA inspections, the North's plutonium separation activities before the spring of 1992 remain unknown.

The second nuclear controversy began when the US State Department revealed the existence of a uranium enrichment program in North Korea in October 2002. With this development, the US-DPRK confrontation was renewed, and a difference between ROK and US governments over their North Korea policies emerged. The Kim Dae-jung government immediately expressed its intention to continue the Sunshine Policy and called for a "solution through dialogue." In contrast, the US confirmed that it would not negotiate without the North's prior abandonment of nuclear weapon development and emphasized a "peaceful solution" that did not preclude any actions except war. The US, ROK, and Japan held a trilateral summit on October 28 during the Asia-Pacific Economic Council (APEC) annual meeting and unanimously called for the North to stop nuclear weapon development. Nevertheless, differences between US and ROK outlooks remain. Both the US and the new Roh Moo-Hyun government realize that close coordination must be preserved to strengthen their shared opposition to the North developing nuclear weapons.

The US call for the DPRK to stop its nuclear weapon program prior to any other negotiations was immediately rejected by North Korea, which instead called for a nonaggression treaty with the US. On December 9, Spanish and US navy ships searched the North Korean ship *Sosan* in the Indian Ocean and found it laden with Scud missiles destined for Yemen. On December 12, the North threatened to lift the freeze over its nuclear facilities and sent a letter to IAEA demanding removal of surveillance cameras installed pursuant to the Agreed Framework. On December 22, North Korea removed or disabled the IAEA surveillance equipment at the 5-MW reactor, the spent fuel pool, and the reprocessing plant. IAEA inspectors resident at Yongbyun were expelled a few days later. On January 10, 2003, the

of the reactors that would likely take place in the first half of 2005 under the current schedule. The DPRK may argue that it has only to accept inspections for the only several months period between installation of turbine generator and that of the reactor.

North announced its withdrawal from the NPT. The next day it indicated its intention to resume missile test launches.

North Korea then announced it had restarted the operation of its 5-MW reactor and would complete construction of the two larger graphite-moderated reactors. In response to North Korea's actions, the IAEA declared it to be in violation of the NPT. The "unfrozen" North Korean facilities include the following:

- The 5-MW research reactor;
- The spent nuclear fuel storage facility containing sealed canisters containing spent fuel rods from the research reactor (Approximately 400 canisters contain 8017 fuel rods which the IAEA estimates to contain between 25 to 30 kg of plutonium.¹⁶);
- The "radiochemistry laboratory" for the reprocessing of spent fuel and the extraction of plutonium;
- The nuclear fuel manufacturing plant;
- The partly completed 50-MW reactor at Yongbyon; and
- The partly completed 200-MW reactor at Taechon.

The series of North Korea's hard-line actions is akin to its actions during the 1993-1994 crisis. North Korea's admission of an enrichment program and its actions to restart plutonium extraction result in a variety of interpretations over the North's motives:

1. Some observers contend that the North, out a deep sense of insecurity and as a way to improve regime survival, felt compelled to demonstrate its WMD capability. This position is persuasive given that missile power and WMDs can enhance nationalistic prestige for a domestic audience. North Korea could have genuinely felt threatened by the Bush Administration's statements that grouped the DPRK with Iraq and Iran in the "Axis of Evil," the US Nuclear Posture Review (NPR) that implied North Korea could be targeted for a nuclear first strike, and the discussion within the US Government about developing new earth-penetrating tactical nuclear weapons. This stance further suggests that North Korea, with its WMD capability, may be threatening to take South Korea and Japan hostage as a way to forestall what it perceives as American nuclear blackmail.

¹⁶ Mark Mohr, "Yongbyon Spent Fuel Experience," a presentation at the US-DPRK Next Steps Workshop (sponsored by the Nautilus Institute for Security and Sustainability and the Carnegie Endowment for International Peace), Washington, DC, January 27, 2003.

2. The second body of opinion holds that the North's hard-line behavior represents its desperate call for dialogue with the US and that the admission of an enrichment program is confessional diplomacy, designed to show its intention to relinquish WMD programs in exchange for assurance of the regime's survival.
3. The third view maintains that the North may be preparing another “salami tactic” or “agenda slicing tactic” to maximize its benefits in future negotiations with the US. By slicing the nuclear agenda into plutonium and uranium and by removing the IAEA monitoring equipment on the frozen facilities, the North has more options to trade in future negotiations. In the 1994 Agreed Framework negotiations, North Korea successfully added LWRs to the agenda in the discussion of transparency in nuclear facilities and finally acquired US concessions through the Agreed Framework. North Korea may also use CW, BW, and missiles as bargaining chips.

North Korea may be unfolding sophisticated nuclear strategies toward the US and the international community. On October 25, the North's official Radio Pyongyang said, “We are entitled to more than nuclear weapons.” This statement confused South Korean watchers who wondered if the North actually had a nuclear weapon. Radio Pyongyang's statement on November 17 strongly indicated that North Korea possessed nuclear weapons: "We have come to have a powerful military means including nuclear weapons to counter the nuclear threat by the U.S." In light of these confusing statements and Pyongyang's notorious behavior, the North may be developing a North Korean version of the “policy of ambiguity” for which Israel is renowned. North Korea's pursuit of a uranium bomb might also be explained as part of its nuclear strategy, given the complexity of plutonium bomb designs.

An interim conclusion at this time could be that the North's motives are a combination of all these factors, and this is why the international community and the ROK should prepare a set of sophisticated responses covering the whole spectrum of the North's options.

2.3. Prospects to Resolve the Current Confrontation

Theoretically, the US has a limited spectrum of choices: military action; dialogue and appeasement; and containment. A military solution to the North Korea problem is a very unlikely choice because of three factors:

1. US military action would raise serious concerns on the part of China and Russia. The DPRK-China mutual defense treaty stipulates de facto automatic intervention in case of war. Russian President Putin's new Korea policy recognizes the importance of

North Korea.¹⁷

2. North Korea has, in effect, taken South Korea and Japan hostage.
3. North Korea's large military forces and rugged terrain could result in enormous casualties for US forces if the US were to try to subjugate the North militarily.

It is not easy for the US to initiate a dialogue or act to appease the DPRK because such a policy contradicts the Bush Administration's public strategies. The administration has repeated its intention not to provide any compensation to WMD proliferators. Accordingly, containment will likely be the only choice for the US for the time being, and Washington's "peaceful solution" reflects this reality.

North Korea's choices can be distilled into three options: dialogue; stalemate by muddling along; and crisis escalation. Under the first choice, North Korea would have to take "complete and verifiable" measures to give up its WMD programs and then negotiate over ways the US and international society would support its restructuring. This has always been a difficult choice for North Korea because the Pyongyang regime will eventually face heightened calls for democracy that would undermine its political system and threaten regime survival. Escalation of the crisis is not easy either. Under this choice, North Korea would continue its WMD programs intermingled with actions planned to shock the US and Japan. However North Korea is economically weaker than it was in 1993-94 and has become increasingly dependent on outside aid. Sanctions pose a significant threat to the regime. The brinkmanship that harvested abundant returns in 1993-1994 is not likely to be equally productive as long as President Bush occupies the Oval Office.

The situation raises the possibility that North Korea would prefer the interim choice: muddling along. This may mean that despite the current spiral of tit-for-tat measures (US suspension of heavy oil supply and the North Korean removal of IAEA monitoring equipment and reloading of fuel rods in the 5-MW reactor), North Korea may still want dialogue rather than a true confrontation against the US. The North is not as strong as it pretends to be. This means that the nuclear confrontation can still turn to dialogue and negotiation at any time according to how the North's leadership perceives its own strengths and weaknesses.

¹⁷ Russia slanted toward South Korea since the 1990 ROK-Russia diplomatic normalization. More recently, however, it has taken a balanced approach toward the two Koreas. There have been three Russia-DPRK summit meetings, and the bilateral agreement in April 2000 for cooperation in defense industries and military technologies makes possible transfer to North Korea of new Russian weapons and resumption of military relations.

The North Korean leadership seeks benefits that compensate for their risks. If the North continues its nuclear ambitions and searches for new ways to frighten its neighbors into providing financial assistance, the nuclear game will become more dangerous. However, if the Pyongyang regime sincerely seeks self-preservation through dialogue, the world could witness the start of a *glasnost*-like era for Washington-Pyongyang relations, not to mention better inter-Korean ties. This would provide President Roh with tremendous momentum to capitalize on the accomplishments of his predecessor. Thus, Seoul and Washington would have no reason to worry about their points of minor disagreement because they would cooperate on assisting North Korea. This chain of events provides the best scenario for reinforced inter-Korean dialogue and the adoption of military affairs as a new agendum in the dialogue. With this expectation, Chapter 3 will describe the use of CSBMs as tools in decreasing tensions and normalizing relations.

3. International Precedents for Military and Nuclear CBMs

3.1. The Concept of Confidence Building Measures

The definition of confidence building measures (CBMs) varies from a narrow focus on operational military activities to a broad interpretation that includes any political, economic, or military action that builds confidence. Many different terms have been used for CBMs including trust building measures, mutual assurance measures, mutual reassurance measures, and community building measures. Confidence building is most frequently seen as a process of communication between governments concerning security-related matters. Cossa uses the following definition for CBMs: *both formal and informal measures, whether unilateral, bilateral, or multilateral, that address, prevent, or resolve uncertainties among states, including both military and political elements.*¹⁸ Such measures contribute to a reduction of uncertainty, misperception, and suspicion associated with military activities and thus help to reduce the possibility of incidental or accidental war. Thus, CBMs help manage problems and avoid confrontations, but they are not the same as comprehensive security frameworks or joint defense arrangements. The focus of those types of agreements is on prescribing activities that contribute to joint defense. Although CBMs can form one element of comprehensive security frameworks, they do not typically combine political, economic, and social dimensions.

In the case of confidence building, it is most often assumed that the preconditions are less stringent than those required for conflict resolution. CBMs are viewed as precursors to arms control and act as tools designed to work toward the day when solution-oriented diplomacy can work. Richard Haass writes that the point at which accommodation and cooperation become possible marks the “ripening” of a conflict.¹⁹ He identifies four conditions of “ripeness”:

- A shared perception that an accord is preferable to the absence of agreement.
- Leaders who are able to agree to an accord.
- The ability of both sides to obtain sufficient compromise to ensure that their domestic constituencies accept the accord.
- A mutually acceptable approach or process for settling the conflict.

¹⁸ Ralph Cossa, *Asia-Pacific Confidence Building and Security Building Measures*, Center for Strategic and International Studies, Significant Issues Series, Volume XVII, Number 3, 1995, pp. 1-18.

¹⁹ Richard Haass, *Conflicts Unending: The United States and Regional Conflicts*, Chapter 1, Yale University Press (New Haven), 1990.

The degree of ripeness determines whether states can only agree to stabilize the conflict between them, or whether gradual resolution of outstanding differences is possible. The realization that the status quo has become unbearable and that a unilateral solution is impossible, as well as an indigenous change of government or external pressure on the parties individually or in some combination, may all play a role in the ripening of a conflict. Limited cooperation does not require that the sources of conflict be eliminated, only that the factors favoring cooperation become strong enough for incremental steps to be possible.

The type and comprehensiveness of CBMs typically evolves over time with larger, more significant actions occurring after confidence has been increased by previous actions. Fisher writes that the evolution of European confidence building measures during the Cold War can be divided into three time-phased categories:²⁰

- *Forerunners* were actions that defined rules-of-conduct or created more reliable communication channels for the exchange of information, particularly after incidents or accidents so as to reduce the risk of inadvertent or accidental conflict.
- *Ground-Breakers* consisted of mostly voluntary actions with minor military significance. However, these actions combined with increased communication and economic links may have reawakened consciousness on both sides of the East-West divide of shared experiences and values that transcended ideological differences.
- *Security Building Measures* were commitments with notification, observations, and access provisions and could have included structural arms control.

Jonathan Alford has used an analogy with two swordsmen to illustrate some features of military CBMs.²¹ In the analogy, the two swordsmen do not wish to fight but find themselves face to face with swords drawn. Neither is willing to back down in such a way that might mean submitting to the other or accepting defeat. As a result, the process of backing away involves a series of small, slow, verifiable, and symmetrical steps that are communicated directly or indirectly to the adversary in the expectation that each step will elicit a positive response. The first step is crucial: it may only be a minimal move backward, but it must be unambiguous and responded to in kind. Both swordsmen still maintain their guard position and can immediately move to an attack position if circumstances warrant. If the second swordsman responds with a movement backward of approximately equal distance, then the

²⁰ Cathleen Fisher, *The Preconditions of Confidence Building: Lessons from the European Experience*, CBM volume, The Henry Stimson Center, 1995, pp. 261-280.

²¹ Jonathan Alford, "Confidence Building Measures," *Adelphi Papers*, Number 149, International Institute for Strategic Studies, 1979.

process can be repeated until the adversaries are too far apart to strike each other. At this point, the swords can be lowered in a mutually verifiable way. Should either one move to attack, there is enough time and space for the other to take a defensive position. After a suitable time has passed, the swordsmen can sheathe their weapons, unbuckle their belts, and lay their weapons on the ground while they watch each other to see if a hostile action needs to be countered. Although obviously imperfect, this analogy captures some of the elements of successful CBMs: transparency, predictability, reliability, mutuality, symmetry, balance, communication, and verification.

3.2. Implementation of CBMs

The process of instilling habits of cooperation suggests that states should embark on confidence building without fixed notions of the measures most likely to enhance security.²² Communication and risk reduction activities may prove easier to implement at earlier stages of accommodation than constraints. Some measures, like the exchange of general military information (e.g., arms registries), communication (e.g., hotlines), and risk reduction (e.g., rules of naval behavior) may be universal in their applicability, while notification and constraint mechanisms require extensive tailoring to forces and regions in which they will be implemented. This observation suggests that the development and implementation of CBMs should be sequenced from lesser to greater degrees of intrusiveness and sensitivity. Less constraining or intrusive measures will be easier to negotiate and require less practical experience in arms control and monitoring technology than constraints requiring detailed definitions of thresholds or verification regimes. Developing advanced CBMs without technical and political preparation, runs the risk that the process may bog down in lengthy and potentially unproductive negotiations.

CBMs can be implemented as unilateral, bilateral, or multilateral actions and fall into several broad categories:

- *Declaratory* measures – statements of intent, including broad commitments such as non-attack or no-first-use of certain types of weapons.
- *Transparency* measures – including information, communication, notification, observation, and inspection.

²² M. Susan Pedersen and Stanley Weeks; *Asia-Pacific Confidence Building and Security Building Measures*, Center for Strategic and International Studies, Significant Issues Series, Volume XVII, Number 3, 1995, pp.81-100.

- *Constraint* measures – including risk reduction regimes and exclusion/separation zones, as well more traditional constraints on personnel, equipment, and operational activities.

A historical review of the implementation of CBMs reveals some common characteristics:

- CBMs cannot work in the absence of a desire on the part of the participants to cooperate. CBMs must be viewed in “win-win” terms.
- CBMs are most effective if they build upon and are guided by regional (or global) norms. They must be compatible with the political, economic, and cultural characteristics of the region in which they are to function.
- Foreign models for CBMs do not necessarily apply and cannot be imposed.
- CBMs represent a means toward an end and are temporary and transitional tools. They are not institutions but may help facilitate institution building.
- CBMs should have pragmatic and clearly defined objectives. Objectives should be measurable, and there should be agreement as to what constitutes compliance and progress.
- Measures that exceed the political willingness of the states to implement them can increase discord, thereby creating negative effects. (The lack of genuine high-level commitment explains why the system of CBMs negotiated by India and Pakistan has not significantly improved the hostile relationship between the two.)
- Gradual, methodical, and incremental approaches seem to work best. Long-term approaches provide greater opportunity for consensus building.
- The process may be as important as the product. The process creates precedents for engagement and cooperation, but dialogue without a defined purpose cannot be sustained. This is particularly true in the initial phases of confidence building.

3.3. Applicability of CBM Precedents to the Korean Peninsula

Precedents and models for CBMs do not necessarily apply outside their area of origin. The Korean Peninsula is unique in that it contains one culture and is one nation arbitrarily divided. The 1991 Basic Agreement and the 1992 Denuclearization Agreement are political precedents between South and North Korea but not operational precedents. There are CBM mechanisms, however, that may improve confidence between South and North Korea and recognize the political and strategic environment. At the current level of bilateral relations, transparency measures would be easier to negotiate and implement than constraint measures. The following list is based on regional precedents described Appendix A.

Relevant Precedents for Declaratory Measures

- Non-attack of nuclear facilities (India-Pakistan)
- A bilateral agreement prohibiting the possession of chemical weapons (India-Pakistan). The ROK has ratified the CWC. The DPRK is not a signatory. A bilateral agreement might be easier to negotiate than DPRK accession to the CWC.

Relevant Precedents for Transparency Measures

- A hotline to provide continuous and direct communication between command authorities (US-USSR, India-Pakistan, UK-Argentina)
- Advance notification (the duration of advanced notice is specified) of large military exercises above a specified threshold and/or in a defined geographic zone [North Atlantic Treaty Organization (NATO)-Warsaw Pact in Helsinki Act, India-Pakistan, Israel-Egypt]
- Exchange of the next year's schedule of all military activities by the end of the current year (NATO-Warsaw Pact in Stockholm Document)
- Establish contacts by providing for periodic reciprocal visits to bases (NATO-Warsaw Pact in the Vienna Documents).
- Direct interactions between military and security officials in informal academic settings (India-Pakistan, multilateral Latin America)
- Cooperation in peacekeeping missions (India-Pakistan)
- Exchange of information about military holdings (UN Registry of Conventional Arms, Bosnia-Herzegovina Peace Agreement, multilateral Latin America)
- Cooperative aerial overflight (Open Skies Treaty, Israel-Egypt Sinai II Agreement).
- Nuclear facility transparency [Argentina-Brazil Agreement, European Atomic Energy Commission (EURATOM)]
- Remote monitoring of avenues for attack in demilitarized or buffer zones using sensors (Israel-Egypt Sinai II Agreement)
- Maritime: Conduct joint search and rescue planning and exercise (Argentina-Brazil, Ecuador-Peru, US-China)
- Aviation: Exchange aeronautical information about the airports belonging to each signatory and agree to accept emergency landings (Argentina-UK)

- Exchange of information describing minefields (Ecuador-Peru, Israel-Jordan)
- Provide advance notice of naval maneuvers involving more than a specified threshold number of vessels (Argentina-UK, Argentina-Chile, India-Pakistan).

Relevant Precedents for Constraint Measures

- Maritime (fishing): Limitations on the number of ships fishing at one time, where they fish, and the quantity of fish caught (UK-Iceland). Bilateral fishing agreements exist between Japan-China, Japan-ROK, Japan-Russia, and China-ROK
- Maritime (military): Naval vessels are not to move within a specific distance of each other (India-Pakistan, US-USSR)
- Maritime (military): Naval vessels are not to conduct specified activities (India-Pakistan, US-USSR, US-China)
- Maritime (military/civilian): Daily/regular exchange of information describing military and commercial traffic (South Atlantic Maritime Area, Argentina-Chile)
- Aviation (military): Armed aircraft are not to fly within 10 km of the border. Unarmed aircraft are not to fly within 1 km of the border. (India-Pakistan)
- No military exercises are to be conducted within 5 km of the border (India-Pakistan)
- No detonation of explosives is to be conducted within 2 km of the border. Advance notice is to be given for construction activities (India-China).

4. Military Confidence Building Measures between North and South Korea

This chapter describes potential CBMs for conventional military forces. The authors intend for the CBMs to be steps that could support a future “grand bargain” to resolve the Korean security problem. The CBMs can be implemented prior to the completion of the “grand bargain.” They are intended to reduce current tensions, demonstrate good faith on all sides, establish precedents for cooperation, build experience for arms control/reduction, and encourage the North to join the international community. They provide a framework of policy options for the ROK government, potentially in partnership with allies, to develop and implement. In some cases, North Korea will require assistance in implementing the CBM. South Korea should be prepared to provide operational, technical, and financial help. A possible model is the Cooperative Threat Reduction Program between the US and Former Soviet Union.

The Korean Peninsula is packed with destructive weaponry as summarized in Table 1. The military power that both North and South Korea possess far exceeds the level needed in the absence of bilateral tensions. North Korea’s military ranks fourth in size after the US, China, and Russia and is far in excess of its economic power. In addition to conventional weapons, North Korea possesses long-range missiles and likely possesses chemical and biological weapons. It also has a long-term program to develop nuclear weapons.

Table 1: Military Forces on the Korean Peninsula²³

Conventional Forces	North Korea	South Korea	United States
Troops	1,170,000	690,000	36,700
Tanks	3,800	2,360	116
Armored Vehicles	2,300	2,400	237
Artillery Pieces	12,500	5,180	45
Combat Vessels	430	160	0
Submarines	90	10	0
Aircraft	870	580	102

The reason that North and South Korea possess such large military forces is that the two countries are in an arms race. North Korea has never given up its ambition to unify the two Koreas under its system – through military force if necessary. Consequently, South Korea must defend itself against North Korea’s hostile military policy. The political competition and

²³ The International Institute for Strategic Studies, *The Military Balance 2002-2003*, Oxford University Press, London, UK.

mutual distrust between the two nations has resulted in excessive military stockpiles and constant tension.

The following sections assess sources of tension and options for confidence building in four categories: common areas, ground forces, naval forces, and air forces. Weapons of mass destruction are assessed in Chapter Five. The common areas section describes political factors that directly and indirectly affect all forms of military confidence building. The military sections (ground, naval, and air) focus on several application areas: military-to-military interactions, communication-consultation-transparency, safety and prevention of dangerous military activities, non-military cooperation, and security building measures (including arms control). Within these application areas, operational options are presented in priority order. Operational measures may contain several phases to make them more flexible under changing political circumstances. The early phases may be useful even if South-North relations do not improve (Scenario 2); the advanced phases may require progress on reform in the North and a willingness to improve relations significantly (Scenario 1).

The various options for the described confidence-building measures should be discussed and negotiated with the North in a flexible manner, considering the level of sensitivity and the ease of implementation. Currently, the relations between the two Koreas vary between cooperation and tension, and it is best to introduce CBMs in phases. It will probably be most productive to first pursue the options related to the basic reconciliation effort and the transparency of basic military matters. More sensitive issues associated with transparency such as a comprehensive exchange of military information, or the restriction or prohibition of certain military activities should be proposed after relations have improved. Proposals and progress in one category of CBM do not necessarily depend on the acceptance of all of the categories, although the ROK government should define frameworks of CBMs that mutually reinforce each other prior to the start of negotiations. If the North prefers to discuss CBMs individually, the authors believe that the CBMs should be proposed in the order presented.

4.1. Common Areas Affecting Military Confidence Building

4.1.1. Sources of Tension

Current relations between the two Koreas vacillate between conflict and reconciliation, and steady military management is necessary to prevent the escalation of military tension. Therefore, the re-establishment and expansion of South-North military communication and control mechanisms should be a top priority for the ROK.

Although the DMZ was established by the 1953 Armistice Agreement, the protocols have not been observed as intended. Although observation posts are permitted within the DMZ, North Korea has built various fortifications inside the DMZ and equipped them with heavy weapons in violation of the Armistice Agreement. In addition, it has dug underground tunnels for infiltration and attack by special operations forces.

The organizations created by the Armistice Agreement to enforce and supervise the operation of the armistice have stopped functioning. North Korea expelled the delegates of Czechoslovakia and Poland from the Neutral Nations Supervisory Committee (NNSC) on March 3, 1993, and February 28, 1995, respectively. Sweden and Switzerland continue their participation in the NNSC, but without Northern cooperation they are ineffective. On April 28, 1994, North Korea unilaterally withdrew its members from the Military Armistice Committee (MAC), the key organization that enforces and supervises operation of the armistice agreement. As a result, China voluntarily pulled out its delegates from the MAC on December 15, 1994.

As the MAC became dysfunctional, South Korea, after a close consultation with the UN Command, proposed “general-level talks” between the U.N. Command and the North on February 11, 1998. These talks are intended to manage risks within the framework of the MAC. North Korea accepted the proposal on June 8, 1998. The “general officers” dialogue between U.N. Command and Korean People’s Army performed some functions of the MAC until North Korea suspended the talks in March 2003. Since the Armistice is not functioning effectively, the potential for significant military conflict between North and South Korea remains.

4.1.2. Options for Confidence Building Measures in Common Areas

- **Option 1: Expand the Understanding of Verification and Arms Control**

The first steps in confidence building do not necessarily require verification to guarantee that commitments have been honored because these measures are mostly self-evident. South and North Korea can thus improve confidence even during current tense relations without formal mechanisms for verification.

Phase 1: Plan for Verification in Confidence Building

(Applicable scenarios: status quo and improved relations)

This is unilateral measure. If relations between the Koreas improve, sensitive measures from the military standpoint (e.g., comprehensive military information exchange, restriction of

military activity) will require verification of the compliance of conditions required under the agreement. In preparation, the ROK should conduct planning to implement verification including technical training and exercises. Implementation of CBMs may cross the responsibilities of different government organizations. Representatives from the affected organizations such as the Ministry of National Defense (e.g., Korean Arms Verification Agency), Ministry of Unification, the National Security Council, and other government agencies should be included in planning, training, and implementation.

Phase 2: Introduce the DPRK to Verification Techniques and Strategies

(Applicable scenarios: status quo and improved relations)

North Korea is notoriously suspicious and resistant to verification of agreements. They will, however, accept verification if they are convinced it is in their interests, as demonstrated by the Agreed Framework and the KEDO reactor project. North Korean policy makers need to understand how verification can be implemented and how it will benefit them. South Korea, either alone or in partnership with international organizations (e.g., the UN, Organization for the Prohibition of Chemical Weapons, the OSCE, IAEA), and interested third parties (e.g., Sweden, Canada, Australia), should offer orientation and training to North Koreans. The process of conducting orientation and training with the North Koreans constitutes a person-to-person CBM by itself.

- **Option 2. Restore and Expand Military Communication and Control Measures**

Phase 1: Restore MAC Functions

(Applicable scenarios: improved relations)

The ROK, with US and UN support, should proceed with measures to reinstate the functions of the MAC. The ROK should link improved diplomatic relations, economic aid, and joint ventures to the reinstatement of the full functions of the MAC.

Phase 2: Reactivate the South-North Basic Agreement

(Applicable scenarios: improved relations)

When the relations between the two Koreas improve, bilateral military interactions will need to be expanded to include conflict management and arms control. The control and management of conflicts and crises on the Korean Peninsula should be implemented through enhanced bilateral military communication channels. The North-South Military Committee and the North-South Military Joint Committee as defined in the Basic Agreement should be reactivated. The relationship between the ROK and the DPRK has evolved since the Basic

Agreement was signed. Agreements for joint business ventures, the KEDO, inter-Korean maritime shipments, and Mt. Geumgang tourism have been signed. The ROK and DPRK should refresh the Basic Agreement by expanding its charter to account for these events and symbolically re-sign the Basic Agreement.

Phase 3: Declare the Mutual Intention for the Peaceful Solution of Conflicts

(Applicable scenarios: improved relations)

International and regional cooperative security organizations such as the UN, the Asian Regional Forum (ARF), and the Northeast Asia Cooperation Dialogue (NEACD) should be utilized to engage North Korea. Currently, the NEACD functions as an unofficial dialogue body in which government officials informally participate. However, the NEACD is likely to develop into the “Northeast Asia Security Dialogue” (NEASD), which could function as a means of official intergovernmental communication. If this occurs, it would be very useful to establish a “Northeast Asia Conflict Prevention Center” (NEACPC) as a subordinate organization of the NEASD similar to the Conflict Prevention Center (CPC) of the Organization for Security and Cooperation in Europe (OSCE). The NEASD could work to prevent conflict in the Korean Peninsula as well as other potential regional conflicts. The ROK government should plan for and encourage the development of an NEASD.

4.2. Ground Forces

4.2.1. Sources of Tension

North Korea’s military strategy against South Korea is still based on forward military deployment and surprise attack. To support this strategy, North Korea has deployed offensive units near the DMZ in positions to launch an attack with little preparation. The North can support its attack with systems of long-range artillery and rockets. Its 170-mm self-propelled artillery and 240-mm multiple rocket launchers can reach Seoul from firing positions near the DMZ. North Korea has a large number of special operations forces that are difficult to detect and that would likely precede an attack by the main army by infiltration. In addition, North Korea has deployed Scud and Rodong ballistic missiles that are capable of striking targets anywhere in South Korea. Given the ability of these systems to strike with little or no warning and potentially include CW or BW, the current situation is extremely threatening to South Korea.

South Korea still carries the scars of the sudden Northern attack starting the Korean War. The South fears a surprise attack scenario where the North would deploy and assemble its forces near the DMZ under the guise of a large-scale military exercise. During such an exercise, the

activity would quickly turn into an attack on South Korea. Seoul would be occupied before US reinforcements arrive. This strategy follows the former Soviet doctrine and was used successfully by Egypt against Israel in 1973. Consequently, any type of large North Korean troop deployment or exercise presents a potential threat to the South and increases tensions.

Modern nations tend to view their national security within the context of cooperative security and disclose their military intentions and capability as clearly as possible. South Korea not only participates in the UN “Arms Registration System on Conventional Arms,” but also discloses its military goals and strategy by publishing periodic military white papers. South Korea declares its large-scale military exercises and events in advance. North Korea has repeatedly complained about the periodic large US-ROK combined exercise known as “Team Spirit” but when South Korea invited North Korean officials to observe it in 1990 and 1991, the North Korea did not accept.

The absence of military communication channels between South and North Korea makes improving these conditions more difficult. Outside of the MAC-related meetings in Panmunjom, there have been no direct means of communication. Although the 1991 Basic Agreement called for establishing official channels of communication, the first military hotline was not installed until September 24, 2002, to support construction of the Gyeongui and Donhae railways across the DMZ. This hotline connects Northern and Southern military authorities to coordinate construction activities and does not serve primarily as a means to build military trust.

4.2.2. Confidence Building Measures for Ground Forces

Nonmilitary Cooperation with Military Implications

The ROK government is trying to facilitate a variety of inter-Korea exchanges through its “Sunshine Policy” toward North Korea. Because some of these activities must cross the military demarcation line (MDL), military cooperation between the two Koreas is required. Direct military cooperation required to implement these activities include:

1. Clearance of obstructions, including mines
2. Guarantee of agreed activities and personal safety in connection with work inside the DMZ
3. Cooperation with inspections at checkpoints on the MDL
4. Accords on DMZ operation and maintenance in connection with said activities.

The 2001 bilateral “41-Point” agreement to reopen the Kyungeui and Donghae highway and railroad links across the DMZ is an excellent example of military-to-military cooperation on construction procedures and communication. The negotiation of this type of agreement builds confidence because it brings Southern and Northern officers together to implement a mutual goal and builds inter-personal relationships. The future operation of the crossings requires coordination in the inspection of trains and vehicles, maintenance of the track and road, and agreement on operational times of the crossings.

Options for activities that require military cooperation and communication are:

- **Option 1: Installation and Operation of a New Reunion Center for Separated Families near the MDL**

(Applicable scenarios: status quo and improved relations)

Such a center requires cooperation in the construction of the Center including construction of roads, clearing of the construction site, shipment of building supplies, and establishment of electricity, water, and communications utilities. After completion of the Center, cooperation is required for the entry and exit of family members into the DMZ and Center.

- **Option 2: Installation and Operation of a Peace Market Inside the DMZ**

(Applicable scenarios: improved relations)

A peace market requires similar cooperation during construction as the Family Reunification Center. It may be at the same location. Warehouses for exchanges between both sides will be also need to be constructed. Goods exchanged across the MDL will require inspections for security and customs taxes.

- **Option 3: Joint Management of the Im-jin River Water Resources**

(Applicable scenarios: status quo and improved relations)

Joint management of the Im-jin River in the western part of the peninsula where it crosses the DMZ requires an understanding of its water flow through the seasons of the year. Measurement of flow rate, water quality, and other characteristics require measurements within the DMZ by scientists from Southern and Northern universities. Such measurements would need to be coordinated and escorted by the militaries in their respective sides of the DMZ. Automatic instruments might be placed near the river to record and transmit data. This requires coordination by the militaries for security of the equipment, selection of locations for

equipment placement, the radio frequency to be used for data transmission, and certification of the peaceful nature of the instruments.

- **Option 4: Tourism Facilities near the Mt. Geumkang Area, Including the DMZ**

(Applicable scenarios: status quo and improved relations)

Initially, tourists to Mt. Geumkang only arrived by passenger ship. Now that the eastern road link has opened, the militaries will need to define procedures for the shipment of supplies and the passing of tourists across the DMZ. Citizenship documents need to be inspected at checkpoints located on the MDL. This is particularly important for tourists who do not have Korean citizenship.

- **Option 5: Designation of Wildlife Sanctuaries Inside the DMZ**

(Applicable scenarios: improved relations)

The isolation of the DMZ over the last half century has made it the largest wildlife refuge on the Korean Peninsula. Rare birds and animals not present in the rest of Korea flourish there. Scientists from Southern and Northern universities would benefit from conducting long-term biological surveys and research in the DMZ. The designation of wildlife sanctuaries and research zones needs to be defined jointly by the militaries accounting for security needs, landmines, and unexploded ordnance. Joint demining of some areas may be required. Access by scientists would need to be coordinated and escorted by the militaries in their respective sides of the DMZ. Checkpoints on the MDL would need to be established for scientists to pass under military escort.

Military-to-Military Contacts

European and Latin American experience has shown that direct contact between members of the Southern and Northern militaries would be useful in increasing mutual understanding and confidence. Military-to-military contacts may take many forms.

- **Option 1: Social Contacts Between Military Personnel**

This option applies to all three military services.

Phase 1: Exchange Visits Between Noncombat Personnel

(Applicable scenarios: status quo and improved relations)

It will be easier to initiate and maintain contacts between non-combat military personnel. There are a number of possible subjects and locations:

- Exchange visits between professors of the respective national defense universities and military academies in their topics of expertise could be organized.
- Delegates participating in South-North military talks could visit the sponsoring nation's military institutes (e.g., Ministry of National Defense/Ministry of People's Armed Forces, Joint Chiefs of Staff/General Staff Office, Military University/Kim Il-sung Military University) for orientation briefings.
- Military academy cadets could visit each other's academies for orientation and training.
- Inter-Korean military athletic competitions could be organized. Each nation may form baseball, volleyball, basketball, table-tennis teams and hold competitions in both nations. In international military athletic competitions, North and South Korea might form joint teams.
- Military academic seminars. These may include academic topics on history, marine and aviation technology, emergency medical treatment, air/sea rescue, vehicle maintenance, or arms control treaties.

Phase 2: Exchange Visits Between Combat Personnel

(Applicable scenarios: improved relations)

As relations between North and South Korea improve, the exchange program should be expanded to include military personnel with combat specialties.

- Visits should be arranged between field commanders as well as high-ranking military officials. The exchange visits between commanders may include the ROK Minister of National Defense, Joint Chief of Staff, military branch Chiefs of Staff and the DPRK Minister of People's Armed Forces, Commander of General Staff, and military branch commanders. These visits should be followed by exchange visits between commanders of army divisions, commanders of naval fleets, and commanders of air divisions.
- Exchange visits to national ports by naval vessels should be conducted. Port exchange visits between naval vessels will include the ports both Koreas have agreed to open through the naval academy cadets cruise training program (Inchon, Busan, Pohang in the South; Nampo, Wonsan, Chongjin in the North).
- Academic seminars should be expanded to security related topics including military doctrines, multilateral security cooperation, and arms control.

- **Option 2: Joint Participation in United Nations Peacekeeping**

South Korea has actively participated in UN peacekeeping operations (PKO) since it joined the UN in 1992. At the end of 2002, 473 ROK military personnel are participating in UN peacekeeping missions in the Western Sahara (MINURSO; 20 medical personnel), Kashmir (UNMOGIP; 3 military observers), Georgia (UNOMIG; 5 military observers), East Timor (UNMISSET; about 450 infantry, transportation, communications, and medical personnel), and Cyprus (UNFICYP; Lt. General Hwang Jin-ha is the force commander – Figure 1).



Figure 1: UN Secretary-General Kofi Annan walking through the buffer zone in Nicosia, Cyprus on 16 May 2002 with UNFICYP Force Commander Lt. Gen. Hwang Jin Ha (2nd from right). (UN photo)

Participation in the U.N.'s peacekeeping activities not only contributes to peacekeeping in the countries directly involved, but also enhances the ROK's image in the international community. Furthermore, such activities contribute to building mutual trust and promoting friendship between participating countries.

As a way to facilitate substantive South-North military-to-military cooperation and to encourage North Korean participation as a full and responsible member of the international community, South Korea should propose to North Korea (a member of the UN) that it participate in peacekeeping operations, jointly with the South. To encourage the North to do so, it may be necessary for South Korea to support the North with necessary training and

logistics materials. Since North Korea is isolated from the international community, the North may accept this proposal as a means to create an image as a peacekeeper, as well as to improve its national reputation. North Korea would benefit materially from the standard UN payments to nations contributing troops to peacekeeping. If the Koreans participated as a joint Korean contingent, it would greatly contribute to building trust between the militaries of the two nations.

The form and location of joint peacekeeping will probably be important to North Korean acceptance of the proposal as noted in the following phased approach:

Phase 1: Introduction of the DPRK to Peacekeeping

(Applicable scenarios: status quo and improved relations)

South Korea, in partnership with the UN Department of Peacekeeping, should propose an orientation meeting on the process of peacekeeping to North Korean officials. Nations experienced in peacekeeping, with whom North Korea has good relations, such as Sweden, Finland, and Canada, could be included. The location should be a neutral location such as Geneva, Switzerland or in one of the peacekeeping countries just listed.

Phase 2: Participation as Military Observers in Africa

(Applicable scenarios: improved relations)

Initial North Korea participation would probably be small scale; therefore, acting as military observers in a multilateral force would be the best first step. Logistic and medical support functions by civilians are also potential roles. North and South Korea both have experience in implementing foreign aid projects in Africa, so this location may be more attractive to the North. There are four ongoing UN peacekeeping missions in Africa:

- MINURSO (Western Sahara, 217 troops)
- UNAMSIL (Sierra Leone, 16,042 troops)
- UNIMEE (Ethiopia/Eritrea, 4,034 troops)
- MONUC (Democratic Republic of the Congo, 4,420 troops)

Given the relative stability in the Western Sahara and South Korean experience there, MINURSO would probably be the best mission to propose to North Korea for cooperation.

Phase 3: Participation as Military Peacekeepers in Other Regions

(Applicable scenarios: improved relations)

As the South and North become more experienced in joint operations in peacekeeping, inter-Korean contingents could participate in more complex and sensitive missions. Potential peacekeeping missions are as follows:

- UNMISSET (East Timor, 3,853 troops): The ROK is a significant participant in this mission. North Korea has criticized Japanese participation. North Korean participation in UNMISSET would build on the South's experience and defuse the North's complaints about Japanese activities.
- UNFICYP (Cyprus, 1,245 troops): Cyprus is an ongoing but stable security problem that has similarities to the Korean Peninsula. A fortified 180-km-long buffer zone, similar to the DMZ, divides the country. The current force commander is an ROK Lieutenant General, and experience gained in this mission may be applicable to a more cooperative approach to monitoring the DMZ.

Safety and Prohibition of Dangerous Military Activities

- **Option 1: Develop Systems for Consultation to Prevent Accidental Conflict**

On September 17, 1992, North and South Korea agreed to the "Non-aggression Protocol" as a measure to avoid accidental military clashes, in accordance with the 1991 North-South Basic Agreement. Under the Non-aggression Protocol, both sides are prohibited from the use of military force or the display of any type of hostile action such as a mock attack. Whenever an early sign of potential offensive military operations is detected, the other side is entitled to demand an explanation of the activity. The Non-aggression Protocol also called for the North-South Joint Military Commission (JMC) to develop measures to prevent accidental military clashes. In the event of an accidental military clash due to a misunderstanding, mistake, or unavoidable accident, the other side will be immediately notified, and preventive measures will be implemented to avoid recurrence. However, military talks by the JMC under the Basic Agreement halted in 1992 because of North Korea's rejection of IAEA inspections as described in Chapter 2. The JMC must be restarted early in the improvement of relations between the North and South. The following steps would expand and reinforce the function of the JMC.

Phase 1: Establish Military Codes of Conduct in Peacetime

(Applicable scenarios: status quo and improved relations)

To avoid incidents likely to happen until the maritime boundaries are made clear, the South and North might consider developing an agreement similar to the Agreement Between the

USA and the USSR On the Prevention of Incidents On and Over the High Seas (INCSEA) signed in 1972. Furthermore, this could be expanded by an agreement similar to the Agreement Between the USA and the USSR on the Prevention of Dangerous Military Activities (PDMA) signed in 1989.

Phase 2: Establish Codes of Conduct in the DMZ

(Applicable scenarios: improved relations)

The DMZ has a long history of incidents. Certain activities within the DMZ should be restricted, and new ones initiated to avoid potentially dangerous confrontations:

- Individual units facing each other across the DMZ should have a means to communicate during emergencies or incidents.
- Patrols within the DMZ should be stopped, and the military police observers authorized by the Armistice Agreement should be restricted to observation posts. Each side should install unattended sensors reporting to the observation posts to remove the need for patrols. Installation and maintenance of the sensors would be performed according to an announced schedule.
- Entry and exit of observers into the DMZ should be conducted according to an announced schedule following defined routes.

Phase 3: Ban Certain Potentially Provocative Military Activities

(Applicable scenarios: improved relations)

Certain military activities should be banned:

- No exercises above battalion level (500 troops) should be conducted within 10 km of the DMZ
- No aircraft should fly within 6 km of the DMZ. Exceptions may be made for emergency medical evacuations or cooperative aerial reconnaissance with concurrent notification to the other party
- No naval exercises should be conducted within 10 km of the NLL.

Communication, Control, and Transparency

• **Option 1: Hotline Installation and Operation**

The installation of a communication link on September 24, 2002, between North and South Korea military authorities to support the reconnections of Kyungeui and Donghae railways is a significant precedent for cooperation. Although primarily intended to coordinate

construction and demining activity, it also serves as a local hotline. Communication between national command authorities would be extremely useful in preventing incidents from escalating. Hotlines between the US and Soviet Union proved their worth during the Cold War and are still maintained between the US and Russia. A telephone link between military headquarters was called for in the 1991 Basic Agreement. Communication only between high military authorities, however, may not be effective in stopping the expansion of an isolated conflict. Communication between the commanders of the military units directly involved in an incident could be just as important. Therefore, hotlines should be installed not only between the high military authorities, but also between the field division commanders of ground forces, between the admirals of the naval fleets, and between the air division commanders.

Phase 1: Establish a Hotline Between Military Headquarters

(Applicable scenarios: status quo and improved relations)

Establish a continuously operated, secure communication link between the Ministry of National Defense and Korean People's Army headquarters as defined in the 1991 Basic Agreement. This link would also serve to enable the heads of state to communicate during emergencies.

Phase 2: Establish a Hotline Between Senior Field Commanders

(Applicable scenarios: improved relations)

Establish communications links between senior commanders facing each other across the DMZ or the NLL. The North may be reluctant to establish such links at first and prefer that the designated point of contact on the Northern side should be a political officer attached to the commander's staff.

Phase 3: Establish Procedures for Commanders to Communicate During Emergencies

(Applicable scenarios: improved relations)

Establish emergency radio frequencies, signal lights, or flag codes along with procedures for local commanders to communicate during natural disasters, accidents, or incidents of unintended conflict.

- **Option 2: Military Information Exchange**

South and North Korea conduct little direct exchange of military information. South Korea unilaterally provides defense information internationally with its annual Defense White Paper

describing the strategic mission of the armed forces, participates in the UN Arms Register of Conventional Arms that identifies its exports and imports of weapons, and announces major exercises in advance. North Korea does make occasional public statements about its armed forces, such as the announcement in 2002 that it was making a small reduction the number of its military personnel. An expanded scope of exchanged information might include emergency situations, natural disaster descriptions, summaries of military power, and military white papers that contain basic military policy, military expenditure, or acquisition/transaction of major weapons.

Phase 1: DPRK Participation in International Military Transparency Programs.

(Applicable scenarios: status quo and improved relations)

North Korea should be encouraged to match current South Korean declarations. South and North Korea voted to approve UN resolution 46/36 L that established the arms register in 1991, but has not participated in the process.²⁴ The South should encourage the North to also make this declaration bilaterally. A bilateral declaration could be conducted more frequently than the annual UN declaration and contain features of special interest to the two Koreas.

Defense white papers should include the distribution of military budget by category, such as manpower and equipment operation/maintenance. The UN's standard formulas for declaring costs should be used so that direct comparisons can be made. Declarations can be exchanged through the MAC mechanism or a meeting at a location like the Mt. Geumgang tourist area if a direct communication link has not been established. The use of public news media should also be considered.

Phase 2: Exchange of Information About Military Organization and Facilities

(Applicable scenarios: improved relations)

As relations between North and South Korea improve, military information about more sensitive topics should be exchanged. These exchanges can be the basis for future agreements in operational or structural arms control.

²⁴ On 6 December 1991, the UN General Assembly adopted resolution 46/36 L entitled "Transparency in Armaments," which requested the Secretary-General to establish and maintain at UN Headquarters a universal and nondiscriminatory Register of Conventional Arms including data on international arms transfers and information provided by Member States on military holdings, procurement through national production, and relevant policies. The Register comprises seven categories of major conventional arms: tanks, armored vehicles, large caliber artillery systems, combat aircraft, attack helicopters, warships, and missile/missile launchers. The registry and its associated database have been in operation since 1992.

- Declaration of military features in the DMZ such as the locations of observation posts, fortifications, land mine zones, and entry points into the DMZ
- Declaration of the military power of major units by providing a description of their table of organization and associated equipment and weapons
- Declaration of troop deployment by providing the location of major units
- Declaration of the location of major logistics support facilities such as ammunition and oil storage depots, repair and maintenance facilities, etc.
- Descriptive information about major defense industry sites.

In order to exchange the above-mentioned military information, a specific format for shared information should be negotiated (e.g., name of the weapon system in the case of weapons; class of unit such as brigade, division) including preparation forms and a time for the information exchange.

- **Option 3: Disarmament of the DMZ and use for peaceful purposes**

(Applicable scenarios: improved relations)

The DMZ should be restored to its original purpose as a monitored buffer zone and initiatives described earlier for non-military cooperation should be initiated. To truly demilitarize the DMZ, the military installations and weapons/equipment present in the respective sides of the zone should be declared. After joint on-site inspections by Northern and Southern representatives, each side will remove their respective facilities, other than observation posts within an agreed-upon, pre-determined period. The use of electronic sensors to supplement military observers in the DMZ should be tested in a joint evaluation.

- **Option 4: Advance Notice of Large-Scale Military Activities**

Phase 1: Study Precedents for Transparency

(Applicable scenarios: status quo and improved relations)

The Vienna Document in Europe is a possible model for transparency in military activities, and the two Koreas should jointly study it for lessons that can be applied to the Korean Peninsula. The content and the scale of activities described in the Vienna Document must be adjusted for the Korean situation. NATO or OSCE representatives could facilitate the joint study by hosting a neutral workshop.

Phase 2: Exchange Schedules of Military Activity

(Applicable scenarios: status quo and improved relations)

An annual calendar of military activity could be exchanged including the names of major military activities, associated objectives, dates of the activity, location, and size. Advance notice of military training exercises or movements would be particularly useful. The initiating party could notify the other party in writing by fax or transfer of documents one month before the scheduled activity. One week before the activity, the initiating party should confirm its intent by document or telephone. The following military activities could be included in an advance notice agreement:

- An exercise or troop movement capable of significant size
 - Army: an exercise or movement by 12,000 or more troops
 - Navy: an exercise or maneuver by 6 or more combat vessels
 - Air Force: an exercise by 36 or more combat aircraft
- A troop movement that might be mistaken for an offensive military operation.
 - The movement or exercise of special operations force (SOF) units with 500 or greater troops. In addition, the movement aircraft or naval vessels that are capable of transporting a SOF unit of this size should be declared.
- All types of air defense, anti-ship, and ballistic missile launch exercises should be declared.

Phase 3: Exchange Military Observers

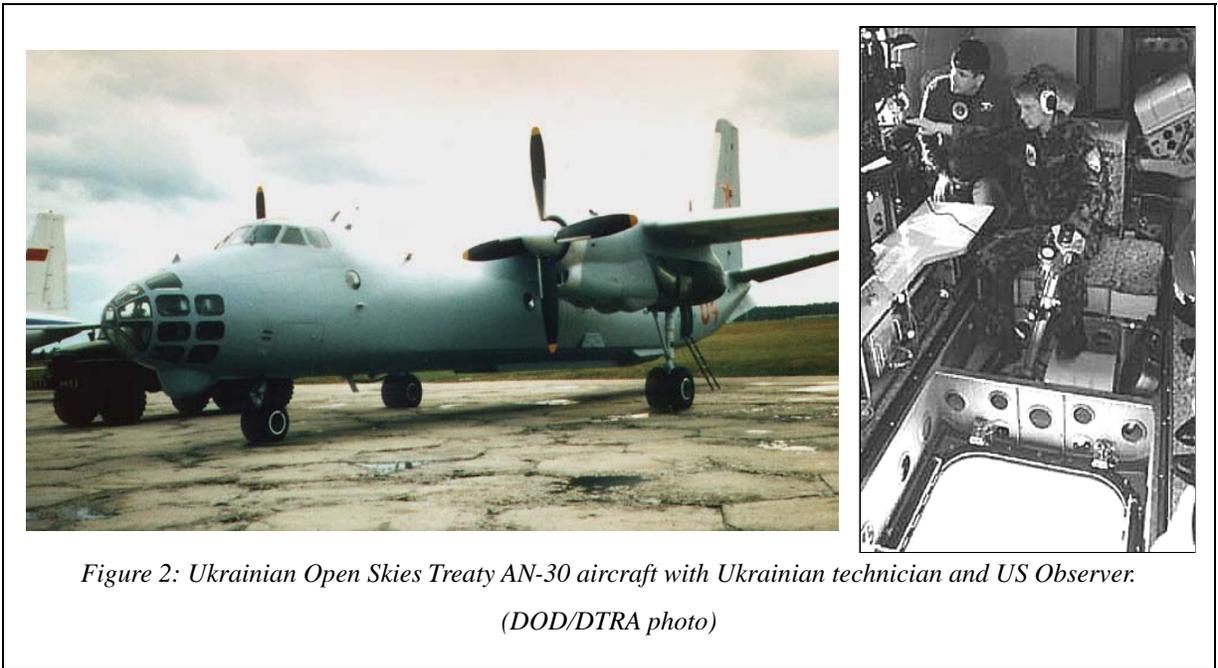
(Applicable scenarios: improved relations)

As experience and confidence increase, observers could be included in exercises or movements to verify the level of the declared activity. Activities larger than a defined level could be banned:

- Army: An exercise involving greater than any of the following: 25,000 troops, 120 tanks, or 1,000 SOF troops.
- Navy: An exercise including 12 or more combat vessels.
- Air Force: An exercise involving more than 60 combat aircraft.
- **Option 5: Implement Cooperative Aerial Observation**

The 1992 Open Skies Treaty permits signatories (the US, Canada, Europe, and the former Soviet States) to fly over each other's territory with short notice using sensors and procedures defined by the treaty. The aircraft has liaison officers from the host country on board and all treaty signatories have access to all images (Figure 2). Hungary and Romania negotiated their

own bilateral agreement for cooperative aerial reconnaissance in 1990. The treaty limits the level of detail in the images to prevent detailed intelligence information from being collected.



The sharing of aerial images of military facilities in the Korean Peninsula would provide transparency into changes in military status and increase confidence that preparations for an offensive are not underway. North Korea has little ability to acquire images from aircraft for intelligence and uses submarines, infiltrators, and resident agents to collect information about military status. These actions are highly provocative and have resulted in conflict and deaths. South Korea, through its participation in the Combined Forces Command (CFC), has access to images from US aircraft and intelligence satellites. Cooperative aerial reconnaissance would benefit both countries. The North could cease its provocative intelligence collection activities in the South, thereby reducing tensions. Because US and ROK aircraft do not overfly North Korea and there are timing and weather limitations to the use of satellites, the South would obtain a new source of information about the military status of the North that complements that collected by the US.

Phase 1: Provide Orientation to Open Skies Treaty for Southern and Northern Militaries
(Applicable scenarios: Status quo and improved relations)

Members of the Open Skies Treaty could provide orientation to representatives of the respective militaries. This orientation meeting could be held in Europe and describe the procedures defined in the treaty in detail. The technical process of image collection and

interpretation would then be demonstrated to the Korean delegation, including a demonstration flight.

Phase 2: Provide Commercial Satellite Images to North Korea to Demonstrate the Use of Shared Images

(Applicable scenarios: improved relations)

A number of countries (e.g. the US, France, Israel, Russia) operate commercial satellites that provide images with sufficient resolution to have military significance (Figure 3). If these countries were willing to grant a temporary exemption to their export control laws, the South might provide the North with images of locations it requests in the South for a short period of time (1 month). The purpose of this unilateral action by South Korea is to demonstrate the utility of cooperatively obtained aerial imagery as a tool to increase military transparency. It is intended to serve as a transitional CBM between the proposed instructional activities in Phase 1 and the proposed operational activities in Phase 3.



Figure 3: 1.0 m resolution Image from the Ikonos Satellite (Space Imaging Inc.)

Phase 3: Establishment of an Inter-Korean Agreement for Cooperative Aerial Observation

(Applicable scenarios: improved relations)

Based on the experience in the first two phases, the South and North could negotiate an agreement for cooperative aerial observation and overflight that takes into account the unique characteristics of the Korean security environment and geography.

Security Building Measures and Arms Control

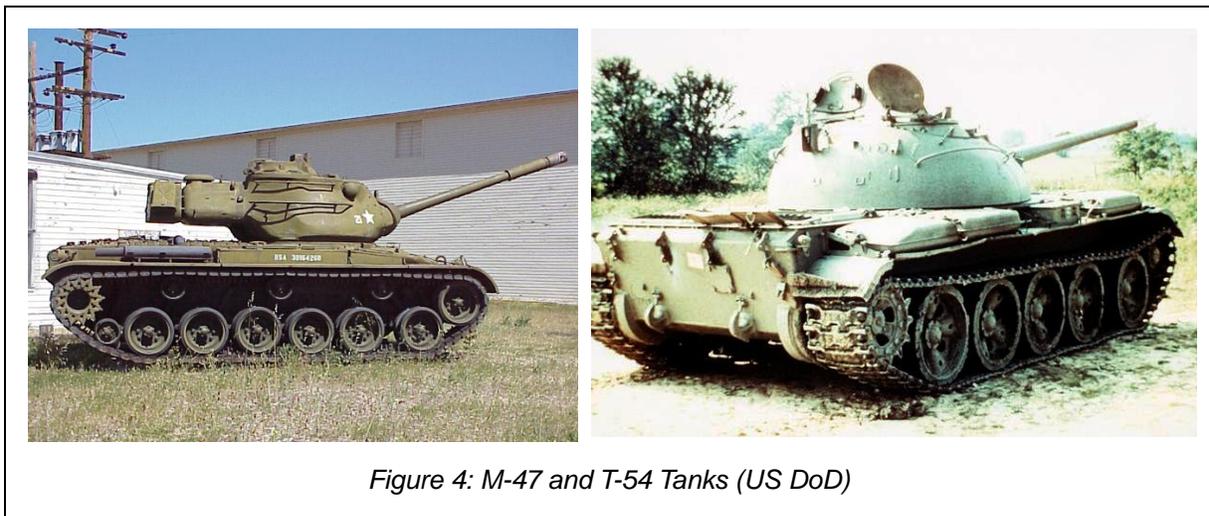
- **Option 1: Retirement of Obsolete Weapons**

Both the ROK and DPRK armies have large quantities of obsolete equipment. This equipment would have little operational value during a conflict. The higher level of maintenance required for obsolete equipment decreases readiness, places a burden on army logistic resources, and increases costs.

Phase 1: Destruction of Obsolete Tanks

(Applicable scenarios: status quo and improved relations)

The ROK Army possesses about 400 M-47 tanks. Although they have been improved, this design is over 50 years old (Figure 4). The DPRK Army has perhaps 1,800 of the equivalent T-54/55 tank (a 45-year-old design). Equal numbers of tanks could be designated for destruction, and the implementation can be verified visually through on-site inspection. This option could also be implemented unilaterally by South Korea.



Phase 2: Joint Survey and Destruction of Obsolete Equipment

(Applicable scenarios: improved relations)

Inspectors from the ROK and DPRK armies can jointly assess remaining holdings of obsolete equipment such as ROK M-48 and DPRK T-54/55 tanks, armored personnel carriers, and artillery. A formula for equivalent reductions should be negotiated and destruction verified by visual inspection and identification tags.

4.3. Naval Forces

4.3.1. Sources of Tension

The North Korean Navy includes a large number of guided missile boats, small submarines, and high-speed landing craft that support a surprise attack strategy including the infiltration of SOF troops. The infiltration of intelligence agents and SOFs by the North Korean Navy has been a chronic problem for the ROK since the Armistice Agreement. South and North Korea do not exchange military information about fleet exercises or maneuvers, and there is no “military channel” for communication during times of crisis between navies.

Currently, the most serious obstacle to confidence building between the two naval forces is the North’s incursions across the UN Command’s NLL. North Korea has stated that it does not recognize the NLL because it was not defined in the Armistice Agreement. Northern intrusions resulted in combat during 1999 and 2002.

4.3.2. Confidence Building Measures for Naval Forces

Safety and Prohibition of Dangerous Military Activities

- **Option 1: Joint Search and Rescue (SAR) Activity**

Both nations rely heavily on sea routes for commerce, and a large number of ships from other countries pass near the Korean coastline. Maritime accidents may occur, and the navies and coast guards of both Koreas should plan for cooperative search and rescue.

Phase 1: Establish a Protocol for Communication During SAR Activity

(Applicable scenarios: status quo and improved relations)

The zone of primary responsibility for SAR for each side must be defined and procedures to request assistance developed. Communication protocols must be established, and the communication links must be checked on a regular basis. Procedures required to enter the other’s territorial waters for rescue operations must be defined.

Phase 2: Conduct Joint Training and Exercises

(Applicable scenarios: status quo and improved relations)

Training and joint exercise should be conducted on a regular basis. The South could offer to provide equipment to the North.

Phase 3: Expand Scope of Cooperation to Include All Emergencies

(Applicable scenarios: status quo and improved relations)

Natural emergencies such as typhoons periodically cause damage on the Korean Peninsula. Accidents such as oil and chemical spills might occur at sea. Naval and maritime police vessels may be needed to contain spills, transport supplies and relief personnel, provide medical aid, and escort vessels carrying relief supplies. Both sides would need to expand the basic agreement of search and rescue to enable such cooperation.

- **Option 2: Measures to Prevent Accidental Naval Clashes**

Phase 1: Use International Procedures for Movement by Naval Vessels in Contact

(Applicable scenarios: status quo and improved relations)

Naval vessels should declare that they will abide by the Convention on the International Regulations for Preventing Collisions at Sea (COLREG) and the International Code of Signals as promulgated by the International Maritime Organization (IMO) when in sight of one another. These commonly accepted, and internationally binding measures define the operational behavior by the ships. Both sides could unilaterally announce adherence to these well-known procedures.

Phase 2: Negotiation of South-North Incidents at Sea Agreement

(Applicable scenarios: status quo and improved relations)

An agreement should be negotiated to prevent maritime clashes between military vessels when they meet in international and territorial waters. The Prevention of Incidents on the High Seas (INCSEA) signed by the US and the Soviet Union in 1972 might be used as a model and adapted to the circumstances of the Korean Peninsula, including the disputed NLL area where commercial fishing and naval activities occur in very close proximity.

Phase 3: Integrate Security and Economic Cooperation

(Applicable scenarios: status quo and improved relations)

The North's incursions across the NLL are related to economic factors and CBMs should recognize this fact. In conjunction with north-south sea routes (e.g., Haejoo–Inchon), a special sea route for Southern and Northern vessels could be designated and jointly monitored. Only commercial cargo vessels would be allowed to pass the NLL along the designated sea route.

The concept of a jointly managed sea route can be expanded to create a joint blue crab fishery in the West Sea along the NLL that is maintained and administered by both sides.²⁵ This

²⁵ Both ROK and US maritime experts have highlighted the benefits of joint fishing areas as found in, "The North/South Korea Boundary Dispute in the Yellow (West) Sea," *Marine Policy* 27, 2003 by Jon Van Dyke,

ROK-DPRK “Joint Fishing Venture” may alleviate naval confrontations by deferring resolution of the boundary issues associated with the NLL and open the blue crab fishing grounds near the NLL to fishermen from both sides. A joint fishing zone, similar in principle to the joint manufacturing projects in the DPRK’s free trade zones, would regulate access to areas that are currently prohibited to both sides. Currently, the ROK has designated a “red line” approximately 5.6 km south of the NLL to prohibit ROK fishing vessels from going too near the NLL and provoking an incident.

Therefore, because Northern fishermen are blocked by the NLL and Southern fishermen are blocked by the red line, a joint fishing area could result in economic gains to both sides. For example, DPRK fishermen normally sell their catch to China and may not have the ability to distribute their catch to wider international markets and obtain higher prices. The Joint Venture would also enable more efficient management of the crab and fish populations to ensure sustainable resources and profits. The South would benefit from the North’s lower production costs, and the North would benefit from the South’s extensive international marketing capability.

Appendix B describes a potential structure for a Joint Fishing Venture.

Military-to-Military Contacts

Social contacts between naval personnel were included in the description of activities in the section on ground force CBMs. The following options would build on that foundation:

- **Option 1: Cooperation on Prevention of Maritime Crimes**

(Applicable scenarios: improved relations)

Foreign vessels frequently fish illegally in Korean territorial waters and economic zones, particularly in the West Sea. In addition, drug smuggling and piracy occur. Criminals sometimes use the divided control of Korean waters to their advantage. The navies and maritime police of both countries can counter these illegal activities if they coordinate their activities. This cooperation in practical matters of mutual interest will build confidence between the naval forces. To make cooperation work smoothly, it will be necessary to reach an agreement on how to communicate when criminal activities are detected. Agreement is also needed on the roles of each side as related to chase and capture, plus the procedures for arrest and extradition.

Mark Valencia and Jenny Garmendia, as well as “Designation of joint fishing area suggested to prevent military clashes in West Sea,” *Korea Herald*, 2 July, 2002.

- **Option 2: Joint Participation of Naval Vessels in UN Peacekeeping Operations**

(Applicable scenarios: improved relations)

As discussed in the section on ground forces, South and North Korea could jointly provide peacekeeping missions to the UN. The North benefits by improving its international reputation and receiving payment from the UN for its services. Some peacekeeping activities have naval components including coastal security, minesweeping, transport of personnel and supplies, and prevention of smuggling and infiltration. Both navies are experienced in patrolling shorelines in small vessels that are applicable to peacekeeping missions. To conduct joint peacekeeping operations, either with separate vessels or integrated crews, it will be necessary to establish a joint code of signals and communication and participate in joint education and training.

Communication, Control, and Transparency

- **Option 1: Notification of Plans for Naval Vessel Construction**

(Applicable scenarios: status quo and improved relations)

Naval vessel construction is a focal point in a military build-up. Notification of national plans to construct or purchase naval vessels is analogous to declaring the national naval strategy to each other. These plans can be included in the Annual Defense White Paper prepared and exchanged by each country, as was described in the section on ground forces.

Security Building Measures and Arms Control

- **Option 1: Reduction in Amphibious Assault Ships**

(Applicable scenarios: improved relations)

Both North and South Korea have relatively large fleets of amphibious ships. This force is a legacy of amphibious operations during the Korean War. Although there is a role for this type of ship in supporting activities on offshore islands, their mission of amphibious landings of troops is inherently offensive. A reduction of this type of ship would remove a threat that contributes to tensions and can be verified by aerial or on-site inspection.

South Korea could retire all amphibious ships except the four new *Kojoonbong*-class ships (Figure 5). This class of ship is particularly useful in supporting peacekeeping operations. North Korea has more amphibious ships than the South but they are smaller in size (varying from 82 to 350 tons). Reductions might be based on the total tonnage of ships retired.



Figure 5: Example of ROK Navy Un Bong Class Landing Ship (prior to modernization). (US Navy)

- **Option 2: Elimination of Small Submarines**

(Applicable scenarios: improved relations)

Both South and North Korea maintain fleets of small submarines (under 200 tons) that are useful for infiltration and intelligence gathering missions. They have no effective role in sea control. An agreement to retire and destroy this category of submarine could be verified by on-site inspection and would remove a threat that contributes to tensions. For example, the 1996 grounding of a DPRK submarine was highly provocative and damaging to South-North relations. An agreement of this type could apply to the estimated 21 DPRK *Sano*-class and 3 ROK *Dolgorae*-class and 8 ROK *Dolphin*-class submarines.

4.4. Air Forces

4.4.1. Sources of Tension

Conflict between the North and South Korean air forces over the past 50 years has been minimal in comparison to ground or maritime conflicts. A US EC-121 reconnaissance aircraft was shot down in 1969 over international waters by DPRK aircraft, and several US aircraft have escaped similar incidents. There has been a series of defections by North Korean pilots in their aircraft. In addition, there have been several incidents of North Korea sponsoring aircraft hijackings, beginning with South Korean airliners hijacked in 1958. North Korean agents destroyed a KAL aircraft by placing a bomb in its luggage in November 1987. Recent international events have re-established aircraft hijacking as a major security concern.

Table 2: Comparison of Northeast Asian Air Forces²⁶

Force	DPRK		ROK		Japan		China	
Personnel	86000		63000 (USAF: 8700)		44200 (USAF: 13550)		420000	
Aircraft	Type	Number (Status)	Type	Number (Status)	Type	Number (Status)	Type	Number (Status)
Fighter	MiG-17	107 (O)	F-16	153 (M)	F-1	40 (F)	Q-5	450 (F)
	MiG-19	100 (O)	F-5	185 (O)	F-4E	70 (O)	SU-27	48 (M)
	MiG-21	150 (F)	F-4	130 (O)	F-15J	170 (M)	J-8	150 (F)
	MiG-23	45 (F)	A-37B	22 (O)	F-15C/D (USAF)	54 (M)	MiG-21	500 (O)
	MiG-29	40 (M)	F-16 (USAF)	70 (M)	F-16 (USAF)	36 (M)	MiG-19	1800
	Q-5	40 (F)	A-10/OA-10 (USAF)	32 (F)				
	Su-7	18 (O)						
	Su-25	25 (M)						
Bomber	IL-28	80 (O)	None		None		IL-28	200 (O)
							Tu-16	120 (O)
Recon	None		RF-4C	18 (O)	RF-4E	20 (O)	N/A	
			RF-5A	5 (O)	E-2C	10 (F)		
			Hawker 800 RA/XP	10 (F)	E-767	4 (M)		
Transport	An-2	300 (O)	BAE 748	2 (F)	C-130H	10 (M)	Tu-154	15 (M)
	AN-24	6 (O)	Boeing 737	1 (M)	C-1	20 (F)	IL-18	2 (O)
	IL-18	2 (O)	C-118	1 (O)	C-130 (USAF)	24 (M)	IL-76	14 (M)
	IL-62M	4 (M)	C-130H	10 (M)	C-9/21 (USAF)	7 (F)	Y-5	300 (F)
	Tu-134	2 (F)	CN-235/220	20 (F)			AN-26	45 (O)
	Tu-154	4 (M)					B-737	6 (F)
Training	Yak-18	187 (O)	F-5B	25 (O)	T-1	22 (O)	MiG-19	100 (O)
	MiG-15	35 (O)	T-37	50 (O)	T-2	41 (F)	MiG-21	50 (O)
			T-38	30 (F)	T-3	43 (O)	J-8	50 (F)
			T-41	25 (O)	T-4	60 (M)		
		Hawk Mk-67	18 (M)	T-400	10 (M)			
Helicopter	Mi-24	24 (M)	UH-1H	5 (O)	CH-47	10 (F)	AS-332	6 (M)
	MD-500	87 (M)	Bell 212	4 (F)	U-125	13 (F)	Bell 214	4 (M)
	Mi-2	139 (O)	CH-47	6 (F)	UH-60	15 (M)	Mi-8	30 (O)
	Mi-8	7 (O)	AS-332	3 (F)	KV-107	15	Z-5	100 (O)
	Z-5	48 (O)	VH-60	3 (M)			Z-9	30 (M)
	Mi-17	8(F)	MH-53J (USAF))	5 (M)	HH-60 (USAF)	5 (M)		
		AH-64D (USA)	40 (M)					

²⁶ The International Institute for Strategic Studies, *The Military Balance 2002-2003*. In Table 2, modern aircraft are designated with a status of “M,” obsolescent but functional aircraft by “F”, and obsolete aircraft by “O.”

North and South Korea both possess relatively large air forces as shown in Table 2. Note that Table 2 includes US aircraft based in the South Korea and Japan. South Korea is modernizing its air force and has signed an agreement with the US to purchase 40 F-15Ks. It plans to continue the F-XX program for a next-generation fighter. Most of North Korea's air force is obsolescent or obsolete, with relatively few modern aircraft such as the MIG-29 fighter. In spite of its relative economic weakness, the North has sought to purchase advanced aircraft from China, Russia, and former Soviet States. Conditions are thus in place for an arms race. The modernization of the Korean Air Forces, however, is partly motivated by the perceived need to defend themselves against air threats from neighboring countries – a threat that continues if reunification occurs.

4.4.2. Confidence Building Measures for Air Forces

Safety and Prohibition of Dangerous Military Activities

- **Option 1: Measures to Avoid Conflict During Air Operations**

North Korean pilots have periodically defected to the South since the Korean War. Recently, there has been a steep increase in civilian North Korean defectors because of economic hardship and instability, and more incidents of North Korean pilot defections with aircraft are possible. Defecting North Korean aircraft have the potential to result in unintended conflict. The ROK air force dispatches interceptor aircraft immediately after approaching North Korean aircraft are detected and the interceptors must determine whether the aircraft is hostile or defecting. At the same time, North Korea will probably attempt to stop the defection by launching interceptors and alerting air defense sites. A dangerous situation may develop if North Korean interceptor aircraft violate the South's airspace and the ROK air force attempts to send them back. If a fighter from either side were shot down during this confrontation, the tension between the two Koreas would greatly escalate.

Phase 1: Improve ROK Air Force Command and Control

(Applicable scenarios: status quo and improved relations)

The ROK Air Force is constrained by the requirement to conduct air operations under the Combined Forces Command (CFC) and does not have its own chain of command to quickly make decisions and deliver orders if a single DPRK aircraft defects. The ROK Air Force needs to be able to make independent judgments and react quickly in these special circumstances. The early detection and identification of North Korean defectors requires a more responsive airspace information collection system. The ROK air force should work within the CFC to develop a new system that is intended to respond to intrusions by a single

aircraft. In addition, the ROK Air Force should develop a new counter-air doctrine to respond to defections and actions the North may take to prevent them. This doctrine should be similar to the doctrine for the maritime operations that has been revised since the 2002 clash in the East Sea. Operational procedures should also be able to handle situations where a North Korean air force pilot may attempt a surprise attack or suicide attack on the major facilities of South Korea under the guise of defection. Although the establishment of this revised doctrine is a unilateral action, the policy should be declared to the North.

Phase 2: Develop Inter-Korean Agreement for Aerial Emergencies

(Applicable scenarios: status quo and improved relations)

An inter-Korean agreement to prohibit aircraft from crossing into each other's territory (including territorial waters) should be established. This agreement should, however, include provisions for aircraft in distress that need to make emergency landings or have lost their ability to navigate. Both countries should agree to follow the procedures defined in the Annex of the Convention on International Civil Aviation. The air forces would jointly establish a special code of aircraft-to-aircraft signals for warnings and safety guidance in the event of interception as a result of an intrusion.

- **Option 2: Measures to Avoid Conflict During Hijackings of Aircraft**

Since the September 11, 2001, terrorist attacks in the US, nations are making major investments to prevent aircraft hijacking and terrorist attacks. No matter how thoroughly nations prepare to prevent hijackings however, security cannot be completely guaranteed. Several measures would increase mutual security and increase confidence between the two Koreas.

Phase 1: Demonstrate That Airport Security Standards Meet International Standards

(Applicable scenarios: status quo and improved relations)

Both Koreas should issue a joint declaration defining terrorism, including incidents in the air, and reaffirm their commitment to the Anti-hijacking Convention. Both nations should adopt the new international standards for airport security systems and demonstrate that they have been implemented.

Phase 2: Declare ROK and DPRK Policies for Responding to Hijackings

(Applicable scenarios: status quo and improved relations)

A code of conduct and doctrine of operations should be established for the ROK air force defining actions during situations when an aircraft is hijacked in South Korean airspace or a hijacked aircraft enters South Korean airspace. The DPRK air force should establish and declare its own doctrine for responding to hijackings.

Phase 3: Develop Procedures for Coordination in Response to a Hijacking
(Applicable scenarios: improved relations)

The two air forces should coordinate their respective doctrines for responding to a hijacking. Procedures to communicate and coordinate responses during a hijacking should be established between the existing civilian flight control centers in Pyongyang and Taejon. These centers currently communicate to coordinate passage of civilian flights.

Security Building Measures and Arms Control

- **Option 1: Retirement of Obsolete Aircraft**

In the past, North Korea implied its willingness to reduce its military power to a certain level. In fact, arms reduction has been a major issue between the two Koreas for a long time, but an agreement has never been reached because of the substantial differences of opinions. If the two Koreas begin discussion of arms reduction, the disposal of outdated fighters (such as the DPRK MIG-17 and 19 and the ROK F-5A/B – Figure 6) from both air forces could be the starting point for an agreement.



Currently, both Koreas possess a large number of outdated aircraft that have far exceeded their service life. Western countries generally regard the service life of a fighter as 20 years. As seen in Table 2, 65% of the aircraft (F-5A/B, F-4D) possessed by the South Korean air force are outdated (30 years or older) and 88% of the fighters possessed by North Korea are

outdated (40-year-old Mig-17 and 19s constitute 40% of fighters). The North and South Korean air forces waste resources to maintain these aircraft with little operational value. If outdated aircraft were retired from active duty by both sides, North and South Korean air forces would be smaller, less costly, and less threatening. They will still constitute an effective deterrent to any future threats – both before and after eventual unification.

Phase 1: Declaration and Verification of Obsolete Aircraft

(Applicable scenarios: status quo and improved relations)

The first step in confidence building would be for each side to assess its aircraft inventory unilaterally and declare some number (by type) to be obsolete and scheduled for destruction. Military observers from each side could be invited to verify the destruction of these aircraft according to the declared schedule by on-site inspection. The Conventional Forces in Europe Treaty is a precedent for this type of inspection.

Phase 2: Joint Survey of Obsolescent Aircraft

(Applicable scenarios: status quo and improved relations)

As the two air forces gain experience in Phase 1, more extensive arms reduction could take place. Rather than setting a goal to reduce a certain percentage, military observers from each side could jointly inspect each air force to assess how many aircraft are outdated and/or are in poor condition. These aircraft could then be scheduled for retirement from active duty and destruction in a balanced and mutually verifiable way based on the experience in Phase 1.

Phase 3: Introduce Limitations on Offensive Capability

(Applicable scenarios: status quo and improved relations)

As the air forces become smaller, but with a more sophisticated force structure, additional measures may be introduced to demonstrate a defensive, rather than offensive strategy. This strategy should be declared publicly. These measures would limit certain technical capabilities associated with aircraft. Some potential actions are listed below that could be verified visually by on-site inspection without compromising national security information.

- Declare the primary mission of each air force to be air defense. Eliminate aircraft that solely have a bombing function.
- Introduce constraints that restrict range of aircraft and consequently their offensive capability. Actions include the following:
 - Banning in-flight refueling equipment
 - Banning external, droppable fuel tanks

- Altering internal fuel tanks to restrict capacity.
- Limit the number and/or type of weapons that may be carried. This can be achieved by removing or neutralizing mounting points for weapons.

5. Weapons of Mass Destruction

Weapons of mass destruction are the most difficult and controversial topic in inter-Korean relations. The ROK has been an active participant in the negotiation and implementation of international norms for nonproliferation [NPT, Biological and Toxin Weapons Convention (BTWC), CWC, Comprehensive Nuclear Test Ban Treaty (CTBT)]. The DPRK has ratified the BTWC and the NPT but has not participated in the international conferences on strengthening the BTWC and has withdrawn from the NPT for the second time. It has not signed the CWC or CTBT. Confidence-building initiatives by the ROK must acknowledge its responsibilities to international non-proliferation treaties and encourage DPRK adherence to these same regimes.

5.1. Weapons of Mass Destruction – Nuclear

5.1.1. Sources of Tension

Compliance with the 1992 Joint Declaration on the Denuclearization of the Korean Peninsula

The Joint Declaration was a significant CBM between South and North Korea because it extended the nonproliferation goals of the NPT. Both countries gave up the options of uranium enrichment and plutonium reprocessing in this agreement. This was in spite of the economic attractiveness of spent fuel reprocessing to South Korea's sophisticated and growing nuclear power industry. The agreement also called for mutual inspections under the JNCC to verify that reprocessing and enrichment facilities are not operating. Implementation of the verification provisions of the Joint Declaration has been stalled since 1993 when the organizational and inspection planning negotiations for the JNCC collapsed. The October 2002 statement by North Korea to the US that it has a uranium enrichment program violates the Joint Declaration, as do its later actions to withdraw and reprocess spent reactor fuel stored at Yongbyon (previously under international monitoring). South Korea remains committed to the goal of the Joint Declaration in spite of North Korea's statement that it now considers the Agreed Framework with the US to be void.

Delays in the KEDO Process

The construction of the two LWRs in Kumho, North Korea, is about five years behind the original schedule, and more construction delays are likely (Figure 7). The responsibility for the delay is borne by both sides; but the North has frequently been inflexible on practical matters associated with implementing the agreement. North Korea has claimed that these delays violate the original agreement and that it should be compensated for the loss of

electricity. As discussed in Chapter 2, North Korea disagrees with KEDO and the IAEA about the time schedule for North Korea to fully comply with its IAEA nuclear safeguards agreement. The analysis and verification of North Korea's activities at the Yongbyon facility prior to 1992, as required by the NPT, is complex and may take three to four years.



Figure 7: The KEDO construction site in Kumho, North Korea in 2002 (KEDO)

South Korea, as the largest financial contributor to KEDO, is most affected by increased costs resulting from these delays. The delays and the IAEA verification process will increase discord between South and North Korea. Furthermore, the KEDO executive committee stated in November 2002 that shipments of fuel oil would stop in December and not restart until DPRK began to dismantle its uranium enrichment program. There is the possibility that KEDO will also halt the construction activity at the reactor site, although no decision has been made to date.

Compliance with 1994 Agreed Framework and NPT

North Korea is in violation of the Agreed Framework, which explicitly referenced the 1992 Denuclearization Agreement to not enrich uranium. The secret uranium enrichment program constitutes a breach of both agreements, as well as its obligation under the NPT to submit its enrichment program to international safeguards. In addition, North Korea announced its

intention in December 2002 to restart the reactor shut down under the Agreed Framework. It is impossible to verify the status of reactivation at this point.

The Nuclear Threat to South Korea

The acquisition of nuclear weapons by the DPRK would be destabilizing to inter-Korean relations. When combined with ballistic missiles, DPRK nuclear weapons can threaten the ROK, Japan, US forces in Asia, and potentially the US homeland. Possession of nuclear weapons by the DPRK thus poses several problems for the ROK:

1. Domestically, in the form of the potential for intimidation by the North;
2. Regionally, in the sense that Japan may be motivated both to increase its armaments and/or to seek nuclear weapons of its own; and
3. Internationally, because the ROK-US defense treaty obligates the ROK to aid the US if nuclear weapons were threatened or used against US forces or territory.

5.1.2. Options for Confidence Building in Nuclear Topics

- **Option 1: Initiate Scientist-to-Scientist Interactions**

Phase 1: Inter-Korean Interactions

(Applicable scenarios: status quo and improved relations)

This option is similar in principle to the military-to-military contacts proposed in the previous chapter. Much of the information the ROK has about DPRK nuclear activities originates in the US, China, Japan, Russia, or some other third party, and facts may become distorted. Therefore, direct interactions between Southern and Northern nuclear specialists in technical forums will provide a new source of information. Exchanges might occur between the Korea Atomic Energy Research Institute (KAERI) at Daejeon and the DPRK nuclear center at Yongbyon. The initial interaction could include the discussion of operational experience or training without requiring the exchange of data. Topics for discussion might include the following:

- Safety procedures and risk assessment
- Storage and transportation of radioactive material
- Accounting and management of fissile material
- Radioactive material disposal

Phase 2: Sponsor DPRK Participation in Regional and International Technical Meetings

(Applicable scenarios: status quo and improved relations)

It is important that North Korea understand how the rest of the world operates nuclear facilities in a safe manner. South Korea should encourage North Korean participation in international meetings. An important concept for the North Koreans is the obligation of nuclear facility operators to demonstrate safe operations and the benefit of public transparency in nuclear operations. An example is the Nuclear Experts Working Group of the Council for Security Cooperation in the Asia-Pacific (CSCAP). This organization has conducted several tours of nuclear facilities in Northeast Asia, Canada, and the US and currently exchanges real-time safety information about member institution operations through a website. The North Koreans would also benefit from tours and meetings at the European Atomic Energy Commission (EURATOM) and ABACC.

- **Option 2: Reactivation of the JNCC and Mutual South-North Nuclear Inspections**

Phase 1: Conduct Visits to National Nuclear Facilities by Senior Ministers

(Applicable scenarios: improved relations)

One of the key steps in improving relations between Argentina and Brazil in the late 1980s was the visit by each head of state to a major nuclear facility in the other country. The presidential visits were preceded by visits from senior government officials. Although, symbolic, these visits were significant because they demonstrated to the publics of the two nations and the international community that both governments were serious about reducing tensions resulting from national nuclear programs.

Phase 2: Develop a Group of Nuclear Engineers Trained as Inspectors

(Applicable scenarios: improved relations)

Between 1992 and 1993, the JNCC held 13 meetings at Panmunjom to develop joint North-South inspection procedures. As described previously, the JNCC never become operational. At the time, both North and South Korea lacked experience in establishing the appropriate inspection regime between the two nations. Between 1992 and 1994, the South Korean nuclear experts participated in training and exercises with the US in preparation for joint inspections. As South Korea's nuclear program accelerated in the 1990s, the Technology Center for Nuclear Control (TCNC) was founded under KAERI to support the anticipated JNCC activity and to strengthen cooperation with the IAEA. The TCNC focuses on nuclear material accountancy and control, physical protection, and export control of nuclear technology. North Korea has demonstrated its interest in being trained in nuclear material control procedures by participating (with South Korea) in IAEA-sponsored regional safeguards and physical protection training courses in 2000 and 2002.

Based on the draft procedures developed 10 years ago, inspections could be implemented fairly quickly if teams of qualified inspectors were available. The expertise and technologies at the TCNC should be offered to North Korea for training its inspectors. The offer for technical assistance and acceptance would not commit either South or North Korea to initiate inspections under the JNCC. Of course, if the DPRK has not rejoined the NPT by this time, the ROK should be careful not to provide information or technology to the DPRK that is controlled by export control regulations defined by the IAEA. Joint training of South and North Korean engineers who are prospective inspectors should be conducted together whenever possible to give them experience in working together. If specialized subjects require outside expertise, the ROK could request assistance from countries with advanced nuclear industries that the DPRK trusts, such as Sweden.

Phase 3: Reactivate the JNCC

(Applicable scenarios: improved relations)

Based on increased experience in working together during the previous phases, the ROK should press the DPRK to renew the Denuclearization Declaration and its associated agreements. This agreement is separate from the NPT and can be implemented without the DPRK rejoining the NPT. Conditions have changed in both countries, and the 1992 Declaration should be reopened to negotiations to reflect these changes and senior ministers should sign the new Declaration. The JNCC might follow the operational model of ABACC (neither Argentina nor Brazil were signatories to the NPT at the time of ABACC's formation in 1992). At this time, the DPRK may be more willing to enter into a bilateral system for verification than an international one under the IAEA. The ROK might make its continued support of the KEDO project and rebuilding of the North's electrical infrastructure conditional on a renewed and active Denuclearization Agreement and JNCC.

Phase 4: Support DPRK in Re-entry Into the IAEA

(Applicable scenarios: improved relations)

Although North Korea rejoined the NPT after the Agreed Framework was signed in 1994, it did not rejoin the IAEA. The DPRK's recent second withdrawal from the NPT makes cooperation with the IAEA even more difficult. Actions by the ROK are only one factor in the DPRK's decision to rejoin the NPT. The US and the international community may enter into a "grand bargain" with the DPRK that results in its rejoining the NPT and accepting of IAEA safeguards. Without such an agreement, there are limits to what the ROK can do to encourage the DPRK to rejoin the NPT and IAEA. If the DPRK does rejoin the NPT, the JNCC can facilitate the restart of inspections.

Phase 5: Continue Bilateral Monitoring Within the Context of the IAEA

(Applicable scenarios: improved relations)

The JNCC could sign an agreement for joint implementation of safeguards with the IAEA as ABACC did in 1993. Such an agreement provides additional information to both South and North Korea. For example, under the standard IAEA Safeguards Agreement with a member state, the IAEA does not provide data collected during an inspection to the inspected state, nor does it provide data about other states. Only a general report is made public. A bilateral agreement, operating in coordination with the IAEA, would provide a higher level of South-North transparency into the operations at nuclear facilities. This is important given the legacy of tension associated with nuclear facilities in the two Koreas.

Option 3: Initiate Measures to Facilitate Progress by KEDO

Phase 1: Use KEDO to Increase Interaction Between Nuclear Technologists

(Applicable scenarios: status quo and improved relations)

KEDO can be used to foster broader technical interactions than under the JNCC. For example, KEDO arranged a working-level conference held at Hyangsan-gun, Pyongyang in June 2001 on export control – the first meeting between the nuclear experts from both Koreas. In addition, KEDO and North Korea completed a training agreement for reactor operators in early 2001. Nuclear experts of North and South Korea conducted talks to resolve export control issues through KEDO and have sought a mechanism for peaceful nuclear cooperation between the North and South.

Phase 2: Revitalize KEDO

(Applicable scenarios: improved relations)

KEDO has succeeded in opening North Korea's closed society to the international community more than any other cooperative project by South Korea. KEDO provides the type of substantive assistance the North needs to leave its self-imposed isolation and join the international community. Consequently, North Korea regards KEDO as a testing ground for interactions with the outside world. Under the terms of KEDO, South Korea plays the leading role. However, KEDO funding limitations have adversely affected the project (for example, KEDO declined to provide \$750 million to North Korea for the modernization of power transmission lines). South Korea could initiate an international symposium to increase funding for KEDO and investigate options to correct construction delays, legal problems, and other factors affecting a timely completion of IAEA safeguards inspections. This would alleviate a major dispute between South and North Korea.

Option 4: Initiate a Bilateral Agreement Not to Attack Nuclear Facilities

(Applicable scenarios: improved relations)

If the tensions resulting from nuclear activities become acute, military action may be considered. Although North Korea has a weak air force, its large missile and SOF could damage South Korean nuclear facilities. Concerns about potential attacks might make a crisis worse or motivate North Korea to disperse and hide many of its facilities making future monitoring and verification more difficult. Both Koreas might follow the successful example of India and Pakistan, which completed an agreement not to attack declared nuclear facilities in 1972. Each year, they declare their current nuclear facilities and exchange lists. This process has continued even during times of crisis.

5.2. Weapons of Mass Destruction – Chemical

5.2.1. Sources of Tension

The DPRK maintains an extensive chemical weapons program as described in Chapter 2. The ROK Ministry of National Defense estimates the North's aggregate CW stockpile at between 2,500 and 5,000 tons.²⁷

5.2.2. Options for Confidence Building in Chemical Weapon Topics

The primary international means to control the spread of chemical weapons is the CWC, which entered into force in 1997. The CWC prohibits the use, production, stockpiling, and acquisition of CW and mandates the destruction of existing stockpiles of these weapons. The Organization for the Prohibition of Chemical Weapons (OPCW) verifies compliance with CWC prohibitions, utilizing on-site inspections of chemical production facilities and instituting export control regulations over certain chemicals to ensure nonproliferation of CW or CW precursor material.

The ROK actively participates in the treaty, but the DPRK is not a signatory. The ROK National Authority for the CWC currently lists the following declarations:

- Production of schedule 1 chemicals (chemical weapon material): none
- Production of schedule 2 chemicals (precursor materials): none
- Consumption of schedule 2 chemicals: 3 plant sites
- Production of schedule 3 chemicals (dual-use): 9 plant sites

²⁷ *North Korean Military Posture*, ROK Defense White Paper, 2000.

- Trade in schedule 2 and 3 chemicals: 48 companies

The first inspection at a ROK facility using Schedule 2 materials occurred in May 1998. South Korea has received eight inspections (industrial section) from the OPCW thus far.

- **Option 1: Initiate Interactions between National Chemical Industries and Experts**

Phase 1: Initiate Scientist-to-Scientist Interactions

(Applicable scenarios: status quo and improved relations)

South Korea should initiate and host bilateral conferences on nonsensitive topics such as industrial procedures, industrial safety, transportation, chemical waste processing, emergency response and chemical spill cleaning, safe exposure levels to commercial chemicals, and medical treatment for exposure to hazardous chemicals.

Phase 2: Increase Transparency in the Chemical Industry

(Applicable scenarios: status quo and improved relations)

Transparency actions should initially focus on DPRK's legitimate chemical industry rather than their suspected chemical weapons production sites. Measures to increase transparency in chemical operations should be incorporated into South-North joint commercial ventures. Reciprocal tours of chemical industry facilities should be initiated. The ROK national authority for the CWC should share data describing the South Korea's general applications and quantities of OPCW-listed "Schedule 3" (dual-use) chemicals used and request that the DPRK provide the same information. ROK declarations of exports of dual-use chemicals could also be shared with the DPRK government

- **Option 2: Encourage the DPRK to Join the CWC**

The ROK should encourage the DPRK to join the CWC. Incentives for cooperation can be incorporated into future joint commercial ventures. The ROK might declare its willingness to fund the costs of bringing the DPRK into compliance with the CWC.

Phase 1: Facilitate DPRK Participation in the CWC as an Observer

(Applicable scenarios: status quo and improved relations)

The ROK should request that the OPCW extend an invitation to the DPRK to attend an annual Conference of States Parties of the CWC as an observer.

Phase 2: Share ROK CWC Declarations with the DPRK

(Applicable scenarios: status quo and improved relations)

The ROK should share past ROK CWC declarations to increase transparency and help the North become more comfortable with the procedures required to join the CWC. Chemical industry organizations might offer to share their experience in compiling declarations and hosting OPCW inspections with their Northern counterparts.

5.3. Weapons of Mass Destruction – Biological

5.3.1. Sources of Tension

The DPRK Biological Weapons Program

Both North and South Korea acceded to the BTWC in 1987, thereby prohibiting the development, production, stockpiling, or acquiring of biological agents or toxins of the type and in the quantity not justified by peaceful purposes, as well as biological weapons and their delivery systems. Although North Korea joined the BTWC, it has never participated in regular Review Conferences. Both the US State Department and ROK Ministry of National Defense have stated that the DPRK possesses an offensive BW program. Chapter 2 described North Korea's history and infrastructure associated with BW research.

There are no provisions to verify if activities that are potentially BW-related are truly offensive in nature through the BTWC. The US has opposed the BTWC Ad Hoc Working Group's draft verification protocol, although many other countries have supported such a measure. The US remains concerned that a binding inspections protocol could compromise commercial proprietary biotechnology information and do little to effectively eliminate or detect transgressions by other member nations, thereby permitting a false sense of security. Therefore, the BTWC 2002 Fifth Review Conference resulted in the definition of sub-topics for expert group discussion over the next four years. The first expert working group is slated for 2003 and will address the need to adopt national measures to implement Convention prohibitions, as well as mechanisms to maintain security and oversight of pathogens and toxins.

5.3.2. Options for Confidence Building in Biological Topics

The high-consequence pathogens and toxins²⁸ that might be used in a BW program cannot be controlled by the strategy of regulating materials as applied in nuclear and chemical arms control. The source amounts are too small and the materials are used in too many legitimate

²⁸ High-consequence pathogens or toxins are defined as those microorganisms and their by-products that are capable of severely and adversely affecting international public health, safety, economy, and security. They include those both human and agricultural pathogens that possess attributes that prove most effective and efficient in acts of bioterrorism or biological weapons proliferation.

pharmaceutical research applications. In addition, growth of a significant BW stockpile only needs a small facility – like a brewery – and a short period of time. Thus, many arms control experts argue that “demand-side” strategies that create disincentives to the acquisition (such as global or regional arms control regimes and CBMs) of BW confidence building measure offer more hope for slowing or reversing proliferation.

- **Option 1: Facilitate DPRK Participation in the BTWC**

(Applicable scenarios: status quo and improved relations)

The ROK should encourage North Korea to participate in the BTWC Review Conferences. A preliminary step is for the ROK to send the DPRK its BTWC declarations and documentation regarding its participation in the upcoming 2003 experts’ group meeting. The South should offer to fund North Koreans to participate in the two-week experts’ dialogue regarding both domestic implementation of the BTWC and potential mechanisms to secure dangerous pathogens.

- **Option 2: Initiate Scientist-to-Scientist Interactions**

South Korea should consider a range of actions that further science and/or improve the health, agriculture, and security of the entire Peninsula.

Phase 1: Initial Scientific Interactions through Safety Workshops.

(Applicable scenarios: improved relations)

South Korea should sponsor a South-North academic workshop focusing on laboratory bio-safety standards. This workshop could outline international World Health Organization (WHO) norms for microbiological safety at laboratory facilities and encourage dialogue regarding the procedures and technologies utilized to ensure the safety of people and the environment against inadvertent pathogen release during research or transport.

Phase 2: Academic Exchanges

(Applicable scenarios: status quo and improved relations)

South Korea should propose that professors be exchanged and conduct seminars at each other’s universities. Topics of interest to both Koreas include medical research and treatment techniques, agricultural research, development of pharmaceuticals, and microbiology. Such a program could easily be expanded to fund scholarships for graduate and undergraduate students.

Phase 3: Creation of a Korean Peninsula Microbiology Journal

(Applicable scenarios: improved relations)

Scientific contributions to a Korean Peninsula microbiological journal, written in Hangul and distributed in both North and South Korea, would increase dialogue between the microbiological health and research communities. Initial publications could focus on endemic human or agricultural pathogens affecting the entire Peninsula.

Phase 4: Lab-to-Lab Visits

(Applicable scenarios: improved relations)

South Korea should sponsor reciprocal scientific visits to major biological laboratory facilities. Lab-to-lab visits would allow a small team of scientists to tour respective facilities. Such tours may include general program descriptions, documentation of research projects, and scientific presentations.

Phase 5: Joint Project Development

(Applicable scenarios: improved relations)

Joint microbiological research could evolve to solve health or agricultural problems that affect the Korean Peninsula. Projects could address a wide range of issues, such as increasing crop production, finding carriers of malarial transmission affecting areas surrounding the DMZ, studying the hanta virus that is endemic to the Peninsula, or improving public health surveillance. A South Korean organization of particular relevance is the International Vaccine Institute established in 1997 under the UN Development Program to strengthen the capacity of countries in the development, production, and use of vaccines for immunization programs. The degraded health system in the DPRK would greatly benefit from cooperation with this organization. Joint ventures in the development and production of pharmaceuticals should also be considered.

Phase 6: Establish a Joint System for Epidemiology in the ROK and DPRK.

(Applicable scenarios: improved relations)

The prompt identification of disease outbreaks is essential to public health. The respective Ministries of Health should establish an integrated computer base to link physicians, hospitals, and public health specialists. Such a system would be useful in early detection of disease outbreaks or even determining whether either Korea has been the victim of a terrorist attack, such as has occurred in Japan and the US. It also provides transparency into whether biological weapon development is being conducted by either Korea. For example, accidental

releases of weaponized pathogens occurred in the Soviet Union and provided evidence that a biological weapons program was active.

5.4. Weapons of Mass Destruction – Ballistic Missiles

5.4.1. Sources of Tension

The DPRK has an active program to develop, deploy, and export ballistic missiles. These missiles can potentially be armed with nuclear, chemical, or biological warheads. North Korea announced a missile flight test moratorium in 1999 in Berlin, and the US responded by lifting most economic sanctions by June 2000. Missile tests are a sensitive topic in Japan and have been raised in North Korean meetings with Japan.

The North's missile program affects the ROK adversely in several ways:

- *Threatening the ROK.* DPRK missiles can be used to target ROK military facilities, population centers, and USFK facilities with very little warning. Missiles would be fired from mobile launchers that are difficult to detect and defend against. Some US and South Korean analysts point out that relatively few flight tests have been conducted and conclude that accuracy and reliability, the hallmarks of military systems, are not important to the DPRK strategy. They therefore conclude the North would use the missiles to terrorize cities with a variety of warheads rather than attack specific military targets. The ROK does not have an equivalent missile force. Its short-range missiles are in compliance with the Missile Technology Control Regime (MTCR).
- *Provokes a DPRK-Japan Confrontation.* The DPRK Rodong missile was deployed in 1997 and has an estimated range of 1300 km, enabling it to strike most of Japan. This threat may initiate an arms race in Northeast Asia and adversely affect ROK-Japan relations. In theory, the ROK could find itself caught between the DPRK and Japan in a conflict. In the worst case, Japan may feel compelled to develop nuclear-armed missiles to deter a threat from North Korea.
- *Provokes a DPRK-US Confrontation.* In August 1998, a Daepo-dong missile was test-launched and the Central Intelligence Agency estimated that it could reach Alaska and Guam if North Korea succeeds in its development. Longer range missiles under development may be able to strike the US mainland and have been a justification in the US to develop missile defense systems. A strike on the US by the DPRK would bring the ROK into the conflict as a result of the ROK-US mutual defense treaty.

The export of Scud missiles and missile technology by North Korea to countries like Iran, Yemen, Syria, Iraq, Egypt, and Pakistan has damaged relations between the DPRK and the members of the MTCR – particularly the US. This affects the ability of the ROK to gain international support for reconciliation measures with the DPRK. For example, the 1999 Armitage Commission, headed by Richard Armitage (now the Under-Secretary of State), endorsed measures to capture North Korean vessels carrying missiles on high seas.²⁹ In practice, as shown by the seizure and release of the DPRK ship *Sosan* with its Scud missile shipment in December 2002, the US recognizes that international law constrains some measures to inhibit North Korean proliferation of ballistic missiles.

5.4.2. Options for Confidence Building in Missile Topics

- **Option 1: Encourage the DPRK to Join the MTCR**

(Applicable scenarios: status quo and improved relations)

North Korea's missile exports are destabilizing to conflicts in South Asia and the Middle East. The ROK, as a member of the MTCR, should encourage the DPRK to join the MTCR by linking aid and joint ventures to this goal.

- **Option 2: Provide Orientation to the DPRK in Missile Arms Control**

(Applicable scenarios: status quo and improved relations)

Arms control agreements such as the Intermediate Range Nuclear Forces Treaty (INF) and the Strategic Arms Reduction Treaty (START) successfully reduced or eliminated classes of missiles through verification. South Korea should work with Russia and the US to provide orientation to North Korean officials in how missile arms control has been conducted. Many international non-governmental organizations could assist in seminars and workshops thereby avoiding the appearance of entering into bilateral negotiations.

- **Option 3: Assist the DPRK with Launching Satellites**

(Applicable scenarios: improved relations)

When North Korea launched a Daepo-dong missile in August 1998, it claimed that the purpose of the launch was to place a satellite in orbit. Because a missile for satellite launches also has possible military applications, it is desirable to discourage development of this type of missile by the DPRK. When the North announced the missile test moratorium agreement with the US, it indicated that it might stop long-range missile development if the US assisted

²⁹ The Armitage Report on North Korea: Naval Blockades and Preemptive Strikes by Japanese Forces?,

them in launching satellites. This presents South Korea with an opportunity when it completes its satellite launch center at Koheung, Chonnam in 2003: the South could offer to launch satellites for the North. Another option is for the ROK to negotiate and fund the launch of satellites by another country such as China, Russia, France, India, or the US.

6. Conclusions

Current tensions on the Korean Peninsula are among the worst since the Korean War ended. Relations between the US and the DPRK have plummeted since the DPRK admitted its covert uranium enrichment program for nuclear weapons. The DPRK claims that the crisis is solely a dispute with the US and has tried to create differences in the ROK-US alliance. Although the ROK is not a signatory to the 1994 Agreed Framework, it plays the leading role in the KEDO organization created to implement the Agreed Framework. As a result of the crisis, the future of KEDO is uncertain. During this period, South Korea has continued economic and cultural interactions with the North, including the re-establishment of highway and railroad links, but bilateral military relations remain very limited, and incidents along the demilitarized zone and northern limit line still occur.

The new Roh Moo-hyun government must resolve the split between economic cooperation and military confrontation. If reconciliation is to be achieved, this state of affairs cannot continue. South-North security and economic/cultural cooperation are like two wheels on the same axle – one cannot turn without the other. At the same time, the ROK must maintain and update the security alliance with the US.

North Korea has violated and withdrawn from the NPT and the Agreed Framework. It has violated the South-North Declaration on Denuclearization. The 1992 Basic Agreement for conventional arms control exists on paper but is effectively dead. Consequently, the level of confidence on the Korean Peninsula is low, and security agreements need to be rebuilt and revitalized. The implementation of selected CBMs can build the foundation for a new security structure that will replace the half-century-old Armistice Agreement and lead toward the ultimate integration of the two Koreas. This new structure may take the form of a “grand bargain” including roles for the US, Japan, China, and Russia. Such an agreement would link North Korean WMDs, missiles, and conventional forces with arms control, lifting of sanctions, economic aid, diplomatic recognition, and formal peace treaties. The negotiation of a grand bargain will not be simple and will take time. The process can be facilitated by actions the ROK can initiate to build confidence, decrease the risk of unintentional conflict, and establish precedents for cooperation in security matters.

This study suggests a framework of policy development by government officials. CBM options for ground, naval, air forces, and WMDs identified by the project build on past inter-Korean and international precedents. Some could be implemented in the short term to extend South-North communication to security topics. Many of the CBMs presented build upon each

other and can be implemented in phases. To support decision making by political leaders, this research focuses on strategies and policy options and does not include technical details. Future analysis directed to developing a strategy framework to prioritize and integrate options for CBMs would be useful.

The ROK government needs to define short- and long-term goals and act upon them. Several principles for building confidence arose in the course of the study:

- *Inclusion:* All military topics including WMDs are topics for discussion.
- *Cooperation:* The South will support cooperative actions by the North politically and financially.
- *Linkage:* Aid to the North must be conditional upon constructive progress.
- *Multilateral Participation:* The South has limited leverage, by itself, to roll back North Korea's WMD programs – international assistance and pressure is needed. Confidence building should occur within the context of international actions, and with the goal of bringing the North into the international system of arms control including the NPT, CWC, BWTC, CTBT, and MTCR.

Reducing tensions on the Korean Peninsula and building a solid foundation for reconciliation will require a balance between the South Korean goal of reunification and its requirements for security. In spite of recent differences of opinion with the US and the need to update the alliance, cooperation with the US is essential. The ROK must eliminate inconsistency between national cooperation and international cooperation. ROK policy to the North must be in harmony with its foreign policy because engagement with the North will only bear fruit if it is in the interest of both Koreas and supported by interested countries.

Appendix A: International Precedents for Confidence Building Measures

A.1 Precedents – Europe, The Cold War Period

The forerunners of modern-day CBMs were proposed at the 1958 Surprise Attack Conference and to the Eighteen Nation Disarmament Committee (the forerunner to the United Nations Conference on Disarmament) in 1962. Two US proposals from these conferences were implemented in 1963:

- A hotline to provide continuous and direct communication between national command authorities in Washington and Moscow.
- *Limited Nuclear Test Ban Treaty* to ban nuclear weapon testing in the atmosphere.

The agreements came after the Berlin and Cuba crises of 1962 and helped to foster a political climate in which new approaches to East and West could be explored.

In the 1970s, there was renewed interest in confidence building leading to progress in arms control. Several formal CBM agreements were signed:

- The *Measures to Reduce the Risk of Outbreak of Nuclear War Agreement* in 1971. This agreement provides for immediate notification of an accidental, unauthorized, or unexplained nuclear detonation.
- The *Quadripartite Agreement on Berlin* in 1971.
- The declaratory *Agreement on the Prevention of Nuclear War* in 1973. This agreement provides for immediate and urgent consultations in times of crises.
- Various agreements signed between West Germany and eastern European Warsaw Pact nations served to acknowledge the post-World War II borders.

A.1.1. Helsinki Final Act (1975)

The Helsinki Act resulted from the Conference on Security and Cooperation in Europe (CSCE) and was the first integrated structure of CBMs in Europe. It included a separate document of CBMs for conventional forces with the following transparency measures:

- Notification in advance (21 days) of major military exercises (over 25,000 persons) in defined geographic zones
- Voluntary notification of smaller military exercises (below 25,000 persons)
- Notification of other military movements (undefined and at the discretion of the state)

- The inclusion of observers at major military exercises (discretionary on the part of the state conducting the maneuvers).

Between 1975 and 1982, NATO invited observers to 19 of 22 major exercises, and the Warsaw Pact nations invited observers to 8 of 17 major exercises. Except for Greece, all NATO and neutral states chose to announce some exercises below the 25,000-person threshold, and they invited observers to these exercises. In the Warsaw Pact, only Hungary announced exercises below the threshold but only with short notice. Switzerland, a neutral, announced its exercises. There were no allegations of failing to announce a major military exercise although the Soviet Union failed to provide agreed-upon information in 1981. No state announced independent naval or air force exercises.

After the Soviet Union conducted exercises to intimidate Poland in 1981, the US Senate proposed to improve crisis management tools between the US and USSR. Two significant transparency CBMs were implemented under this initiative:

- A 1984 agreement added fax transmission capability to the US-Soviet hotline.
- Nuclear risk reduction centers (NRRCs) were established in Washington and Moscow in 1987. The NRRCs exchange information such as the notification required under arms control treaties and confidence building measures.

A.1.2. Stockholm Document (1986)

An improved set of CBMs for conventional forces was proposed at the Commission on Security and Cooperation in Europe (CSCE) and was finalized in the Stockholm Document of 1986. These measures were intended to be “more militarily significant, binding, and verifiable.” Under the Stockholm Document, the new CBMs were no longer subject to the member state’s discretion.

Transparency Measures

- Notification was lengthened to 42 days in advance of a major military exercise or “concentration” of forces (whether from movements or exercises);
- Thresholds for reporting were lowered to 13,000 persons or 300 tanks;
- Notification only at the time of start of certain otherwise non-notifiable exercises such as “alerts;”

- Exchange of the schedule by November 15 of all military activities subject to prior notification in the forthcoming year;
- Invitation of observers to all exercises or concentration of forces over 17,000 persons. The threshold was lowered to 5,000 for amphibious or airborne troops; and
- On-site inspection, by challenge, limited to three on any single country's territory per year.

Constraint Measure

- Constraints on the ability to conduct very large-scale exercises involving between 40,000 and 75,000 persons.

A.1.3. Vienna Documents (1990, 1992, 1994)

In the late 1980s, arms control negotiations restarted, and a third round of CSBM talks began in March 1989 in Vienna. These talks were in parallel to arms control negotiations being conducted for reductions in conventional forces – later to result in the Conventional Forces in Europe (CFE) Treaty of 1990. The CFE focused almost entirely on numerical levels of equipment inventories and post-treaty locations of military forces. The 1990 Vienna Agreement and the Vienna Documents of 1992 and 1994 added new crisis management mechanisms, increased direct military-to-military contacts, and implemented several transparency and constraint measures.

Transparency Measures

- Established direct communication links among participants via a multilateral computer network for rapid exchange of data and notifications;
- Created an institution for consultation and information exchange among all CSCE members: the Conflict Prevention Center in Vienna;
- Created guidelines for unintended entry of military personnel into national territory;
- Established annual implementation assessment meeting at the Conflict Prevention Center;
- Encouraged military-to-military contacts by providing for periodic visits to bases and for personnel exchanges;
- Established an obligation for consultation regarding “unusual and unscheduled” military activities without defining specific thresholds for such activities;
- Prior notification of 42 days was lowered to 9,000 persons and 250 tanks;

- The threshold for mandatory inclusion of observers was lowered to 13,000 persons and to 3,500 for amphibious and airborne exercises;
- Encouraged demonstrations of new types of weapons and equipment deployed;
- Exchange of annual calendars of military activities; and
- Voluntary aerial inspections.

Activities Prohibited by Constraint Measures

- Conducting more than one exercise involving more than 40,000 persons or 900 tanks within two calendar years;
- Conducting more than six exercises involving more than 13,000 persons or 300 tanks but less than 40,000 persons and 900 tanks within a calendar year;
- Conducting more than three exercises each involving more than 25,000 persons or 400 tanks with a calendar year; and
- Conducting more than three simultaneous exercises or activities each involving more than 13,000 persons or 300 tanks.

A.2. Precedents: Post Cold War in Europe

A.2.1. Agreement for Peace in Bosnia and Herzegovina (1995)

The December 1995 General Framework Agreement for Peace in Bosnia and Herzegovina (also known as the Dayton Accords) included CSBMs. The parties signed the Agreement of Regional Stabilization Annex calling for “new forms of cooperation in the field of security aimed at building transparency and confidence.” The agreement for CSBMs (known as the Article II Agreement) included the following:

- Exchange of military information;
- Notification of changes in command structure or equipment holdings;
- Constraints, notifications, and observations applicable to certain military activities;
- Restriction on military deployments and exercises in certain geographic areas;
- Withdrawal of military units and heavy weapons to bases or other designated areas;
- Initiation of a program of military-to-military contacts and cooperation; and
- Establishment of a mechanism for communication and assessment of implementation.

A.2.2. The Open Skies Treaty (1992)

The Open Skies Treaty opened for signature in September 1992 and entered into force in January 2002. The treaty was originally negotiated as a transparency measure for conventional forces between NATO and the now-defunct Warsaw Pact. It does not limit military activities, location of units, size of forces, or weapon types and numbers. Although a formal treaty, it can be considered a CBM. The treaty gives signatories the right to overfly any of the other signatories, subject to defined operational constraints, and to use specified sensors to record images according to specified procedures. Host nation observers are on board the aircraft, and the host nation receives copies of all images. All information collected during a mission is accessible by all signatories.

A.2.3. Regional Nuclear Cooperation (1958)

The European Atomic Energy Community (EURATOM or EAEC) was established in 1958 as the third treaty organization of the European Union (EU). The concept of European unity was based on the idea that only cooperation could put a definitive end to conflicts in Europe. France and Germany had been involved in the last three major wars; therefore, these two countries had to be part of any political, economic, or military union. A significant nuclear weapons program was already under way in France. France and West Germany still worried each other, and smaller nations were also concerned about the strategic and nuclear intentions of these two powers.³⁰ The signatories pledged themselves to the common development of Western Europe's nuclear energy resources by coordinating research-and-development programs and by permitting the free movement of nuclear raw materials, equipment, investment capital, and specialists within the EU.

Recognizing the difficulties in containing nuclear technology, the US shifted its nonproliferation policy from "denial" to "control through the peaceful use of nuclear technologies" and gave early support to EURATOM. The third goal of EURATOM was to improve inter-European confidence in the wake of the failed attempt to create European Defense Community military structure. Efforts to establish EURATOM were thus part of an ambitious, long-term goal of creating a truly integrated European organization.

EURATOM is administered by the European Commission and is vested with wide powers, including defining technical and safety standards. In 1977, EURATOM and the IAEA

³⁰ Tatsujiro Suzuki, "Lessons From EURATOM for Possible Regional Nuclear Cooperation in the Asia-Pacific Region," *Energy and Security in Northeast Asia*, Policy Paper 24, Institute on Global Conflict and Cooperation, August 1996, pp. 29-41.

concluded an agreement to provide safeguards protection. Under the agreement, EURATOM acts as the principal authority, collecting and verifying accounting reports in member states, which are then sent to the IAEA. EURATOM and the IAEA have separate responsibilities for inspections and verification, and IAEA inspectors are not present at all inspections of EURATOM members' facilities. IAEA and EURATOM officials conduct their inspections at "strategic points" within facilities, such as fuel fabrication or enrichment plants where it is possible to measure movement of nuclear material and to undertake simultaneous inspections of facilities that contain large quantities of fissile material.

A.3. Precedents – Southern Asia

A.3.1. India-Pakistan

Most Indian-Pakistani CBMs resulted from the three wars and occasional periods of high tension. Unlike the European CBM process, many of the India-Pakistan CBMs have not been negotiated in detail, and some have not been publicly released. Furthermore, the implementation of agreed CBMs has been uneven. Sometimes the CBMs fall into disuse for a while and are then rejuvenated. The following sections describe the major categories of CBMs.

Declaratory Measures

- The *Agreement on the Non-attack of Nuclear Facilities* was signed in 1988 and entered into force in 1992. The agreement requires an annual exchange of lists detailing the location of all nuclear-related facilities in each country. India and Pakistan pledge not to attack listed facilities.
- The *Joint Declaration on the Prohibition of Chemical Weapons* was concluded in August 1992. Both countries agreed not to develop, produce, acquire, or use chemical weapons. Both countries later ratified the global *Chemical Weapons Convention* in 1997.
- India unilaterally declared in 1998 that it would not initiate the use of nuclear weapons in any conflict.

Transparency Measures

- A dedicated communication link (hotline) between the Directors General of Military Operations (DGMO) was established in December 1971. In December 1990, it was agreed that both DGMOs would use the hotline on a regular basis to exchange routine information. Dedicated communication links are also in place between sector commanders in the western portions of the Line of Control in Kashmir, but these are not used or tested

routinely. In early 1990s, Prime Ministers Bhutto and Gandhi established a direct communication link. The link has alternated between use and disuse, depending on the preferences of the prime ministers in office.

- Direct interactions between Indian and Pakistani military and security officials occurred in informal academic settings during the 1990s.
- The *Agreement on Prior Notification of Military Exercises* was completed in April 1991. Required information describes type and level of exercise, general location, planned duration, number and type of formations participating, and any shifting of forces between strategic units that is planned. Notifications include:
 - 15 days notification of air exercises at the regional command level and larger;
 - 30 days prior notification is required for division-sized exercises (more than 10,000 persons) of naval exercises with more than six ships of destroyer size;
 - 60 days prior notification for corps-sized exercises;
 - 90 days prior notification for army-sized exercises;
 - Planned concentration of division-sized forces within 150 km of the border for purposes of internal security require notification two days before movement. In the case of immediate movements, notification is to be made through the DGMO hotline; and
 - Ad hoc provisions for observers of military exercises. In 1989, Pakistan invited Indian and foreign observers. In 1990, India invited US observers.
- Although not initiated as a CBM, Indian and Pakistani military forces interacted professionally and cooperated operationally in the United Nations sponsored peacekeeping mission in Somalia (UNISOM-II, 1993–1995).

Constraint Measures

- Agreement on Military Exercises (1991)
 - No military exercises are permitted within 5 km of the border (within 500 m of the Line of Control in Kashmir).
 - Exercises directed toward the border are forbidden.
 - Division-sized exercises must be held at least 25 km from the border.
 - Corps-sized exercises must be held at least 75 km from the border.

- Each nation's naval ships are not to move closer than 3 nautical miles to each other. Aircraft of either country are not fly low over ships and platforms of the other country in international waters.
- Agreement on the Violation of Airspace (1991)
 - Armed aircraft are not to fly within 10 km of the border except in defined locations. Unarmed aircraft are not to fly within 1 km of the border (exceptions for rescue may be made with advance notice).
 - Military aircraft of one country may fly through the airspace of the other if approved with at least 7 days prior notice. Normal international flight rules are followed, although the country being overflown may request a halt for technical inspection.

A.3.2. India-China

India and China have a long-running border dispute. In 1962, the two fought a short war after which China occupied a large area along the eastern section of the border. Relations between India and China began to improve after Prime Minister Rajiv Gandhi visited China in December 1988, although the fundamental dispute remains unresolved. Both countries, however, have been willing to negotiate CBMs to avoid conflict and provide a basis for increased cooperation. A series of confidence-building agreements have been concluded:

- The Joint Working Group (JWG) on Boundary Issues established in 1989;
- The Agreement on the Maintenance of Peace and Tranquility Along the Line of Control (1993) in the India-China Border Areas (AMPT); and
- The Agreement on Confidence Building Measures in the Military Field Along the Line of Actual Control in the China-India Border Areas (1996) (ACBM).

These agreements included the following CBMs:

Declaratory Measures

- India and China agree to resolve the border question through peaceful means (AMPT).
- Neither side will threaten to use force against the other (AMPT).
- Pending resolution, the two sides will respect the Line of Actual Control (LAC) (AMPT).
- Each side will maintain the minimum level of forces along the LAC (AMPT).

Transparency Measures

- Holding of military-to-military meetings twice a year in both the eastern and western sectors of the border. Installation of military-to-military communication links at key points along the eastern and western sectors of the border (JWG, ACBM).
- Installation of a dedicated communication links between military headquarters (JWG).
- Procedures for local unit commanders to initiate meetings using color-coded flags to initiate contact (JWG).
- Procedures for prior notification of military exercises and movements along the border (specifics undefined) and prevention of airspace violation (undefined) (JWG, AMPT, ACBM).
- Initiation of educational exchanges between defense educational institutions (JWG).
- Exchange data on military forces and armaments along the LAC (ACBM).
- Advance notification of exercises involving one brigade or large (more than 5,000 personnel), including type, planned duration, general location, number and type of units participating. Date of completion confirmed to the other side within five days. (ACBM).
- If an accident, emergency, or natural disaster occurs near the LAC that might affect the other side, information provided by initiating side through diplomatic channels or military border meetings. If an emergency causes personnel to cross the LAC, the other side assists and facilitates return. (ACBM).

Constraint Measures

- Limits on the number of field army, border defense forces, paramilitary forces and categories of major weapons among the LAC (not specifically defined) (ACBM).
- Avoid holding large scale exercises (more than 15,000 personnel) along the LAC (ACBM).
- Combat aircraft are prohibited from flying within 10 km of the LAC. Unarmed aircraft are permitted to fly up to the LAC. If such a flight is necessary for emergency reasons, both sides will inform the other as soon as possible (ACBM).
- Neither side will fire weapons, use hazardous chemicals, detonate explosives within 2 km of the LAC (ACBM).
- If the detonation of explosives within 2 km of the LAC is necessary for construction, the other will give prior notification through diplomatic channels (ACBM).

- Exercises conducted in the proximity will fire weapons in the direction of the LAC if their range is sufficient to cross it (ACBM).

A.4. Precedents – The Middle East

A.4.1. Israel-Egypt

After the 1973 war, CBMs were used to decrease tensions, limit disputes, and facilitate normalization of relations between Israel and Egypt.

Disengagement of Forces Agreement (1974). This agreement was signed on January 18, 1974, and provided for the withdrawal of Israeli forces to the east side of the Suez Canal and established limited deployment and demilitarized zones in the Sinai Peninsula.

Declaratory Measures

- Forces will refrain from all military actions against each other.

Transparency Measure

- On-site inspection by United Nations peacekeepers was conducted to verify force locations and equipment holdings.

Constraint Measures

- All Egyptian forces in the Sinai were restricted to the west of a defined line. All Israeli forces in the Sinai were restricted to east of a second defined line.
- The area between the Egyptian and Israeli lines defined above was a zone of disengagement where neither could move forces.
- All forces in the limited deployment zones were restricted to no more than 7,000 personnel. Equipment was restricted to 30 tanks and short-range (less than 12 km) artillery. No missile launcher sites are permitted.
- No surface-to-air missiles were permitted 30 km east of Israeli limited deployment line and west of the Egyptian limited deployment line.

Interim Agreement Between Israel and Egypt (1975). A second disengagement agreement was signed on September 4, 1975 and created larger limited force zones, a larger non-deployment zone, and implemented sensor-based monitoring of the non-deployment zone.

Declaratory Measure

- Both countries agreed not to resort to the threat of force or military blockade against each other.

Transparency Measures

- On-site inspection by United Nations peacekeepers was conducted to verify force locations and equipment holdings.
- The US Sinai Field Mission operated a sensor-based early warning monitoring system in the nondeployment zone. Reports from the system were transmitted to Israel, Egypt, and the United Nations.
- The US conducted aerial monitoring of the limited deployment and nondeployment zones every 7 to 10 days with reports transmitted to Israel, Egypt, and the United Nations.

Constraint Measures

- Military aircraft of either country were not permitted across their limited force zone line.
- Reconnaissance aircraft were permitted to fly up to the middle of the non-deployment zone on an agreed schedule.
- Military forces in the limited deployment zones were restricted to 8,000 personnel. Heavy weapons were limited to 75 tanks, 72 short-range (less than 12 km) artillery pieces.
- The construction of new fortifications was not permitted
- No surface-to-air missiles were permitted 10 km east of Israeli deployment lines and west of the Egyptian limited deployment lines.

A.4.2. Israel-Syria

Syrian-Israel Disengagement Agreement. An agreement was signed on May 31, 1974, to adjust the cease-fire line of October 1973, stabilize military conditions, and reduce the potential for conflict on the Golan Heights.

Transparency Measure

- On-site inspection by United Nations peacekeepers was conducted to verify force locations and equipment holdings.

Constraint Measures

- A nondeployment zone was established between defined lines.
- Military forces in three limited deployment zones were restricted to specified numbers of personnel and heavy weapons.

A.4.3. Israel-Palestine

Gaza-Jericho Accord (1994). This agreement resulted from the Oslo Accords of 1993 and was the first stage in the transfer of control of territory from Israel to the Palestinian Authority.

Declaratory Measure

- Both sides were to take all measures necessary to prevent acts of terrorism, crime, and hostilities directed against the other and take action against offenders.

Transparency Measures

- A Joint Security and Cooperation Committee was to be responsible for recommending and implementing security policy guidelines. The committee exchanged information needed to resolve security problems.
- District Coordination Offices were established to handle security details and reporting of incidents. The offices were jointly operated 24 hours a day.
- Joint patrols conducted on-site inspection to report any unauthorized Israeli or Palestinian activities or incidents.

Israeli-Palestinian Interim Agreement on the West Bank and Gaza (1995)

Protocol Concerning Redeployment in Hebron (1997)

Declaratory Measure

- The Palestinian Authority was to revoke those articles in the Palestinian Covenant calling for the destruction of the State of Israel.

Transparency Measure

- Continuously operated regional offices of the Joint Security Committees were to be established between the Israeli Defense Force and the Palestinian Police.

Constraint Measures

- Israeli forces would deploy in the West Bank according to the locations and timetable defined in the agreement.
- Palestinian security forces were limited to 12,000 personnel.

A.4.4. Israel-Jordan (1994)

Treaty of Peace Between Israel and Jordan. This agreement was signed in October 1994 and provided formal and mutual political recognition.

Declaratory Measures

- Both states will refrain from the use or threat of any kind of force.
- Both states recognize the boundaries defined in the agreement.
- Both states commit themselves to the creation of a Conference on Security and Cooperation in the Middle East based, in part, on the Conference on Security and Cooperation in Europe.
- Both states will abstain from hostile propaganda against each other.

Transparency Measures

- Both states will create a mechanism of consultations that includes a liaison system with verification and supervision.
- Exchange of information and cooperation in removal of landmines.

A.5. Precedents – Latin America

Latin America is relatively free of interstate conflict, and cooperation among Latin American countries has improved since 1980. CBMs tend to blend social, economic, and military factors. Border disputes still exist between Bolivia and Chile, Venezuela and Guyana, Colombia and Nicaragua.

A.5.1. Multilateral Regional Agreements

- *The Buenos Aires Organization of American States Governmental Experts' Meeting on CSBMs, March 1994*
- *Regional Conference on Confidence and Security Building Measures in Santiago (1995)*
- *Bariloche Declaration of the Second Defense Ministerial of the Americas (1996)*

- *San Salvador Regional Conference on Confidence and Security Building Measures (1998)*

Declaratory Measure

- Reaffirm principles of nonaggression in the Organization of American States charter

Transparency Measures

- Hold academic seminars with participation by diplomatic and military officers on various security topics.
- Sponsor studies on security, disarmament, and development.
- Implement prior notification of military exercises and movements conducted within a specified distance from borders or coasts, including unit identification, route, and purpose of movement.
- Invite observers from neighboring countries to observe military exercises conducted in border regions.
- Implement periodic communication by radio between border forces to coordinate activities.
- Conduct meeting between air force and naval officers to define navigational procedures.
- Implement periodic meetings of military general staffs.
- Implement personnel exchanges between militaries for training and education.
- Conduct joint training exercises.
- Issue reports of military budgets, weapon production and purchases, and strategic plans and doctrine.
- Participate in the United Nations Register of Conventional Weapons and implement standard Latin American reporting of military expenditures.

A.5.2. Sub-Regional Agreements

South Atlantic Maritime Area (AMAS). This agreement between Brazil, Paraguay, Uruguay, and Argentina dates from 1967 and governs maritime traffic. In 1982, most nations signed the United Nations Conference on the Law of the Sea, which extended territorial waters and exclusive economic zones. AMAS has evolved to patrol and administer these areas. The system has not been used to monitor fishing activities, economic activity, or drug trafficking.

Declaratory Measure

- The peaceful use of the South Atlantic is declared.

Transparency Measures

- The coordinator of AMAS rotates between Argentine and Brazilian navy officers with the approval of the member countries.
- AMAS serves has an instrument for policy coordination between the respective navies and enhances familiarity with procedures used by each signatory. An annual military exercise is held and followed by joint review.
- Daily exchange of information on commercial and military maritime traffic in the South Atlantic. The reports are standardized to simplify communications.

Constraint Measure

- The agreement of all four signatories is required for any military maneuver.

A.5.3. Argentina-Chile (1984)

The sovereignty of three islands located at the entry of the Atlantic Ocean to the Beagle Channel at the Southern tip of South America had been disputed by Chile and Argentina since the early 1800s. The dispute became more intense in modern times because of the associated fishing and oil drilling rights as well as potential rights in Antarctica. The International Court of Justice ruled for Chile in 1977. Argentina disputed the ruling, and subsequent bilateral negotiations failed. Tensions increased as Argentina repeatedly violated Chilean air and maritime space. In December 1978, the opposing fleets deployed, and both sides prepared for war. Outside mediation avoided conflict, and the two sides agreed to seek a peaceful solution. Argentina and Chile signed the *Treaty of Peace and Friendship* in January 1984. The Treaty defined the naval operations of both sides near the southern tip in detail, particularly in the Beagle Channel.

Declaratory Measures

- Stated the obligation to resolve controversies, without exception, through peaceful means and renounce all threats or the use of force in mutual relations.
- The sea boundary and resultant exclusive economic zones precisely defined and the 1881 bilateral Boundary Treaty reaffirmed.

Transparency Measures

- A bilateral commission was formed for cooperation in navigation, infrastructure, exploitation of natural resources, and environmental protection.
- Regular meetings between the two navies are held alternately at Chilean and Argentine locations. Information is exchanged regarding naval units and activities in the Beagle Channel. Commanders are empowered to resolve minor complaints.
- Joint exercises for search and rescue are held.
- The Argentine authority must inform the Chilean Naval Zone at least 48 hours prior to a ship beginning transit.

Constraint Measures

- Specific routes for Argentine ships through Chilean territory in the Beagle Channel are defined. Argentine ships are to be piloted by a Chilean through this route.
- Passage of Argentine ships is to be continuous, and there are procedures governing a ship unexpectedly anchoring, embarkation/disembarkation, or other contingencies.
- No military activities by Argentina are permitted along the defined routes.
- No more than three Argentine warships may navigate simultaneously along the defined routes.

Joint Presidential Declaration Between Argentina and Chile on Confidence and Security Building (1999). In 1999, the presidents reaffirmed the 1984 Treaty of Peace and Friendship, the 1991 Joint Presidential declaration to build a peaceful border, and the 1998 Joint Declaration of Buenos Aires on border adjustments. The presidents also agreed to continue to promote confidence- and security-building measures both bilaterally and regionally. They emphasized the importance of transparency measures, specifically the UN Register of Conventional Arms and the Standardized International Reporting of Military Expenditures and the publication of defense planning strategies.

A.5.4. Ecuador-Peru (1998)

Ecuador and Peru have had a border dispute since their independence from Spain in the early 1800s. There have been a series of conflicts, the most significant of which occurred in 1941 when Ecuador lost about a quarter of its territory to Peru. A peace treaty in 1942 facilitated by Argentina, Brazil, Chile, and the US stabilized relations but did not completely and clearly define the border. Conflict occurred periodically, with a major crisis occurring in January-

February 1995 when thousands of soldiers with air and artillery support fought an intense but localized war in the disputed territory. A cease-fire was brokered by the four guarantor states with the separation of forces monitored by military observer group from the guarantors. Negotiations for peace began in 1996 and resulted in an agreement in 1998 to resolve the major outstanding issues through four commissions (Commerce and Navigation, Border Integration, Border Definition, and Mutual Confidence Measures and Security).

The Mutual Confidence Measures and Security Commission has a broad and ongoing charter:

- To reduce and eliminate distrust and reduce the risk of hostilities;
- To develop and widen the continuity of the existing bilateral CBMs;
- To increase understanding and cooperation between the armed forces and their members;
- To identify, design, and propose mutual CBMs in military and nonmilitary topics; and
- To design and apply procedures of mutual communication and verification of incidents.

Transparency Measures

- Initiation of military-to-military contacts bilaterally and through regional organizations.
- Joint demarcation of the formerly disputed sections of the border.
- Exchange of information describing minefields.

Constraint Measures

- There was an agreement to remove minefields.
- Forces along the border were reduced.

Maritime Cooperation

- Ecuadorian commercial ships received rights of navigation on Peruvian rivers connecting with the Amazon River.
- Commercial ships of the both countries have the right of docking, resupply, and navigation in the territorial waters of the other.
- There will be cooperation in maritime search and rescue.

A.5.5. Argentina–United Kingdom (UK)

Diplomatic relations between Argentina and the UK were broken as a result of the 1982 Falklands war. After his election in 1988, Argentine President Carlos Menem implemented a

series of agreements to stabilize conditions and build confidence. Both countries agreed freeze discussion of the issue of sovereignty of the Falklands (or Malvinas) Islands. Two *Joint Declarations of the Governments of the Argentina and the United Kingdom* (October 19, 1989 and February 15, 1990) were completed that contained steps to limit potential combat in the South Atlantic.

General Transparency Measures

- Establishment of a provisional system of information and bilateral consultation through an Argentine-British Working Group.
- Establishment of a direct system of communications between the islands and the continent.
- Creation of a system for exchanging information on security topics and the control of maritime and air navigation.
- Agreement on norms for reciprocal actions.
- Formulation of procedures for emergency maritime search and rescue.

Military Transparency Measures

- Increase mutual awareness of military activities in the southwestern Atlantic.
- Establish commercial and military flight corridors and radio communications procedures to determine when an aircraft is to make contact with ground control.
- Provide 25 days advance notice of naval maneuvers involving four or more vessels, air force maneuvers involving four or more planes, or land exercises involving over 1000 troops or over 20 takeoffs.
- Provide 25 days advance notice of amphibious or air transport exercises involving over 500 men or over 20 takeoffs.
- Avoid actions that might be interpreted as hostile.

As a result increased confidence, the Declaration of September 1991 was signed to increase cooperation and to introduce greater flexibility into existing agreements. There were no problems implementing the agreement, and since the signing there have been joint search and rescue operations. The changes included the following:

- Establishing a continuously operated radio-telephone and telex communication system under the supervision of both foreign ministries;

- Adding an alternate means of communication coordinated directly by military officials;
- Arranging for reciprocal visits to military bases and naval units;
- Eliminating the requirement that all ships within 50 miles of a national coast report to authorities while requiring armed military vessels to report when coming within 15 miles of a coast;
- Reducing the written advance notice of exercises to 14 days;
- Conducting an annual review of the agreements at meetings of the Argentine-British Working Group;
- Supplying necessary information to the Argentine Centers for Flight Information for flight control, alerts, search and rescue operations, and meteorological data;
- Accepting emergency landings at alternative airports; and
- Exchanging aeronautical information about airports belonging to both parties.

A.5.6. Argentina-Brazil – Nuclear Transparency and Controls

Latin America's two leading nations have devoted considerable resources to nuclear technology development. The path to bilateral nuclear cooperation and transparency evolved politically and technically over two decades. The precedent is an example of a bilateral relationship moving from declaratory CBMs to the implementation of transparency and constraints. The Argentine-Brazilian agreements illustrate how, by reinforcing international safeguards, regional organizations can contribute to the effectiveness of international nonproliferation regimes. Thus, the Argentina-Brazil example not only creates the security and confidence necessary to reduce nuclear ambitions by reducing motivations to acquire WMDs, it also helps to strengthen safeguards against the spread of nuclear weapons by providing controls on nuclear material.

In the period following the conclusion of the NPT of 1968, the national nuclear development policies of Argentina and Brazil converged into a common front against what was viewed as an imposed nuclear order. This was in spite of mutual suspicion and competition in other topics such as water and natural resource rights. In particular, there was resentment in both countries against nuclear supplier cooperation among the developed nations to restrict nuclear exports. Such efforts were viewed as direct threats to their independence and their development objectives.³¹ They also refused to fully accept the obligations of the 1967 Treaty

³¹ John Redick, "Nuclear Illusions: Argentina and Brazil," Stimson Center, Occasional Paper No. 25, 1995.

of Tlatelolco establishing a Latin American nuclear-weapon-free zone and to renounce the use of peaceful nuclear explosions.

Direct cooperation between Argentina and Brazil began after a 1979 treaty resolved their energy, water, and border disputes in the Rio de la Plata area. The treaty removed the most contentious obstacles to improved relations, and the two nations soon signed several bilateral agreements including one for nuclear fuel cycle cooperation. Although the process began under military governments, cooperation accelerated under civilian governments. Over the next decade, a series of agreements on nuclear cooperation were signed, and senior officials and the heads of state made official visits to nuclear facilities. Concurrently, both governments transitioned from military to civilian rule. In 1989, both countries elected new presidents committed to economic reform, increased foreign investment, and the reduction of military influence. Both presidents recognized that new nuclear cooperation initiatives could accelerate economic and political coordination. At the same time, significant progress was occurring in international arms control and nonproliferation. Argentina and Brazil needed technology and economic development in the face of tightening international controls over nuclear technology, and both required full-scope nuclear safeguards in order to receive economic and technical assistance. Neither country wanted to be perceived as a “rogue” state, so they found it advantageous to cooperate with the international community and offer assurances of their peaceful intentions in the nuclear field.

In November 1990, the *Declaration on Common Nuclear Policy* renounced nuclear weapons and peaceful nuclear explosives and established a framework for the implementation of a bilateral nuclear accounting and inspection arrangement. Argentina and Brazil also agreed to adhere to amendments to the Treaty of Taltelolco. In July 1991, the foreign ministers signed a bilateral agreement to create a *Joint System for Accounting and Control of Nuclear Materials* (SCCC) and the *Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials* (ABACC). ABACC’s principal responsibility is to administer the SCCC in order to verify that all nuclear materials and facilities under the jurisdiction of Argentina and Brazil are not diverted to nuclear weapons or nuclear weapon development. There is an exception that nuclear material (including enriched uranium) used for propulsion may be removed from SCCC control. The bilateral agreement was not sufficient assurance for key nuclear supplier nations such as Germany, Canada, and the US, which continued to emphasize the need for full-scope IAEA safeguards. The *Four-Party Agreement*, signed in December 1991 between Argentina, Brazil, ABACC, and the IAEA provided for comprehensive safeguards as well as a mutually reinforcing combination of ABACC and IAEA monitoring activities. Naval reactor

fuels are covered by the Four-Party Agreement. The agreement is explicitly modeled on the EURATOM-IAEA Safeguards Agreement of 1977. Argentina and Brazil acceded to the NPT on February 10, 1995, and September 18, 1998, respectively.

Under the Four-Party Agreement, ABACC is the principal safeguard authority, sharing certain responsibilities with the IAEA. ABACC and the IAEA may work in joint teams to inspect some facilities with the objective of reaching independent conclusions. While ABACC has the lead position with respect to verification and inspections, the IAEA's right of access to nuclear facilities is delineated in several provisions. The IAEA may conduct special and unannounced routine inspections.

ABACC is composed of a governing body called the Commission and an implementing body, the Secretariat. The Commission consists of four representatives appointed by the governments of Argentina and Brazil. The Secretariat is composed of 10 technical staff equally divided between the two nations. The Secretary and his deputy alternate each year between an Argentine and Brazilian. There are approximately 70 inspectors contracted from the national nuclear authorities of each country.

ABACC collects and enters declarations required under SCCC guidelines into a database. ABACC first inspects each facility to verify its design information and nuclear material inventory and then routinely afterward to confirm the correctness of the SCCC reports. The process works as follows:

- ABACC receives design information for initial and new facilities from standardized Technical Questionnaires of each facility. ABACC reviews them and conducts inspections to verify the declarations.
- ABACC receives an initial inventory declaration of all fissile nuclear material present in each country and any inventory changes from the National Nuclear Authorities (NAS).
- The inventory is entered into the database, and verification measures are planned and performed.
- ABACC organizes Brazilian inspectors to conduct inspections in Argentina and Argentine inspectors to conduct inspections in Brazil.
- The NAS periodically informs ABACC of any inventory variations that occurred at each facility.

- ABACC conducts routine inspections to periodically verify the nuclear material at a facility. The inspectors use specific equipment and collect samples to be analyzed at laboratories outside the samples' country of origin.
- ABACC sends inspection results to the corresponding NAS.
- On the basis of the verified facility design and nuclear material declarations, ABACC drafts Implementation Manuals (IM) for each facility that define all accounting and control procedures to be used at the facility. The drafts are revised in negotiation with the NAS and facility operators. Once the manuals come into force, ABACC carries out the defined activities on a routine basis.

A.6. Precedents – International Maritime Cooperation

There are a number of agreements to improve understanding of naval activities and reduce the potential for accidents or unintended conflict. These agreements are typically bilateral but are not geographically restricted. The first agreement was negotiated between the US and the Soviet Union in 1972.

Fishing disputes and agreements gained increasing prominence following state declarations of exclusive economic zones (EEZs) in the mid-1970s anticipating the United Nations Convention on the Law of the Sea (UNCLOS) that became international law in 1982. Many nations soon experienced overlapping claims in maritime jurisdiction. Additionally, national fishing fleet size and capabilities grew increasing contact and competition between nations.

A.6.1. The US-USSR Incident at Sea Agreement (1972)

In the late 1960s, there were several incidents between forces of the US Navy and the Soviet Navy. These included planes of the two nations passing near one another, ships bumping one another, and both ships and aircraft making threatening movements against those of the other side. In March 1968, the US proposed talks on preventing such incidents from becoming more serious. The Agreement was negotiated by naval professionals and signed during the Moscow summit meeting in 1972.

Transparency Measures

- A state is to provide notice three to five days in advance, as a rule, of any projected actions that might "represent a danger to navigation or to aircraft in flight."
- Information on incidents is to be communicated through naval attaches assigned to the respective capitals.

- A fleet is to inform the other navy when its submarines are exercising near the other's ships.
- Ships are to use accepted international signals when maneuvering near one another.
- The states are to conduct annual meetings to review the implementation of the Agreement.

Constraint Measures

- Ships will take steps to avoid collision.
- Ships will not interfere with the naval formations of the other party.
- Ships will avoid maneuvers in areas of heavy sea traffic.
- Surveillance ships will maintain a safe distance from the object of investigation so as to avoid "embarrassing or endangering the ships under surveillance."
- Ships will not simulate attacks at, launch objects toward, or illuminate the bridges of the other party's ships.
- Aircraft commanders are required to use the greatest caution and prudence in approaching aircraft and ships of the other party and are not permitted to simulate attacks against aircraft or ships, perform aerobatics over ships, or drop hazardous objects near them.

The Soviet Union (later Russia) has signed 12 similar bilateral agreements with other countries.

A.6.2. Other Bilateral Incident at Sea Agreements

Germany and Poland signed an incidents-at-sea type agreement in 1990. In January 1998, the US and China signed the *Agreement on Establishing a Consultation Mechanism to Strengthen Military Maritime Safety*. This agreement is similar to the US-USSR agreement but contains provisions for search and rescue, topical working groups, and special meetings as needed. In addition, there is an option to exchange observers at naval exercises.

A.6.3. United Kingdom – Iceland (1976)

The UK and Iceland had a series of disputes over fishing rights originating in 1958. Although both countries were members of NATO, they confronted each other in a series of violent incidents at sea between November 1975 and June 1976 called the "Cod War." The confrontation stemmed from the location of fishing and the amount of fish caught by the UK. Iceland unilaterally extended its exclusive fishing zone to 200 miles (324 km) from its coastline. Iceland argued that the UN conferences on the Law of the Sea had accepted the

concept of a 200-mile exclusive economic zone (EEZ) and that it was enforcing what would soon be international law (the UN Law of the Sea entered into force in 1982). Iceland also asserted that it needed to protect its declining fish population. The UK stated that until the international system approved the concept of a 200-mile EEZ, Iceland had no right to unilaterally enforce the limit.

During the 1975 and 1976, British trawlers had their nets cut by Icelandic Coast Guard vessels, and both sides rammed the other's ships. Britain deployed warships to protect its fishing fleet, and the frequency of ramming and warning shots increased. No fatalities resulted, but several crewmen were injured in collisions. When Iceland threatened to withdraw from NATO, the Secretary-General of NATO mediated the dispute. The June 2, 1976, agreement contained the following provisions:

Transparency Measure

- Icelandic patrol vessels were allowed to halt and inspect British vessels suspected of violating the fishing agreement.

Constraint Measures

- There could be no more than 24 British vessels operating at any one time within 200 miles of Iceland's coasts.
- British trawlers legally able to fish in Icelandic waters were restricted to a list of 93 registered vessels.
- Britain was restricted to a maximum catch of cod of 50,000 tons per year.
- Four conservation areas were closed to all British fishing.
- The duration of the agreement was 6 months, after which Britain lost all fishing rights inside the 200-mile zone.

A.6.4. International Fishing Agreements in Asia

Although various fishing agreements had existed within Northeast Asia, the 1990s heralded in a decade of increased concern for the management of resources and the potential escalation of fishing conflicts. Subsequently, three bilateral agreements were signed following several years of negotiation (China-Japan 1997, ROK-China 1998, and Japan-ROK 1998).

These agreements are significant for similar reasons. The maritime boundaries in Northeast Asia are still not clearly defined. China and Japan have not agreed upon the status of the

Diaoyu (Senkaku) islets, Korea and Japan continue to dispute Dokdo (Takeshima) Island, and Korea and China have not established a standard mechanism to calculate EEZs within the Yellow Sea or the continental shelf. All of these states have substantial commercial fishing interests with straddling stocks that require managed environmental coordination. The 1990's Northeast Asian fishing agreements achieved the following:

- Separated boundary issues from fisheries resources, thereby ensuring that all agreements were transitional pending future boundary delineations;
- Created detailed nautical “zones” in which registered fishermen from either side could openly work, with flag states maintaining jurisdiction over their own vessels;
- Established provisional EEZs, with exchange quota agreements to allow seasonal or regulated fishing in traditional areas by fishermen of the corresponding state; and
- Created bilateral Joint Fishing Commissions to conserve and manage living maritime resources, make recommendations regarding the maintenance of fish stocks and quotas, and effectively monitor the nature and progress of the agreement.

These agreements have effectively deferred sensitive boundary disputes surrounding islands or offshore fishing grounds pending a political settlement. These disputes might have progressed to armed conflict. National access to resources in these areas has been maintained for both sides while joint management has increased the viability of previously over-fished locations.

Appendix B: Structure of a Conceptual North-South Joint Fishing Venture

The establishment of a Joint Fishing Venture would require a preliminary environmental, economic, and business analyses of the fishing area and existing market forces, including information such as the effects of different harvesting rates, catch quotas, mechanisms for processing, and possible export markets.

The Joint Fishing Venture might have the following characteristics:

- Both the DPRK and ROK will designate a fish-processing facility for the Joint Venture (this may be in the DPRK, ROK, or consist of a processing vessel). There may be advantages to creating a facility in the North, with less expensive labor and material costs.
- The aggregate take amount will be monitored and reported at the processing facility.
- Registered fishermen from both sides will be paid upon receipt of fish, and prices will fairly reflect the current wholesale market regardless of nationality.
- After processing, packaged products will be routed to the ROK for local and international distribution.
- After costs, profits from the joint venture will be distributed equally between the ROK and DPRK.

A Joint Fishing Commission (JFC) would need to be established to administer the joint fishing zone. The JFC would be similar in principle to the commissions for the ROK-Japan and ROK-China Fishing Agreements. It would have the following responsibilities:

- The JFC would monitor, manage, and make enforceable recommendations regarding the marine resources of the zone.
- The JFC would be responsible for increasing regional scientific understanding of the area.
- Fishing Inspectors from the JFC could handle vessel registrations and inspections within the joint zone, and monitor catch quotas.
- The JFC would meet on a regular basis (at least once a month) to coordinate fishing efforts, assess the size or scope of the fishing zone, report scientific findings that are relevant to the continued maintenance of the zone, or resolve outstanding enforcement issues on either side.

- The JFC should be separated from the business dealings of the Joint Venture, and both states would be responsible for maintaining the activities of the JFC.

Joint Fishing Zones could be set up as follows:

- Boundary zones (Figure 8) could be established either from the current ROK red line north to the NLL or 3 km in either direction of the NLL. The zone could encompass the blue crab fishing ground area west of Yeongpyong Do and Soyeonpyeong Do Islands, which lie approximately 14 km south of the North Korean coast. An additional boundary zone could incorporate the northwest area between ROK's Baegryeoung Do, Daech'ong Do, Socheong Do, and the DPRK's Kirin-Do Island.

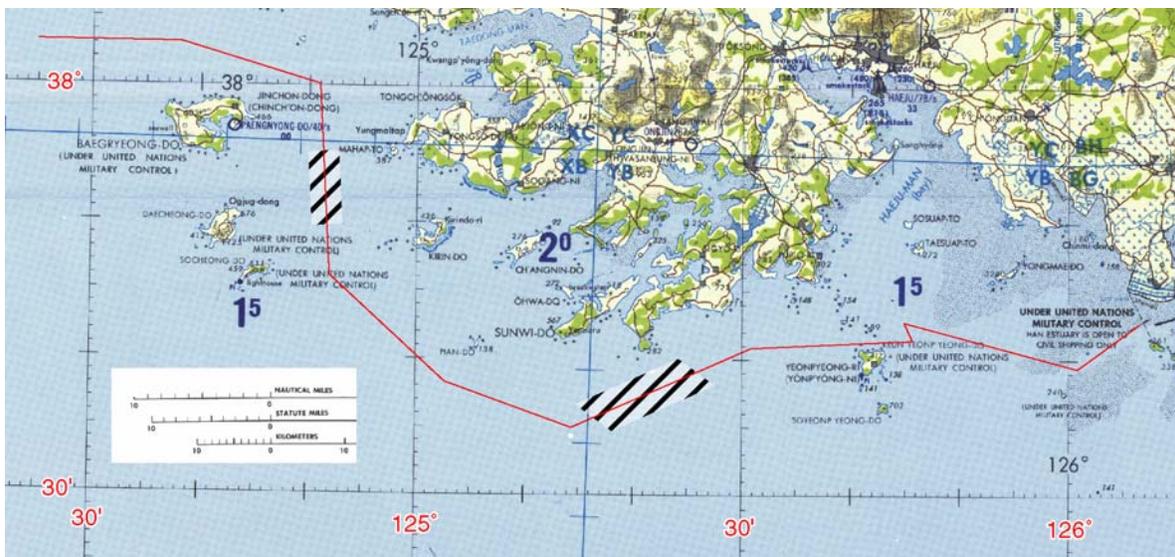


Figure 8: Map of NLL and conceptual joint fishing zones

- The shallow water (11-44 m) enables buoys to be used to demarcate the edges of the zone. Buoys should have flashing lights and radar reflectors and could also possess Global Positioning System capabilities to transmit positions to authorities in order to ensure the accuracy of the zone.
- Designated vessels from each side (preferably smaller, 150-200 ton vessels without anti-ship missiles such as the DPRK's *Shanghai* and *Sinpo*-class and ROK's *Kilurki*-class patrol boats (Figure 9) will police the Joint Zone on a regular basis. Although these vessels may come from official ROK/DPRK forces, they should be clearly marked as Joint Zone Enforcement Vessels (JZEV). JZEVs should carry two JFC Fishing Inspectors (one from each side) to monitor fishing activities and report findings back to the JFC. Two JZEVs (one each from the North and South) should be present in the Joint Fishing Zone during

fishing seasons. JZEVs should have the authority to repel, detain, or fine vessels of either flag state, providing that fishing inspectors both concur.



Figure 9: ROK Navy Kilurki-class patrol boat (ROK MND)

- No military vessels are to enter the Joint Fishing Zone. The JZEVs will report any entry by military vessels to the JFC.
- Korean or foreign cargo vessels that do not fish may pass through the Joint Fishing Zone.
- The JZEVs will have authority to detain foreign vessels fishing within the zone.
- Fishing inspectors must be provided with communications in order to coordinate daily inspector exchanges between ROK/DPRK enforcement vessels and report any anomalies to the JFC.
- Registered fishing vessels will be tracked and/or monitored by the JFC using electronic devices to detect unauthorized sales.
- Foreign vessels found outside of the Joint Fishing Zone will be handled in accordance with the domestic law and current customary practice of state authorities.

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