GEOPOLITICS OF NUCLEAR AND OTHER ENERGY RESOURCES: A CASE STUDY OF KOREAN PENINSULA IN THE POST-COLD WAR ERA

Dissertation submitted to the Jawaharlal Nehru University in partial fulfillment of

MASTER OF PHILOSOPHY

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My Mother is a poem I'll never be able to write,
though everything I write is a poem to my Mother.

- Sharon Doubiago

~ for ~

Mummy

23RD JULY 2008

DECLARATION AND CERTIFICATE

DECLARATION

I declare that the dissertation entitled "Geopolitics of Nuclear and Other Energy Resources: A Case Study of the Korean Peninsula in the Post-Cold War Era" submitted by me for the award of the degree of Master of Philosophy of Jawaharlal Nehru University is my own work. The dissertation has not been submitted for any other degree of this University or any other university.

NARESH KUMAR VERMA

CERTIFICATE

We recommend that this dissertation be placed before the examiners for evaluation.

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Needless to say that I alone owe the responsibility for the shortcomings, if there are any in the work.

CONTENTS

ABBREVIATIONS

AECL	Atomic Energy Canada Limited
APC	Armoured Personnel Carriers
bpd	Barrels of oil per day
BTWC	Biological and Toxin Weapons Convention
CBMs	Confidence Building Measures
CFC	Combined Forces Command
CIA	Central Intelligence Agency
CNPC	China National Petroleum Corporation
CTP	Climate Technology Partnership
CWC	Chemical Weapons Convention
DMZ	De-Militarised Zone
DPRK	Democratic People's Republic of [North] Korea
GDP	Gross Domestic Product
HEU	Highly Enriched Uranium
IAEA	International Atomic Energy Agency
IRBM	Intermediate Range Ballistic Missile
JNCC	Joint Nuclear Control Commission
KECO	Korea Electric Corporation
KEDO	Korean Peninsula Energy Development Organisation
KEPCO	Korea Electric Power Corporation
KPA	Korean People's Army
KPAAF	Korean People's Army Air Forces
KPAN	Korean People's Army Navy
Kt	Kiloton (nuclear explosive equivalent)
Kwhr	Million Kilowatt Hours
LNG	Liquefied Natural Gas
LWR	Light Water Reactor
MOX	Mixed-Oxide Fuel
MOU	Memorandum of Understanding
MRBM	Medium Range Ballistic Missile

MTCR	Missile Technology Control Regime
MWe	Megawatt-electric
MWs	Megawatts
MWt	Megawatt-thermal
NAM	Non-Aligned Movement
NBC	Nuclear, Biological and Chemical
NNWS	Non-Nuclear Weapon(s) State
NPT	Treaty on the Non-Proliferation of Nuclear Weapons/ Nuclear Non-Proliferation Treaty
NSG	Nuclear Suppliers' Group
NWS	Nuclear Weapon(s) State
OECD	Organisation for Economic Co-operation and Development
PHWR	Pressurised Heavy Water Reactor
PRC	People's Republic of China
ROK	Republic of [South] Korea
SAM	Surface-to-Air Missile
SLOC	Sea Lanes of Communication
SOFA	Status of Forces Agreement
SSM	Surface-to-Surface Missile
TMD	Theatre Missile Defence
TOE	Tons of Oil Equivalent
WMD	Weapons of Mass Destruction
UN	United Nations
UNSC	United Nations Security Council

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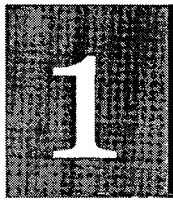


INTRODUCTION

CHAPTER ONE

INTRODUCTION

National and international security provided the geopolitical framework for thinking about international politics for much of the Cold War period. After the Cold War, matters of economics gained higher profile in the discussions of geopolitics. This research will analyse the geopolitical affairs of the Korean peninsula, focussing on nuclear and other energy issues. Situated at a geo-strategic location in Northeast Asia, the Korean peninsula has witnessed an active participation by regional and great powers such as Japan, China, Russia and, most importantly, the United States. The broader geopolitical trends that can be identified in the region are: the nuclear weapons programme of North Korea which threatens the status quo in the region, drive to secure energy resources for the booming economics of the region, attempts for Korean re-unification, the grand strategy of the United States in Northeast Asia, and attempts of great powers to preserve Korea as their sphere of influence.

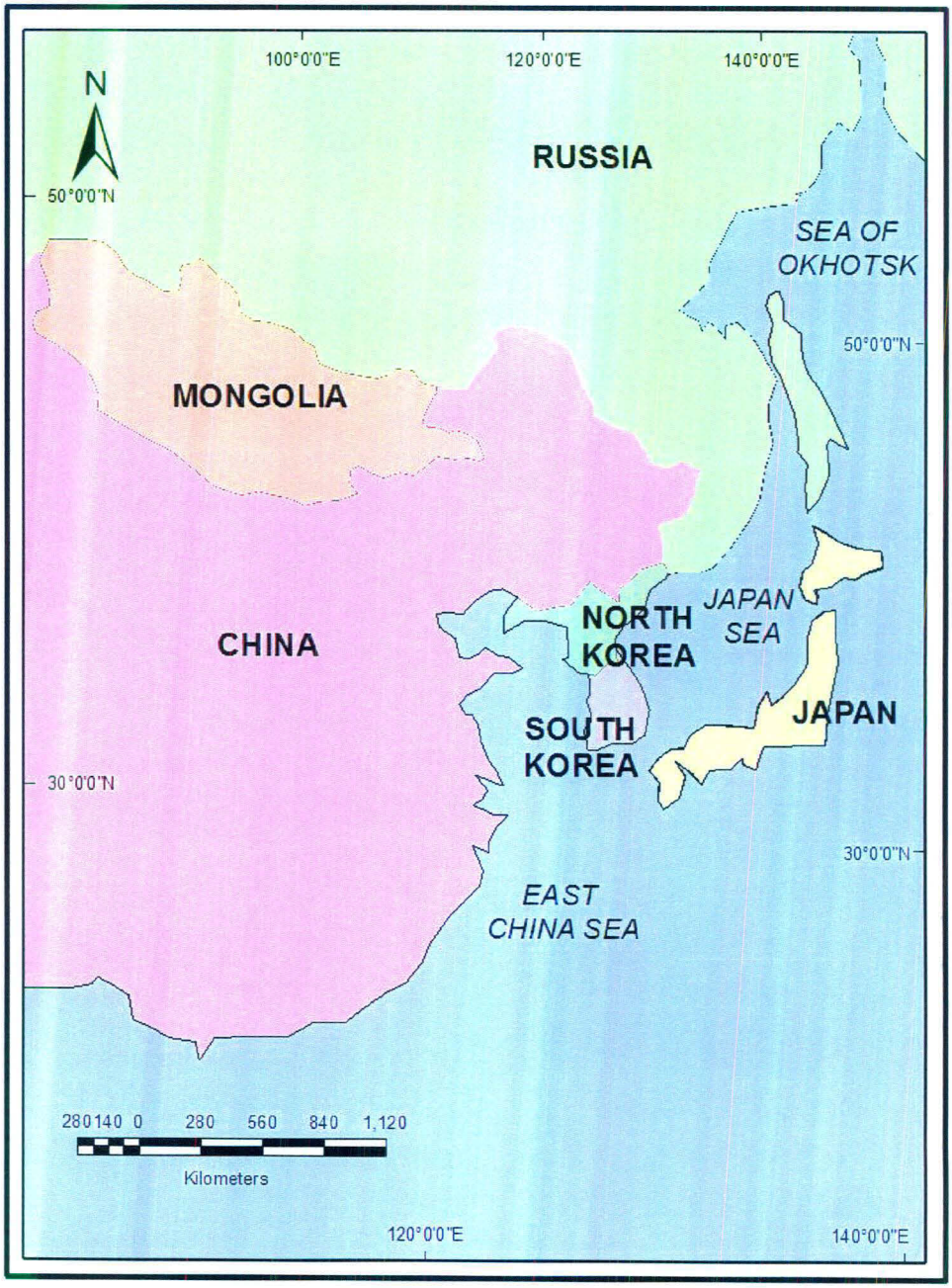
GEOGRAPHY OF THE KOREAN PENINSULA

Korea is a peninsula which is situated at the north-eastern rim of the Asian continent to 43° 01'N, and within 124° 11'E to 131° 53'E longitude. The total area of the Korean peninsula amounts to 221,000 square kilometers. This area is approximately the same size as Great Britain or Romania. The peninsula is 102 times smaller than the territory of Russia and 44 times smaller than that of China. Even Japan's total land area is 1.7 times larger than that of Korea (Mansourov 2000). The Korean peninsula is 965 km. long and 346 km. wide at its broadest point, and at the narrowest point its width is no more than 165 km. (Singh 2005: 227). The peninsula extends southwards for about 1,100 kilometers from the continental Asia into the Pacific Ocean (Oliver 1993: 3). Two large bodies of water, the East or the Sea of Japan and the West or Yellow Sea, enclose the Korean peninsula on three sides (Kim 1988: 1-2). The North Korea- South Korea boundary line extends 50 nautical miles (nm) in the Sea of Japan and 200 nm in the Yellow Sea (Singh 2005: 227). The Amonk and Tumen rivers form land borders towards China and Russia.

Within the peninsula, North Korea shares 1,416 km. land boundary with China, 238 km. with South Korea and 19 km. with Russia. Certain islands in the Yalu

Map 1.1

NORTHEAST ASIA REGION



and Tumen Rivers are claimed by both China and North Korea. However the issue has not been an impediment in the growth of relations between China and North Korea.

North Korea, with an area of 120,540 sq km., constitutes 55 percent of the Korean peninsula and has a population of approximately 22.6 million, which is less than half of the South Korean population of approximately 48.5 million. Eighty percent of North Korea's land area is composed of the mountain up lands with elevations of 2,000 meters or more. The mountains in the East drop abruptly to the sea and the plains are even smaller on the West coast. Its Northern land border is formed by the Yalu (790) and Tumen Rivers (521 km.).

The peninsula is called *Chosun Bando* in North Korea and *Han Bando* in South Korea due to the different names for Korea (Wikipedia Contributors 2007). Korean people belong to a Northern Mongolian race of the Asiatics ethnic group (Shin 2005: 16). Throughout history, the Korean Kingdom developed a culture that was unique and distinguished from that of China, but also transmitted many elements of its culture to Japan. Linguistically, the Korean language belongs to the Atlantic language family (Shin 2005: 17).

BACKGROUND

Any understanding of the present is deeply rooted in the past. A look at the Korean peninsula proves this point. The history of the Korean peninsula is a history of great power struggle over the region. Japan, in its colonial avatar, had annexed Korea at the end of the 19th century and until its defeat in 1945 in the Second World War, controlled the peninsula. It surrendered partly to the United States and partly to the Soviet Union. Because of the failure of the two superpowers to agree to a solution to withdraw from the region, Korea, which was until then a single political entity, was divided into two parts along the 38th parallel into North and South. The United States attempted to re-unify the two Koreas through the United Nations (UN). The UN in turn appointed a commission to bring unity but failed. The anxiety of both the Koreas over re-unification ultimately resulted in the Korean War (1951-1952) when Pyongyang (which itself had been provoked by the US actions) attacked South Korea. The US urged the UN to act to save the "democratic" South Korea. Under the "Uniting for Peace" resolution of the General Assembly, the UN brought a US-lead multi-national UN force, commanded by General McArthur. The Soviet Union and

China supported North Korea, with China sending the force to thwart any opposition against his regime troops across the border. The war eventually reached a stalemate. The 1953 Armistice split the peninsula along the De-Militarised Zone (DMZ) at the 38th Parallel, which till date remains to be the most heavily fortified line in the world.

Because no peace treaty was ever signed between the two Koreas, they were put in a permanent state of hostility by being technically still at war. The United States moved decisively to offset the military inferiority of the South Korea by making it a part of alliance system. The extensive involvement of the United States in the South Korean affairs also benefited the latter economically. Since then the UN urged both the countries to explore the path of re-unification but these requests went without heed. In the 1970s, both North and South Korea began talks to each other but these too proved ineffective.

The North was led by Kim Il Sung till his death in 1994. When Pyongyang emerged from the shadows of the Korean War, its economy grew at a significantly higher rate surpassing Seoul. However, as the mainstay of the world Communist movement-the Soviet Union began to weaken, the North Korean economy too began to crumble down struggling in the decade of 1980s and 1990s. Politically, Kim Il Sung had so established his iron grip over North Korea that no opposition dared to show its head. His dictatorial policies were continued by his son Kim Jong Il while Kim Il Sung was made the "*Eternal President*". Foreign policy orientation wise, North Korea did not change and particularly the relationship with the United States kept on getting from bad to worse.

The closeness of South Korea with US made it a frontline state for Cold War in Asia. Domestically, South Korea's democratic development remained to be in the nascent stage in comparison to those it had allied with. During the 1980s, South Korea emerged to become a flourishing industrial power. But re-unification was not in sight, which could have brought further economic gains for the region.

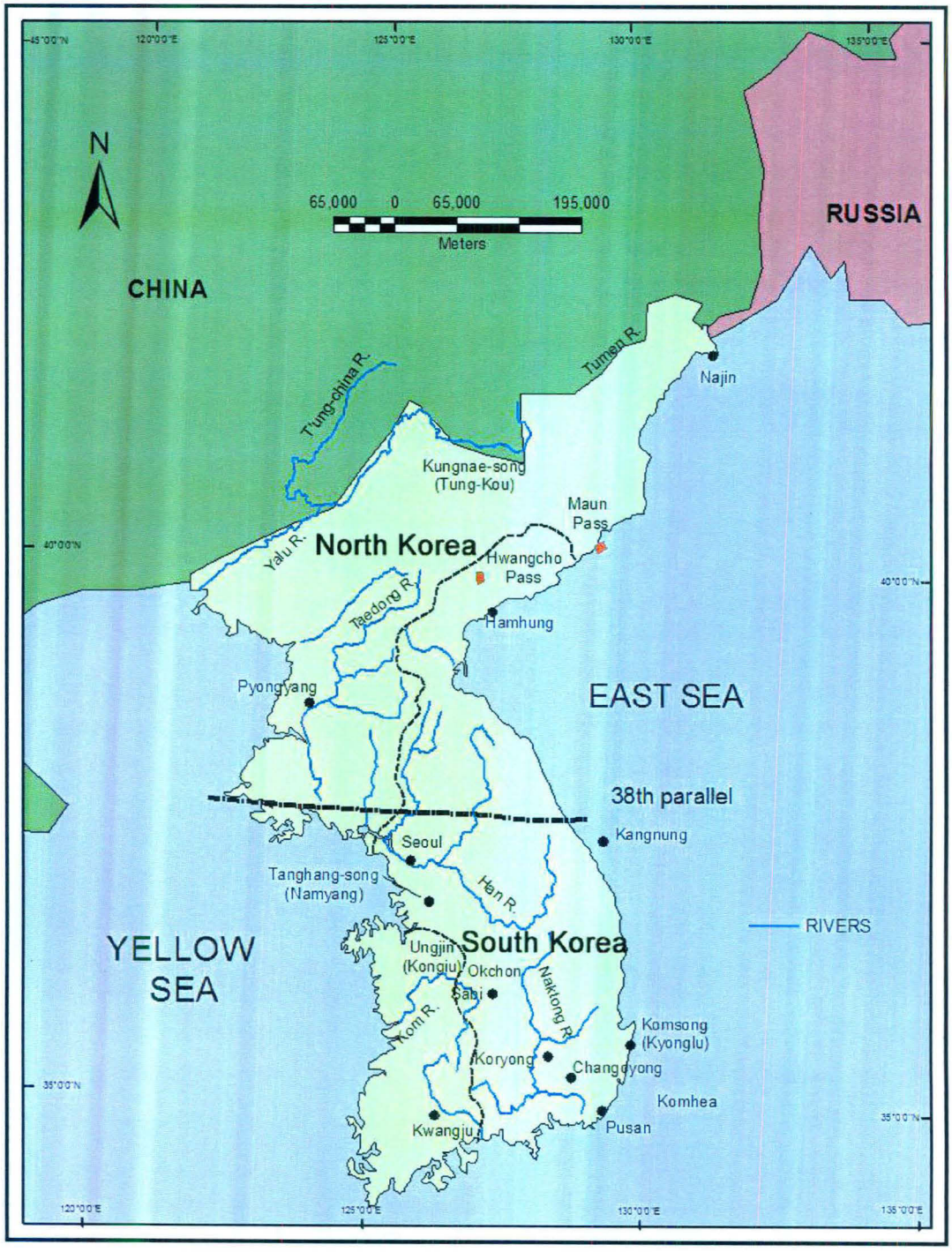
GEOPOLITICS OF THE KOREAN PENINSULA

Security Issues

After the end of the Cold War, Seoul established diplomatic relations with China and Russia. This was the beginning of new geopolitics on the Korean peninsula as Seoul's betterment of relations with Pyongyang's 'friends', made the latter very anxious.

Map 1.2

KOREAN PENINSULA



Pyongyang was in any case facing its worst-ever economic stagnation period. The trump card for Pyongyang was of course its nuclear programme.

In the early 1980s, North Korea had begun constructing a small gas graphite reactor at Yongbyon. It was doing this despite being a signatory to the Nuclear Non-Proliferation Treaty (NPT). By the beginning of the 1990s, the shocked international community woke up to the reality that not only North Korea harboured nuclear ambitions but also that it was turning those ambitions into a ground reality. The Clinton administration hurriedly entered into negotiations with Pyongyang and drew up the Agreed Framework Accord. The framework was finalised in 1994 by which Washington offered heavy fuel oil and help building nuclear energy plants in exchange for Pyongyang's promise that it would shut down its nuclear weapons programme. In addition, a quasi-governmental multilateral mechanism, the Korean Peninsula Energy Development Organisation (KEDO) was established to implement the Agreed Framework and in order to involve more closely South Korea and Japan (among others) in the process. However, problems persisted for North as it experienced record-breaking floods during 1995-1996 followed by several years of equally severe drought beginning in 1997. This led to an immense famine and left North Korea in economic shambles.

In June 2000, as a part of South Korean President Kim Dae-Jung's "Sunshine Policy of engagement", a North-South summit took place in Pyongyang. Since then, trade and investment between the two Koreas have increased dramatically as a result of regular contacts in relations and economic ties. However, after Kim's departure from the political scene, inter-Korea relations were back to square one. Pyongyang was back what it was doing best- blackmailing the international community by using its nuclear programme. The Bush administration sought to contain North Korea by all means possible, in the aftermath of September 11 terrorist attacks terming it as a part of "*axis of evil*" along with Iraq and Iran.

In October 2002, Pyongyang admitted of running a secret uranium enrichment programme. Simultaneously, it also revived its plutonium programme. Responding to this crisis, the general opinion was that Pyongyang's nuclear programme was basically a multi-national problem rather than a US-North Korea bilateral issue. Hence, this saw launching of the Six Party talks along with Japan, South Korea, China and Russia to diffuse the situation. Yet after several rounds of the Six Party talks, the international community was unable to persuade North Korea to give up its nuclear

programme. In October 2006, North Korea announced to the stunned international community that it had become a nuclear weapons state. The North Korean test brought a severe condemnation of the Kim Il Jong's regime.

Politics of Energy Issues

In terms of energy issues, the region has witnessed a rush for securing energy resources for economic development. The region of Northeast Asia has three booming economies in tow: China, Japan and South Korea. All of them are heavily dependent on Middle Eastern sources of oil. Therefore, the energy policies of these countries have dictated a move away from oil, which has facilitated the rapid rise of gas, whilst expanding the roles of thermal and nuclear power generation. In addition to the above-mentioned nations an energy-starved North Korea is also seeking newer energy sources. Its domestic hydro and thermal power resources are under severe pressure. This is one of the reasons, why Pyongyang is fiercely pursuing a nuclear programme. In this background then, it is pertinent to examine the geopolitics of the energy resources of the region.

In order to satisfy the energy needs of Northeast Asia, Russia in 2003 had proposed a gas pipeline for region from its Kovyokta natural gas field in Southeast Siberia and China's port of Lianyunggang. Such a project could carry 20 billion cubic meters of gas annually. Originally, the pipeline was supposed to link South Korea and Japan through underwater links. Another proposal is to bring the pipeline through Sinuiju in North Korea and then bring it in South Korea. However, the pipeline itself has questions of viability, as it is still debatable whether the Kovyokta field contains reserves big enough to justify a huge pipeline. More than the viability however, the question whether South Korea is interested in the pipeline crossing North Korea Is debatable. If it does, Seoul is worried about the security of the pipeline itself. Another proposal was to build a pipeline from the Russian Sakhalin I oil and gas field to the Eastern coast of the Korean peninsula where it would intersect with an existing South Korean gas network. Whichever way it goes, these proposals indicate one significant thing, namely the intention of Russia to position itself as a major actor in the region once again after the fall of the Soviet Union.

REVIEW OF LITERATURE

Geopolitics has played an important role in the history of Political Geography (Flint and Taylor 2007). Geopolitics is an interaction between the natural, geographical phenomenon and political phenomenon. It sets out to examine the interrelationship between political actors and spatial environment. Because of its natural shape, the globe is divided into a certain number of spaces, which are the sites of struggle among the states. This fact conditions politics to space, with its own specific and constant rules that permanently affect the people in that area, as seen throughout the history (Cohen 2003). Contemporary geopolitics identifies the sources, practices, and representations that allow for the control of the territory and the extraction of resources (Flint 2006: 16). Korea's history is a witness to this fact.

Long identified as the 'Hermit Kingdom', Korea had kept aloof from the outside world. Its efforts for modernisation began in the late seventeenth century. Korea's history since that period is the history of great power struggle for the region. Robert T. Oliver (1993) begins his account of the Korean history in and around that time. Dealing with the origins of Korea's modernisation, he also analyses how Korea became a toy for Japanese imperial policies. The atrocities committed by the Japanese soldiers during the Japanese occupation in Korea still constitute an emotional issue for many Koreans. Oliver was himself an adviser to the South Korean President Syngman Rhee in the 1950s. Hence, his narrative of modern Korean history after the 1940s becomes personal at many times. His narrative of the extensive involvement of United States in the South Korean affairs makes for an interesting reading.

Bruce Cumings (2005) analyses in detail the involvement of United States in Korean affairs, which has perpetuated the fractured existence for both the Koreas. Describing South Korea's movement from an economic pigmy to a powerhouse and a gradual shift towards democratic governance, Cumings makes a point that one may forget about history, but history will not forget about one. The fundamental point that Cumings makes is that despite predictions of North Korea's collapse, the peninsula remains divided. Therefore, how Koreans will effect a re-unification remains a mystery for the future.

The conventional books dealing with the Korean peninsula focus too much on South covering little of North. Samuel Kim and Tai Hwan Lee's (2002) edited work *North Korea and Northeast Asia* fills this critical gap. Kim and Lee say that geography and region-specific fault lines have given rise to a highly complex

interdependence of security in the Northeast Asian region. North Korea surrounded by the Big Four (China, Russia, Japan and the United States) along with South Korea constitute the region's geo-strategic pivot point and its most crucial flash point. Through its conventional and unconventional military capabilities, an unstable North Korea could destabilise the region. The authors conclusively believe that managing the North Korean threat in its multiple and mutating forms has become an integral part of the problem and the solution for both the future of the Korean peninsula and the future of Northeast Asian geopolitics. Samuel Kim's (2006) latest work deals with how the two Koreas have managed their relationships with the great powers in the region. Despite its relative aloofness, the Korean peninsula has witnessed an active participation by these four powers in the Korean affairs.

Suk Hi Kim (2003) examines North Korea's history since the end of the Korean War. Suk brings to fore the dilemma faced by Pyongyang which stands at the crossroads between continuing survival and collapse. The author says that because of years of economic misery, the country was forced to adopt the open door economic policy. Suk says that despite the changes around the world since the end of the Cold War in 1991, North Korea has not altered its politico-economic policies. Therefore he says that North Korea is facing serious choice today in terms of survival.

Tsuneo Akaha's (2001) edited work is a collection of essays by noted scholars on Asian security. It examines the perspectives and interests of North and South Korea, the United States, China, Russia and Japan regarding North Korea's future, including the possibility of neutrality. In one such article analysing the prospects for a neutral North Korea, Alexandre Mansourov argues that historically North Korea has been viewed as a threat in the Northeast Asian region. He however chooses to break from this traditional academic discourse and analyses the practical reasons why a neutral North Korea will serve greater interests of peace in the region.

Another gap that a work seeks to fill is Youngnok Koo and Sung-joo Han's edited volume (1985) on South Korean foreign policy. The authors say that there has been neither systematic nor comprehensive overall analysis of the South Korean foreign policy. Hence, this book focusses upon the functional and organisational aspects of the South Korean foreign policy. During the 1960s and 1970s, South Korea, they argue, followed a different line from the United States in order to cope with a rapidly changing international environment that threatened not only Korea's well-being but also the peace and stability of Northeast Asia.

Since the division of the Korean peninsula, there have been attempts for re-unification, initiated mostly by the two Koreas. However, great power interests in the region are such that any attempt at re-unification has failed. Yoo Byong-yong (2003) says that the Korean problem after the Second World War was either directly connected with great power interests or affected by the outcome of great power politics. His book seeks to analyse in detail Britain's foreign policy towards the Korean unification from 1945 to 1954 when the Geneva Conference was held. The Geneva Conference was held to discuss both the Korean as well as the Indo-China question. However, in the academic world the Indo-China question has been discussed in detail leaving out the Korean question. Therefore it is necessary to explore more fully why the Geneva conference on Korea was originally convened and why it failed to reach any agreement on Korean re-unification. The British leaders did not intend to formulate an effective policy for Korean re-unification, but to use the Korean problem as an event, which could contribute toward the easing of international tension, and as an occasion to get people around the table. Even though Great Britain had participated in the Korean War, it had done so in order to preserve friendship with the United States.

Young Jeh Kim (1987) describes and analyses the history and the alternatives involved in the movement toward the peaceful re-unification of Korea from 1940 to 1975. This study is based mainly on historical evaluation and descriptive analysis in dealing with both Korea's re-unification policies in the past and present. It also shows possible alternative future. The most difficult problem in the Korean re-unification has been the lack of interaction between Seoul and Pyongyang and the development of ideological differences between the political leaders of the two Koreas. Both the nations have strengthened their distinct political systems while joining hands with a great power through various treaties. While the leaders in Pyongyang have been insisting upon a "big-step first" approach (political-socio-cultural-military-economic), the leaders in Seoul have argued for a "step-by-step" approach moving from simple issues to more complex ones (socio-cultural-military-economic-political). The problem is how to agree on the order in which to address the difficulties.

Nicholas Eberstadt (1995) says that the partition of Korean peninsula into two halves is a completely unnatural arrangement. This "crisis of Korea" would end only when the two Koreas would re-unite. This is not to say that Korea's problems would be over. The fundamental dynamics of the peninsula such as the disappearance of the

Soviet Union, North Korea's economic collapse are leading to an eventual re-unification. As the extra-regional power, United States can, than any other foreign power, increase the likelihood that Korea's re-unification will be peaceful and that Korea's subsequent re-integration will succeed. Selig Harrison (2002) however argues that the United States should disengage from the region and must play a neutral role in the post re-unified Korea. Also, while most of the books advocate that North Korea should be merged in South Korea, Harrison is the only one advocating the merit of their coexistence through confederacy.

In an interesting study Marcus Noland, Sherman Robinson and Li-gang Liu (1998) argue that a study on the costs of Korean re-unification shows possible greater expenditure for the South, and this is the reason why in South Korea, there is a growing scepticism about the desirability of un-ification.

However, United States' policy towards Korea has not always been a constructive one. As Eberstadt (1995) says the US policy has been marked by disasters, unpleasant surprises, and missed opportunities. An opposing view is given by Youngnok Koo and Dae-Sook Kuh (1984) in their edited volume. They argue that United States' fighting with the North Korean forces to preserve a free and independent South Korea during the Korean War constitutes the most important legacy of the US-South Korea relationship. The fraternal relationship that was envisioned at the time of founding US-Korea relationship has been greatly strengthened since then. Derek J. Mitchell (2002), laying down the US policy in the possible scenario of Korean re-unification, says that while the new Korea will certainly be seeking a more equal bilateral relationship with the United States, China and Russia will want a unified Korea more independent of the United States. Highlighting the danger of resurgent nationalism, Mitchell says that this could exacerbate anti-American attitudes. Despite this, US alliance, military presence, and sustained diplomatic engagement will endure. Post re-unification a sustainable burden-sharing arrangement will be critical. Also, Korea should be encouraged to participate in a regional missile defence network.

David Shambaugh (2003) in analysing China's policy towards the Korean peninsula says that despite supporting North Korea for decades during the Cold War as well as in the post-Cold War era, Beijing has increasingly got uncomfortable with the present regime in Pyongyang. Therefore, China's preferred future for the Democratic People's Republic of Korea (DPRK) is regime reform, the bottom line

being to prevent North Korea's collapse. Since China tends to view the Korean peninsula as its natural sphere of influence, it is also opposed to a hasty integration of North and South Korea. Fei-Ling Wang (1999) says that other than the co-existing sympathy and apathy in China for North Korea's famine-struck population and the financially struggling South Koreans, China's policy on Korean re-unification has had no public or internal debate in the 1990s. Officially supporting an independent and peaceful re-unification of Korea in principle, Beijing clearly prefers the current political stability and the existing balance of power on the peninsula in the near future. At the heart of China's Korea policy is its desire to see the peninsula free of any external military presence, divided or unified. More importantly for China, the demands for Korean re-unification bring to fore its anxieties over Taiwan. Thus, Beijing publicly and somewhat genuinely welcomes efforts toward Korean re-unification.

If we look at the interests of other powers in the region, we can see that both Japan and Russia have tried to balance their relationships with Seoul and Pyongyang. Looking at the Japanese interests in the Korean peninsula Evelyn Colbert (1986) maintains that overcoming the burden of historical past has been an important challenge in the Japan-South Korea relations. However, Japan recognises that few events would cause the country greater problems than an armed conflict between North and South Korea. This also has its origins in the traditional Japanese view of the Korean peninsula, which has seen it as a dagger aimed towards the heart of Japan. Seeing peaceful re-unification as an unlikely scenario, Japan has desired to see greater stability in the North-South relationship. Its relationship with the two Koreas and the balance that it maintains is seen by Tokyo as contributing to this end. The nature of the balance, however, has been a source of dispute not only with Seoul but also in Japanese politics.

Eugene Bazhanov and Natasha Bazhanov (1994) say that the peculiarity of the Soviet Union-Korea relationship in the last days of the Soviet Union was that Mikhail Gorbachev began with attempts to strengthen solidarity with Communist comrades in North Korea and ended up forging friendly links with Seoul at the expense of the alliance with Pyongyang. Whereas it took a while for the new Russia to come to terms with the new balance of power in Asia-Pacific, it soon sided with Seoul recognising its economic interests. Yet, the future of relations between Russia and the Korean peninsula will depend to a large degree on the northern part of the peninsula.

Security and energy issues have dominated the geopolitics of the Korean peninsula. Moreover, they have got embroiled in the great power rivalry too. Andrew Mack (1993c) in his edited work deals with the different national perspectives on security issues of the Korean peninsula. The contributors to this volume discuss issues such as arms control, North Korea's nuclear programme in detail. Discussing the security atmosphere on the peninsula in the early 1990s, Andrew Mack says that the situation remains both uncertain and highly problematic. While South Korea based on its economic performance has made friendship with Moscow and Beijing, North Korea has lagged behind. The arms build up in Northeast Asia has not diminished since the end of the Cold War, if anything it has increased. North Korea remains at the centre of proliferation concern in Northeast Asia. Pyongyang's nuclear programme does constitute a serious military threat to the region. Mack says that it is the product of the Communist regime's perceived security fears. Mack's analysis indeed suggests that there are few grounds for optimism with respect to security on the Korean peninsula.

Analysing the North Korean nuclear programme Mack (1991) in one of his articles "North Korea and the Bomb" says that at least two geopolitical motives could be identified for North Korea's nuclear programme: first, to use the nuclear option as a diplomatic trump card to exact maximum concessions from Japan and the United States. Secondly, to use it as a counterweight to the growing capabilities of South Korea's conventional forces. He also says that United States' commitment that it would not use nuclear weapons against the North constitutes a "negative" security guarantee. When the 1994 nuclear crisis came upon the international community, Mack (1993a) argues that it came as a surprise to many. Here he elaborates upon the motives of North Korea in developing its nuclear programme that he had outlined in his 1991 article. Motives such as the shifting of military balance, countervailing deterrent, the changing nature of the US-South Korea alliance, seeking international status, the bargaining chip, the *Juche* (self-reliance) interest, etc. are identified by him. Forecasting about the future, Mack says that because it is hard to rely upon assurances of North Korea, the international community will indeed have to think about what it means living with the reality of a nuclear-armed North Korea.

Taehyun Kim (1996) makes a study examining South Korean perceptions of North Korean nuclear programme. The author says that in the minds of the South Korean public, a dual image of North Korea creates a "love-hate" relationship.

Depending on the situation, either the "brother" or the "enemy" image is used, each having strong emotional appeal. Those who consistently emphasise the image of brother can be labelled "Nationalists." Those who emphasise the image of enemy can be called "Realists." When Washington adopts a tougher attitude towards Pyongyang the imagery of "brother" is used by Seoul to offset the harsher effects of US policy whereas when it adopts a soft line, Seoul uses the imagery of "enemy" to demand sterner attitude. Moreover, for the American policy-makers the North Korean nuclear programme has been a proliferation issue, for South Koreans it constitutes a national security issue. Such divergent perceptions in the opinion of the author generate considerable strains between the two allies.

Kent Calder (2005) argues that energy lies at the heart of virtually all policy approaches to the Korean peninsula's future. Energy was an important aspect in the 1994 North Korean nuclear crisis and the Six Party talks. Therefore, energy becomes an inevitable part of both the problem as well as a solution to the North Korean nuclear crisis. Apart from this, energy also becomes an excellent confidence building measure for engaging the interests of regional and extra-regional powers on the peninsula. Korean peninsula's energy insecurities can also be connected with its geographical endowments. Korea as a whole lacks domestic oil and natural gas reserves. Yet, South Korea, in particular has a remarkably high level of energy consumption (Calder 2005). Hence, apart from geopolitical reasons, both the Koreas have found the nuclear proposition attractive, particularly since the oil shock of 1970s. According to Cumings, the North Korean justification for the development of its nuclear programme has been to make alternative arrangement for energy derived from domestic coal and imported petroleum (Cumings 2005: 480). Pyongyang sought to do what Seoul and Tokyo had been doing for decades.

The above review of the literature suggests two things:

- That the geopolitics of the Korean peninsula has primarily been a result of great power involvement in the region; and
- That the dynamics of the Cold War had its extensive ramifications for the peninsula particularly North Korea. Driven into the corner by the aggressive designs of the United States, Pyongyang too resorted to aggressive posturing primarily through its nuclear and ballistic missile ambitions.

However, the existing literature on the Korean peninsula also has one critical gap. The literature does not take a holistic view of the peninsula. While not focussing on the role of the external powers as such, the existing literature primarily focuses upon the security issues on the peninsula and its implications for the external powers. This gap will be attempted to be filled in by this research work.

DEFINITION OF THE RESEARCH PROBLEM

The Korean War is considered as one of the important events of the 20th century. The event also shows the geopolitical significance of the region. The war witnessed participation by all great powers in the international system: United States, Great Britain, Soviet Union, Japan, and China. Minus the participation of these powers, the picture that Korean peninsula presented today would have been completely different. The divided Koreas today have completely different social, political and economic systems. This presents a formidable challenge for their re-unification. In addition, the geopolitical interests of the great powers are such that the movement for re-unification keeps losing momentum. This also prevents a genuinely peaceful environment in the Northeast Asian region.

This research work would focus upon the geopolitics of the Korean peninsula. Looking from the theoretical paradigm of geopolitics, it would examine various issues such as the nuclear programme of North Korea, energy issues on the peninsula, the great power interests in the region and the efforts for Korean re-unification. Understanding these issues is important because Korean peninsula constitutes an important flashpoint in the Asian continent greatly affecting the regional peace and security. In terms of scope, the study would primarily focus upon events in the post-Cold War era using Cold War events as a means to explain the present.

Geopolitics as a concept focuses upon the location of states and its political significance. Using this concept as an analytical tool, the dynamics of Korean peninsula will be examined to understand issues of nuclear weapons and other energy dynamics. Interests of great powers in the region will also be looked at to comprehend how the great power rivalry has influenced the evolution of the Korean peninsula.

In the course of this research work, several questions will be raised such as, what is the geographical significance of the Korean peninsula? What are the interests of the regional and extra-regional actors? How does the North Korean nuclear programme affect other countries? What are the prospects of Korean re-unification?

As a means to answer these questions, two hypotheses will be tested. The first hypothesis is that the persistence of the Cold War atmosphere and geopolitics over the energy resources has pushed the Korean peninsula towards more instability. The second hypothesis that will be tested is that the role of the United States has increased the friction between North Korea and South Korea.

RESEARCH METHODOLOGY

The dynamics of Korean peninsula will be examined by the application of theory of geopolitics. Firstly, an elaboration will be made of the theory of geopolitics as given by Rudolf Kjëllen and other geographers and then make it operational with regard to the Korean peninsula. In terms of method, this study will follow historical method in studying the issue. The theoretical approach followed here will be a Realist one where an analysis will be made of the interests of the actors involved such as North Korea South Korea, China, Japan, Russia, and most importantly, the United States.

The sources will be both primary and secondary. The secondary sources would be complemented by other research techniques. Since the nature of the topic is contemporary, help will be taken of newspaper reports, websites and other such tools. Geographical data will also be used to explain the issue. Extensive use will be made of maps for explanation.

DEFINING THE CONCEPTS

Defining the concepts which lay at the heart of this research is necessary. Resources can be conceptualised as any natural or human wealth that can be used for satisfying human needs (Wikipedia Contributors 2007). For this research, natural resources are defined as those naturally occurring substances that are considered valuable in their relatively unmodified (natural) form. Geopolitics can be defined as examining the relationship between humankind and the spatial environment surrounding it.

RESEARCH DESIGN

As an introductory chapter, this chapter has laid down the research problem, explained the objectives and the research methods. This research work is divided in three substantive chapters. The second chapter entitled "Korean Peninsula in International Relations" takes a historical overview of the Korean peninsula. Since historical times, Korean peninsula has occupied a strategic position in the geopolitics

of great powers. Therefore, the region has witnessed involvement of other powers. The second chapter will study the dynamics of this great power involvement.

The third chapter focusses on the critical issue of security. It will examine the North Korean nuclear programme in detail. What were the reasons that North Korea pursued the nuclear programme? How did the other powers react to this issue? It will also analyse the implications of the North Korean nuclear programme for the Northeast Asian region. After analysing the issues of security in the third chapter, the fourth chapter will take a look at the energy and other related issues on the peninsula. Problems and prospects of the Northeast Asia gas pipeline will also be examined. The final chapter will summarise the conclusions of this research work and take a look at the contemporary developments.

ASSESSMENT

The above account makes it clear that the Korean peninsula has undergone turbulence since historical times. The involvement of great powers in the peninsula has created instability in the region. Apart from the aggressive posturing by North Korea and South Korea on either side of the DMZ, the maritime boundary disputes are also highly contentious. Naval clashes between the two countries are an endemic feature of the region. The division of the Korean peninsula was exacted at a very heavy human and economic cost and continues to suck the vital energies of the two countries. North Korea's military posturing not only threatens South Korea but also Japan, Taiwan and Asia Pacific region where the US has created an enormous strategic interest for itself in the region. Hence a military conflict between the two Koreas would not be confined to the two nations but would extend to the neighbouring regions. The peninsula has so far proved to be the most intransigent vestige of the Cold War. The next chapter would take a historical overview of the Korean peninsula and outline the stakes of the external powers in the region.

CHAPTER

2 KOREAN PENINSULA IN INTERNATIONAL RELATIONS

CHAPTER TWO

KOREAN PENINSULA IN INTERNATIONAL RELATIONS

Any understanding of the present is deeply rooted in the past. A look at the Korean peninsula proves this point. This chapter takes a look at the vast history of the peninsula. It will begin by a historical account of the early period especially the history of the Three Kingdoms which existed on the peninsula. Then it will take a look at the modern period which was dominated by the Japanese colonial rule over the peninsula. This historical background will serve as a foundation upon which the present period will be analysed. Korean War was one of the most important events of the 20th century and also the Cold War. Hence, a detailed examination will be done of the causes, course and implications of the Korean War. This historical overview will cover the period up to the 1991 or the end of the Cold War. Sadly even after the end of the Cold War, the mentality of the Cold War still prevails on the Korean peninsula. The dynamics of this issue will be covered in the third and the fourth chapters which will take a look at the security and energy issues on the peninsula.

EARLY HISTORY OF KOREA

The history of the Korean peninsula is a history of great power struggle over the region, like any history of a small country wedged between more powerful neighbours. In ancient times, the Korean kingdom was known as the "Hermit Kingdom". For a thousand year Korea was ruled by two dynasties separated by a brief Mongol conquest. It suffered Japanese and Manchu incursions in the sixteenth and seventeenth centuries but survived until the end of nineteenth, by which time it had become a pawn in Sino-Japanese conflict. Japan's victories in the war with China in 1894-1895 and Russia in 1904-05 gave Japan a free hand in Korea, which was annexed in 1910 (Calvocoressi 2004: 117). Despite the fact that the peninsula has proved to be vulnerable to foreign invasions both from the sea and the continental mainland, and in spite of the dominating influence of Chinese culture, Korea has managed to maintain a cultural and ethnic identity quite different from that of China or Japan (Kim 1988: 3).

Korea came into existence as a nation during the passage of Neolithic age and the Bronze Age, as adjacent cultures in and around Manchuria and Korean peninsula

Map 2.1

THE THREE KOREAN KINGDOMS

Base Map Source

The Association of Korean History Teachers (2005)

absorbed or merged with each other (Gardiner 1969). During the Neolithic period, people on the Korean peninsula and in Manchuria lived as groups of farmers and hunters which later developed into clan- centered societies. During the Bronze Age, communal settlements began. It was during this time that the classes of rollers and the rule as well as the concept of private property emerged and gave rise to a hierarchical society (Shin 2005: 17-18).

In the ancient times, Korea was a power in East Asia and once ruled much of Manchuria. The Kingdom of Goguryeo (37 B.C.- 668 A.D.) was successful in repelling the aggression of China's Sui Dynasty (108 B.C.- 313 A.D.) and Tang Dynasty (618- 907), while the Kingdom of Balhae (698- 926) ruled over a vast territory extending to the north as far as Siberia (Song 2004: 153). In the seventh century the various states of the peninsula were unified for the first time under the Silla Kingdom (57 B.C.- 435 A.D.) (Gardiner 1969). Such homogeneity has enabled Korea to be relatively free from ethnic problems and to maintain a firm solidarity with one another until the present times. Buddhism and Confucianism were introduced to and adopted by the Silla Kingdom during its reign (Ilyon 2004: 45). Buddhism enabled spiritual unity among the people and laid the foundation for a rich culture to develop, whereas Confucianism provided political, social, and ethical principles and rules (Shin 2005: 23).

The other kingdoms that existed during this period were Goguryeo Kingdom (37 B.C- 668 A.D.) and Baekje Kingdom (18 B.C.- 660 A.D.). Goguryeo covered large parts of present-day Manchuria (Ilyeon 2006: 24). Baekje Kingdom was located in the Southwestern part of the Korean peninsula and was one of the most advanced nations at that time. It had the closest communication with neighbouring Japan. A noteworthy aspect of Baekje's rise as an ancient kingdom was its maritime activities and the inroads it made into neighbouring areas (Shin 2005: 29).

MODERN HISTORY

The modern history of Korea is dominated by the Japanese colonial occupation. In the 17th century, the kingdom of Korea was opened to European influence through the missionaries from the Chinese mainland. The Kanghwa Treaty, concluded between Korea and Japan in 1876 formally detached Korea from the Sino-centric world. It declared Korea to be an "independent state", opened three Korean ports to foreign trade, allowed free commerce between Korea and Japan, stipulated an exchange of

envoys, and provided Japan with certain ex-territorial rights (Borton 1955: 68). By the end of the 19th century, increased Japanese interest in the Korean peninsula was noticed, which clashed with Chinese and Russian interests. In 1894 the first Sino-Japanese war over Korean suzerainty was fought in which China was defeated and thereafter chose to exclude Korea from its sphere of interest. The first Russo-Japanese confrontation over Korea took place in 1895.

The second Russo-Japanese war took place in 1904-1905 whereby Japan completely defeated Russia and established an undisputed claim over Korea. In 1910, Japan annexed Korea and continued to rule it until its defeat in the Second World War in 1945. During its colonial rule, Japan imposed a policy of national assimilation against the will of the great majority of the Korean people. For the first 32 years of Japanese domination (1910-1942) Korea was administered as a Japanese imperial colony under the supervision of the Overseas Ministry. The imperial representative, the Governor General, ruled Korea with a massive network of highly disciplined Japanese military and civilian police (Se-Jin and Chi-Won 1978: 16). It also used Korea as a raw materials and industrial production base for its North-western expansion into Manchuria. However, the Koreans fiercely resisted the Japanese rule initially by force of arms and after the First World War passively. These attempts at suppressing Korean nationalism did not succeed and the Koreans continued to cherish their independent identity as a people and a nation.

The issue of Korean independence was first discussed in the Cairo conference in December 1943, attended by then British Prime Minister Churchill, US President Roosevelt and the Chinese Nationalist leader Chiang Kai Shek. It was agreed that on defeat of Japan, Korea would be granted independence and the unity of the peninsula was assumed. Further, the Yalta conference held in February 1945 endorsed the right of the Soviet Union to expand southwards into Korea. This perhaps formed the background to the acceptance by the US of Soviet occupation North of 38th Parallel (The Association of Korean History Teachers 2005: 144). The Potsdam Conference held in July 1945, confirmed in essence the Cairo declaration. To administer the surrender of Japanese troops in Korea, American and Soviet negotiators hastily agreed, in August 1945, to an administrative division of the peninsula at the 38th parallel. This famous line came into existence as a result of negotiations between army officers of relatively junior rank; it was not a creation of ministerial decisions (Millett 2001: 923). However, even after the defeat and surrender of Japan, what

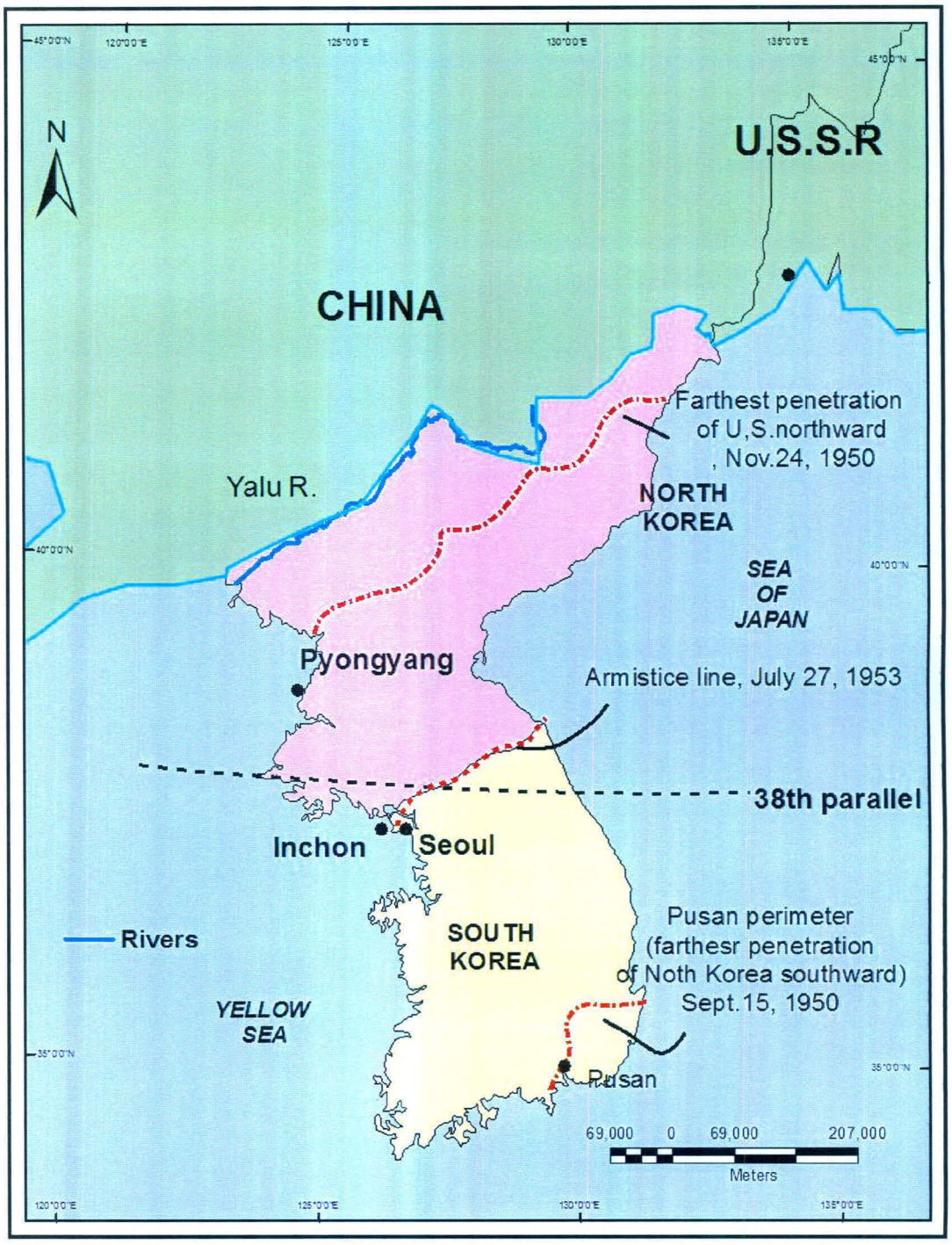
prevented the Korean independence was the ideological conflict and confrontation between the US and the Soviet Union. Administrative convenience hardened into political fact and thereafter all attempts to equip Korea with a single government failed (Calvocoressi 2004: 119). The division of Korea though on ideological lines had subtle economic implications too. The division was asymmetrical in almost every way. The Republic of Korea (ROK) got a population twice the size of the Democratic People's Republic of Korea (DPRK) and the best arable river valleys, but North Korea got all the hydro-electric power and coal and mineral resources as well as the Japanese-built industrial base situated near the energy resources (Millett 2001: 930). All industries were concentrated in the North while agriculture in the South (Bhonsle 1986: 24-26).

THE KOREAN WAR (1950-53)

While two super powers fought for hegemony over the Korean peninsula in the UN and other forums, the Korean nations advanced towards self- government. In North Korea, three Communist groups were in existence before 1945. The first, led by Kim Il Sung was under Soviet influence. The second group known as the Yennan group was inspired by Chinese Communist ideology and Mao's guerilla warfare theories. The third group consisted of local Communists, active in conducting underground operation against the Japanese occupation forces (Dwivedi 1985: 5-6). All these ultimately united under Soviet patronage and the leadership of Kim Il Sung. In 1947, North Korea was declared as the Korean People's Republic, later being renamed as the Democratic People's Republic of Korea (DPRK) with Kim Il Sung as the Head of the State (Lankov 2002: 4). Although Kim and his close associates believed in re-unifying Korea by force, Soviet leader Stalin was reluctant to embark on a course that might provoke a war with the United States. In South Korea meanwhile, an interim government was formed in May 1947 under the leadership of President Syngham Rhee and the ROK was formally declared. South Korean leaders also cherished their own version of military solution, *Bukjin* (March to North), but they had neither the ability nor a well-prepared plan to do so (Taik 1999:62). Rhee's single point agenda was the imposition of national unity by force. Yet there were numerous 'border clashes' along the 38th parallel and guerrilla struggles in South Korea in 1948-49 (Taik 1999:62).

Map 2.2

KOREAN WAR, 1950-53



Base Map Source

Cohen (1993)

While both the South and North Koreas claimed to be the true representatives of the entire Korean people, in actual fact they continued to remain divided on ideological and territorial grounds. So, the war in Korea was essentially a war between two peoples of the same nation. Thus it is interesting to study as to how they went against each other within a short sport span of five years after division.

Rhee and Kim competed to re-unite the peninsula, with each of them conducting military attacks along the border throughout 1949 and early 1950. After failing to strengthen their cause in the free elections held in South Korea during May 1950 and the refusal of South Korea to hold new elections as per North Korean demands, the Communist Korean People's Army (KPA) moved south on June 25, 1950 to attempt to reunite the Korean peninsula. Each of the two Koreas has consistently blamed the other as the sole aggressor in the war, but expert opinion today suggests a far more nuanced view pointing towards the fact that the attack by North Korea took place in the context of the increasingly violent political polarisation of the peninsula in the post-1945 period (Eckert *et al* 1990: 344). Some of the other causes for the Korean War that can be identified are as follows (Bhonsle 1986: 24-26):

External Causes

a. Super Power Rivalry and The Cold War: The end of the Second World War saw new forces emerging in international politics. Britain and Japan were to lose their pre-eminence in Europe and Asia respectively and US and USSR were to take their place. There was a great ideological division between these two powers which soon turned into a super power rivalry. As a result the allies of the Second World War became bitter post-war enemies. Europe was also divided on ideological lines and a state of Cold War prevailed on that continent. Korea represented a miniature model of Europe. The clash of ideologies placed the Korean people in the whirlpool of the power politics ultimately culminating in open war. In a sense Korea became a testing ground for the ideologies. Strategically, Korea occupied crucial position between USSR, China and Japan. China was concerned about hostile power gaining control of Korea whereas Western powers feared Korea falling under the Communist influence (Dwivedi 1985: 6).

b. Emergence of Communist China: Another important development in Asia was the emergence of Mao Tse Tung's Communist China, with the defeat of Chiang Kai Shek's Nationalist forces after a protracted Civil War. A Communist China could not live with the shadow of the capitalist stronghold in Korea constantly threatening it from the south. This drove it to actively participate in the Korean conflict in November 1950.

Internal Causes

a. Ideological Differences: By 1948, Korea had become a house divided against itself. The North was a Communist stronghold while in the South a right wing government under Syngham Rhee was turning into an authoritative regime. The two parties fervently believed in the uprightness of their own ideologies and desired to bring the other half into its own sphere of influence. Force was the ultimate outcome of such intransigent ideas.
b. Military Imbalance: Immediately after gaining independence North Korea undertook a programme of building up a powerful armed force. The South however was unable to organise its military to a similar refinement. In 1950, there was a wide disparity between the two nations in terms of strength, equipment and training of its armies. This led the North Koreans to develop a strong belief in the possibility of a military victory and successful unification of the peninsula by force.
c. Economic Factors: The division of the country's resources with the establishment of the 38th parallel as a boundary between the two parts was economically uneven. The North was bestowed with almost the entire industrial and hydro-electric potential while the South had monopoly over the agricultural resources. Thus the South was deprived of power and electricity whiles the North of agricultural products, resulting in a stream of refugees from the North to the South. These factors further widened the ideological schism.

Spatial Patterns of the Korean War

After the North Korean attack, South Korean President Syngman Rhee sought US assistance. The US called on the UN Security Council to invoke the Charter and brand the North Koreans as aggressors. This was done and member states were called on to

send in military assistance under the UN Security Council Resolution 377A also known as "Uniting for Peace Resolution" (UNGA Res. 377A 1950). Led by General MacArthur, UN forces responded soon after the North Korean Army crossed the 38th Parallel (Petersen 1950: 220). They began defensive operations by establishing a perimeter around the port city of Pusan after North Korean forces had driven them almost entirely off the peninsula. The US forces also launched 'Incheon Landing' by which they were able to regain the control of Seoul (Hickey 2001).

After regaining Seoul, the Syngman Rhee Administration returned to Seoul, and seeking to build on the momentum, attempted to achieve re-unification by expanding northward with the help of the US. Accordingly, the UN forces along with the South Korean forces crossed the 38th parallel and headed towards Pyongyang in the hot pursuit of North's troops (Ovodenko 2007: 264). As a result, the North Korean Forces remaining in South Korea were cut off from their route to north and hid in mountains, while their forces in the North continued to retreat. The South Korean and UN forces seized Pyongyang in just 15 days. On October 26, they finally reached the Amnok River. The so-called policy of 'unification by expanding northward' seemed close at hand (Hickey 2001).

The Chinese Communists, led by Mao Tse-Tung and Zhou Enlai, were becoming increasingly concerned that the Americans might undertake a full-scale intervention in the conflict and defeat the North Koreans (Ovodenko 2007: 262). Chinese leaders did not want to fight, but Mao, convinced that the Americans would leave him no choice, chose to fight on Korean rather than Chinese soil (Levin 2008: 83). In October, as UN forces crossed the 38th parallel and marched towards the Yalu River that separated Korea from China, Mao ordered Chinese troops into Korea (Cohen 1993: 71). About 600,000 Chinese volunteer soldiers were sent (Cohen 1993: 75). The Chinese intervention provided the DPRK forces with time and training to re-group and as a result were able to put some stiff resistance to UN force (Hoare 2002: 237).

The conflict on the Korean peninsula had now spread to become a war between powerful countries. The Chinese forces crossed the Yalu River on October 19 and were quickly able to reverse the situation by retaking Pyongyang on December 10 (Myers 2001: 92). The UN forces recoiled in disorder and, by January 1951 were defending a line well to the south of Seoul when it was once again seized by North Korean forces. The South Korean and US forces re-organised their battle lines and

attacked North Korean forces with superior force, regaining Seoul on March 5 (Hickey 2001).

By mid-1951, with the land battle in stalemate, the United States and China felt the need for a ceasefire. Not only the South Korean Army, but the United States, North Korean, and Chinese forces had all suffered considerable casualties. Both sides agreed to go to the conference table and armistice talks began. Despite this sense of urgency, the armistice talks dragged on for two years (Hickey 2001). This was primarily because South Korean President Rhee was against the armistice and continued to insist on re-unification by expanding northward (Cohen 1993: 76). But the United States had promised economic assistance, enticing South Korea into signing the Armistice Treaty. So, ultimately in 1953, the commanders-in-chief of the United Nations (UN), Chinese, and North Korean forces signed the Armistice Treaty. A De-Militarised Zone (DMZ) (also called as the 'truce line' of 1953) was established on the border.[1] Irrespective of this agreement, both South and North Korea continued their military build ups. Both sides withdrew from their fighting positions, and a UN commission was set up to supervise the armistice. Yet no peace treaty was signed signifying the end of the war. Hence, technically, both the Koreas are still at war (Hickey 2001).

The Korean War remains not only a contemporary security issue since it created the two Koreas, but stands as a cautionary tale for explaining wars taken place earlier and wars yet to come. With an estimated three million-plus deaths of all nationalities (including 58,000 American soldiers), the Korean War still ranks behind only the two world wars as the most costly war of the twentieth century in terms of human lives lost (Millett 2001: 925). And yet, the war has also come to be recognised as a defining event in the long peace which followed the Second World War.[2] It

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[1] The DMZ is 248 km. long and approximately 4 km. wide. The negotiations between the forces were held at Panmunjeom village in the DMZ.

[2] In fact, the Korean War was also the first war since World War II in which a country possessing atomic Weapons had engaged in combat- given that nuclear weapons had become the centrepiece of US defence strategy after 1948, there was every reason to expect that US leaders world use their new weapon to defend or advance American interest in any Cold War conflict. Indeed, numerous American military leaders fully expected that this would be the case. The precedent for use of the weapons had already been established in Hiroshima and Nagasaki in Japan, and at the time, the United States possessed overwhelming nuclear superiority over the Soviet Union, which had only a negligible nuclear capability. North Korea and China had no nuclear capability. Hence, the US possessed an effective atomic monopoly at the beginning of the war. Yet, as subsequent events showed, the US leaders chose to fight the Korean War with

defined not only the subsequent course of the Cold War, but shaped relationships within the alliance blocs, Communist and Western alike (Steuck 1995: 312).

POST-KOREAN WAR POWER POLITICS ON THE PENINSULA (1953-1991)

After the Korean War, the ROK and DPRK became embroiled in the global ideological Cold War between East and West. Not only that, they both followed dramatically different paths. Two hardened military security triangles confronted one another throughout the Cold War on the peninsula: the USSR-DPRK-People's Republic of China (PRC) on one side and the USA-ROK-Japan on the other. It culminated in five decades of cold peace thereafter, punctuated by periodic DMZ confrontations and maritime battles (Calder 2004b: 27) but perennial arms racing and military tensions, with only brief periods of détente between two Koreas.

When Pyongyang emerged from the shadows of the Korean War, its economy grew at a significantly higher rate surpassing Seoul. However, as the mainstay of the world Communist movement- the Soviet Union began to weaken, the North Korean economy too began to crumble down. Earlier, North Korea had developed its own brand of communist Confucianism. It also promoted the *Juche* (self-reliance) ideology which became the central guideline for both domestic and foreign polices. The regime in the DPRK learnt much from both Soviet and Chinese ideology but developed a peculiarly Korean peninsula founded on *Juche.* The ideology according to Keith Howard (1996) had four distinct elements:

a. It was monolithic.
b. It was trumpeted by the regime as something new.
c. It was closely associated with Kim Il Sung and its development mirrors Kim's personal history.
d. *Juche* was anti-internationalist and anti-hegemonic (Howard 1996: 170).

The *Juche* ideology promoted the belief that North Korea represented a sovereign polity embodying a national spirit. (Park 2000-01: 556). North Koreans commonly believed that the *Juche* ideology successfully protected the country from the uneasiness of Sino-Soviet tension and shielded Pyongyang from the strong winds of "revisionism" that swept other Socialist countries during the 1960s. Kim Il sung

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conventional means, at a cost of 58,000 American lives rather than resort to their ultimate weapon (Tannenwald 2007: 115- 154).

emphasised that North Korean Socialism was different from the Socialism in Eastern Europe which lacked leadership and a leading ideology (Park 2001: 92-93). Pyongyang also came to make mutual friendship and co-operation treaties with the Soviet Union and China on July 7, 1961 and July 11, 1961, respectively. Both Article I of the DPRK-Soviet Union Treaty and Article II of DPRK-China treaty held that if one party was invaded, the other party should 'provide military aid and other measures immediately by all means' (Taik 1999: 71). In its military thinking North Korea was influenced by Soviet strategy and Chinese tactics, with the primary emphasis on People's War. Some analysts maintained that the primary aim of any North Korean military offensive would be the re-unification of the Korean peninsula within 30 days, and the secondary objective would be the defence of its own territory (Singh 2005: 229).

The period of 1960s however also marked a watershed in beginning the transformation of the Northeast Asian system and bringing Korea back in touch with its neighbours. This resulted in the normalisation of Japan-ROK relation in 1965, and both Taiwan and South Korea began industrialising under the banner of export-led development. With US President Richard Nixon's opening to China in 1971-72, both North and South Korea watched helplessly as their great power benefactors cosied up to each other. From 1972 to 1983, DPRK's foreign policy sought a breakthrough in relations with United States, as it tried to be the Korean beneficiary of Sino-American détente. Both Koreas also held secret talks, leading to the July 4, 1972, announcement on peaceful re-unification. However, within a year this initiative had effectively failed. The UN voted annually in favour of the re-unification of Korea by way of free election but there resolutions too proved ineffective.

Pyongyang also vastly deepened its relations with the Third World, sponsoring many exchanges with leaders of developing countries, and becoming a force in the Non-Aligned Movement (NAM). By and large Pyongyang stayed close to the Chinese foreign policy line during the 1970s, while taking care not to antagonise the Soviets needlessly.

From 1983 to 1987, Pyongyang tilted toward the Soviet Union. The Soviets upgraded the Korean People's Army Air Force (KPAAF) with MiG23s, jet fighters that nonetheless reflected early 1960s technology. The advent of Mikhail Gorbachev, however, put a damper on this warming trend, as the Soviets systematically cut back on this aid. In the 1980s the DPRK also became a significant actor in international

arms trafficking, selling machine guns, artillery, light tanks, and other items to friendly countries such as Zimbabwe and Iran. It also sold its own Scud rockets and trans-shipped Chinese Silkworm missiles to the Middle East, according to US intelligence, although some analysts suggested that there might be Korean copies of this Chinese missile, since Pyongyang copied Soviet Scud missile and even improved upon them. Politically, Kim Il Sung established his iron grip over the country so no opposition dared to show its head (Bae 2007: 375).

South Korea became an economic powerhouse, with one of the world's primary producers of ships, automobiles, electronics, steel, and other goods. The military inferiority of the South was mitigated by American reinforcement. Washington transferred an extensive amount of equipment to South Korea in order to make the ROK forces take on more responsibility (Taik 1999:67). US economic aid to South Korea was largely composed of consumer goods under the name of 'defence support'. Another major form of aid was 'direct military support' which came from the sale of surplus agriculture products provided under the Public Law 480 programme (Taik 1999:68).

Domestically, South Korea faced uncertain times with later years witnessing a gradual move towards democratisation. In 1960, a student uprising led to the resignation of Rhee followed by a period of profound civil unrest and general political instability. General Park Chung-hee led a military coup against the weak and ineffectual government the following year. Park took over as president from 1961 until his assassination in 1979, overseeing rapid export-led economic growth as well as severe political repression. The year following Park's assassination was marked by considerable political turmoil as the previously repressed opposition leaders all clamoured to run for the presidential office (Kirk 2000).

This disorder in South Korea and the emergence of the "new Cold War" on a world scale froze the Korean situation through much of the 1980s. In the early 1980s, some 4,000 American personnel were added to the 40,000 already there, advanced F-16 fighter ets were sold to Seoul, and huge military exercises involving upwards of 200,000 American and the Korean troops (called Team spirit) were held toward the beginning of each year (Wikipedia Contributors 2007).

Sino-American relations warmed considerably in 1983, and for the first time China said publicly that it wished to play a role in reducing tensions in Korea. This was followed by a major DPRK initiative in January 1984 that called for the first time

for three-way talks between the United States, the ROK, and the DPRK (Hao and Qubing 1992: 1138).

Right in the middle of this activity, however, a terrorist bombing in Rangoon, Burma, in October 1983 took out much of the South Korean cabinet (but narrowly missed President Chun). A Burmese local court determined that North Koreans were behind the bombing, and that, combined with the Reagan build up, made relations between Washington and Pyongyang as bad as in any period since the Korean War (Sungjoo 1980).

The re-emergence of détente in the mid-1980s provided a major opportunity to resolve the continuing Korean confrontation. South Korea was much more effective then the North in exploiting these new opportunities. It pursued an active diplomacy towards China and Soviet Union and various East European countries, saying it would favour trade and diplomatic relations with "friendly" Communist regimes (Bae 2007: 375). In 1984, the bilateral trade between South Korea and China rose to $ 462 million and further to $ 1,679 million in 1987, making South Korea China's seventh largest trading partner (Jae 2007: 26). The blooming of relations between the two countries were certainly affected by the economic dynamics of their interaction.

Under President Roh Tae-woo the Seoul government developed a "*Nordpolitik*" policy on the German modal of "*Ostpolitk*" seeking to open talks and trade with Pyongyang. In the fall of 1990 for the first time prime ministerial talks were held in Seoul in September, in Pyongyang in October. In 1991 both Koreas joined the UN, in spite of long-standing North Korean opposition to entering that body under two Korean flags. Roh's Nordpolitik appeared to achieve its greatest success on December 13, 1991, when the Prime Minister of the ROK and the DPRK signed the "Agreement on Reconciliation, Non-aggression, Exchanges and Co-operation" at Seoul. Its twenty-five articles called for mutual recognition of the respective political system, an end to mutual vilification and confrontation, "concerted efforts" to turn the Korean War armistice into a durable peace, guarantees of non-aggression, economic co-operation and exchange in many fields, and free travel through both halves of the country for the estimated ten million Koreans from families separated by the war. By the end of 1991 both sides had also signed an agreement pledging to make the Korean peninsula nuclear free (Friedman 2003).

US-SOUTH KOREA SECURITY PARTNERSHIP

As mentioned earlier during the Korean War, Seoul had placed its Armed Forces under the command of General Macarthur in his capacity as the commander. This arrangement under the UN continued for after the War also. The UN command headquarters was responsible for the defence of South Korea but had no South Korean officer in it. The majority of the South Korean Units were placed under the UN command. Both US and South Korea signed a Mutual Defence Treaty, which enjoined the two countries to co-operate in defending each other's security and strategic interests. The series of Annual Security Consultative meetings alternately in the US and South Korea began in 1968. In 1971, the withdrawal of division by the US from South Korea was greatly resented by the latter. Relation between the US and South Korea further deteriorated in the following years when US President Jimmy Carter during his election campaign time and again reiterated his resolve to withdraw all combat troops from South Korea. In March 1977, accordingly the US decided to withdraw all US combat troops serving in South Korea in a four to five year timeframe. Initially 3600 troops were withdrawn. In 1978, a bi-national headquarters i.e South Korea-US Combined Forces Command (CFC) was established. The South Korean frontline military units were transferred from the UN to the CFC under the command of an US officer.

In early 1981, relations were again on the upswing following President Reagan's announcement that further withdrawals of US troops from South Korea was not being contemplated. In 1991, there were 45,000 US Troops committed to the defence of South Korea. The troops belonged mainly to the US 8th Army (32,000) and US 7th Air force (12,000). There was also a small contingent at Panmunjeom with the UN command. The presence of US troops, though crucial to, South Korea's defence, and stability in the region, has not been without pitfalls.

ECONOMIC SITUATION OF THE TWO KOREAS

In early 1960s, South Korea embarked on a series of ambitious five-year plans for economic development. Emphasis shifted to foreign trade with the normalisation of relations with Japan in 1965 and resulted in a growth in trade and investment. Rapid expansion, first into light and then heavy industries, followed in the 1960s and 1970s. During this period, the South Korean economy grew at an average annual rate of 8.6%. The decade of 1980s marked the period when South Korea emerged behind

strong protectionist cover to become a flourishing industrial power in a worldwide and mainly liberal economic order (Calvocoressi 2004: 577-578). But unification was not in sight, which could have brought further economic gains for the region.

Until the 1970s, DPRK foreign trade was almost wholly with the Socialist bloc, but in the later two decades it diversified imports and exports towards Japan, Western Europe, and various Third World nations. By the mid-1997s, 40 percent of its trade was with non-Communist countries, and within the Soviet bloc half was with the USSR. By the late 1980s, foreign exchange shortages and other difficulties left North Korea once again rather dependent on the trade with the Soviet Union.

However, the country also struggled in the 1980s and 1990s domestically. Food shortages in the country were chronic which often led to rioting. North could not make much headway on the industrialisation front as industrial production was hindered by lack of modern technology, energy shortages, and low-level productivity. Moreover, the emphasis on defence production further undermined the economic efficiency. Russian demands that it pay hard currency for oil and other items drastically hurt the DPRK'S economy in the early 1990s.

During the same period, various conflicts between North and South Korea on the one hand and North Korea and the US on the other resulted in North Korea feeling threatened by the South Korea-US alliance and consequently, the Sino-North Korea relationship thrived. How exactly the Korean peninsula featured in the great power calculus is explained in the next section.

GREAT POWER INTEREST IN THE PENINSULA

History of Korean peninsula has been the history of great power tussle over the peninsula. It is no wonder then that the US, Russia, China and Japan only hold the key to the political future of the Korean peninsula. This is also because as the first major conflict, and one of the last unsettled issues of the Cold War, a divided Korea remains a challenge to these great powers.

People's Republic of China

China has tended to view the Korean peninsula as a mountain-rigged "natural buffer" protecting its North-eastern hinterland from possible invasions by maritime powers. Should an adversary force control the peninsula, China would be deprived of an indispensable security buffer proximate both to the nation's capital and to one of its most important industrial regions. The Chinese often describe the geo-strategic

relationship with a friendly Korea to be as close as "lips and teeth." A hostile Korea is viewed as a "hammer" hanging over the head of the Chinese dragon. As a rule, China's approach to the Korean peninsula has been relatively benign and passive. However, whenever the peninsula is divided, China's role as the final arbiter of Korean re-unification has become indispensable (You 2004: 2).

During the ancient period, even though the Korean kingdom was a hermit kingdom, secluded from the outside world, it remained a part and parcel of the Sino-centric international order. Through limited trade, China provided Korea with necessary material resources and also military assistance (Lee 1997: 18). So it appeared as a no surprise that in the Cold War era even though Pyongyang and Moscow appeared close, a much longer and in many ways more influential relationship existed between Pyongyang and Beijing (French 2005: 1). During this period, China itself was gripped by heightened security sensibilities. Hence, it obviously came to view the Korean peninsula and particularly North Korea as China's first line of defence and strategic buffer zone vis-à-vis the camp of capitalism, led by the US (Takahashi 2005). So much was the strategic significance that a territorial dispute which emerged during the 1960s did not even endanger the bilateral ties (Gomà 2006: 875). Yet in recent years, according to some strategic analysts, the behaviour of North Korea has indeed constituted a headache for China. China has repeatedly found its own national interests affected and compromised by the provocative and confrontational policies pursued by the regime in Pyongyang (Shambaugh 2003: 43). Yet, it is also true that China has given a gentle treatment to North Korea because of the Chinese fear of alienating the Pyongyang regime which might contribute to destablise the region and downfall of the regime itself (Roy 2004).

In the post-Korean War period, China provided strong support for North Korea to redress its inferiority in material capabilities supplementing the Soviet assistance (Izumikawa 2007: 51). According to Hao and Qubing (1992) three other factors have also played an important role in China's Korea policy. These factors are: China's calculation of the regional power equilibrium, its official ideology and domestic politics and since the decade of 1980s, the growing economic interest in the region (Hao and Qubing 1992: 1137). With regard to the re-unification of the Korean peninsula, China officially supports an independent and peaceful re-unification, but clearly prefers the existing balance of power on the peninsula (Wang 1999: 168).

Japan

Geo-strategically, Korea is a dagger pointed at the heart of Japan (Griffith 1987: 46). Traditionally, Korea has been the invasion route between Japan and the Asian mainland. Therefore, strategic experts argue that Korea is and should still be seen as a potential springboard for an attack on Japan. The relationship between Korea and Japan has been very complex and intricate, which is shaped by intense contradictory passions and clashes of mutual perceptions and interests on both sides (Griffith 1987: 50).

As noted earlier, the modern history of the Korean peninsula has been dominated by the Japanese colonial rule over peninsula. After the end of the Second World War, the Japanese government demanded compensation for all the private properties once held by the Japanese nationals in Korea which were eventually disposed of by the Korean government. The South Korean government responded by its counter claim for fold and art objects taken from Korea to Japan as well as forced labour imposed on the Koreans (Chong-Sik 1962-63: 319).

Japan's most important interests in Korea are indeed related to security but the most visible, concrete aspect of Japan's relations with Korea is at present the economic (White 1976: 299-300). Since 1971, Japan's investment in Korea has been substantially higher than that of the United States.

Looking at the Japanese interests in the Korean peninsula Evelyn Colbert (1986) maintains that overcoming the burden of historical past has been an important challenge in the Japan-South Korea relations. However, Japan recognises that few events would cause the country greater problems than an armed conflict between North and South Korea. This also has its origins in the traditional Japanese view of the Korean peninsula, which has seen it as a dagger aimed towards the heart of Japan. Seeing peaceful re-unification as an unlikely scenario, Japan has desired to see greater stability in the North-South relationship. Its relationship with the two Koreas and the balance that it maintains is seen by Tokyo as contributing to this end. The nature of the balance, however, has been a source of dispute not only with Seoul but also in Japanese politics (Colbert 1986: 278).

Soviet Union/ Russia

Korea has traditionally featured prominently in Russia's international strategy (Lukin 2003: 75). In fact imperial Russia fought two wars with Japan over the control of Korean peninsula. Shapiro (1975) divides the Soviet policy toward Korea into four

periods: (1) 1945-53: *Sovietisation* of North Korea and support to its military attempt to expand Communist control over the entire Korean peninsula; (2) 1953-60: Regularisation and adjustment of relations with North Korea within post-Stalin conditions; (3) 1960-64: Extensive efforts to ensure North Korean support in the deepening rift with the Chinese Communist Party; (4) 1965-75: Renewal of friendly relations with North Korea (Shapiro 1975: 336).

According to Stephen Blank (1995), traditionally policy makers in Moscow have conceived of Russian interests in Northeast Asia including Korean peninsula in military terms. Russia argument is that the region is constantly threatened by enemies, particularly by the United States, Japan and China argument frequently accompanied by a racist attitude toward Japan and China. Therefore friendly Korea offers an "umbrella" protecting Russian Far Eastern outposts from unwelcome storms in Northeast Asia and providing readily available access to warm, ice-free ports along its northeastern littoral.

During the Cold War period, Korean peninsula emerged as a pawn in Soviet Union-US great power rivalry. After the stalemate of the Korean War, Soviet Union had to face twin challenges on the Korean peninsula- to fend off any further external challenge to the Communist regime in Pyongyang and also to make certain that there was no further encroachment upon its interests on the peninsula by China. Taking advantage of this fact, Pyongyang demonstrated a remarkable unilateral zigzag balancing strategy in its relations with Beijing and Moscow, always attempting to extract maximum pay-offs in economic, technical, and military aid, and taking sides if necessary on particular issues, but never completely casting its lot with one against the other. North Korea's positive security dependence on the Soviet Union was not high during the post-Korean War period despite the inferiority of North Korea's capabilities vis-à-vis the US–South Korean alliance. In 1955, South Korea maintained 650,000 troops, while North Korea had 410,000 (Izumikawa 2007: 51). The USSR also provided substantial economic aid to North Korea. It assisted Pyongyang with the construction and modernisation of industrial plants, and Soviet oil and other products that Moscow could have sold for hard currency were sent to North Korea (Meyer 1992: 758). These economic relations with the USSR were very important to Pyongyang, constituting approximately 60% of North Korea's total foreign trade (Buszynski 1992-93: 489). However, this blossoming relationship between Pyongyang and Moscow was damaged severly when North Korea opened its attack on

the Soviet Union and showed its support for China in 1962 (Taik 1999:72). In the late 1970s and early 1980s, Moscow was willing to provide this assistance without any commensurate gain in influence over Pyongyang's policies because of North Korea's strategic location. Soviet leaders perceived that the regional balance was being tilted against them, first by China's moves to improve relations with Japan and the United States in late 1978 and early 1979 and then by the build up of US and Japanese military forces in East Asia in the early 1980s.

Towards the end of the Cold War, Soviet Union changed its policy preference and began to favour South Korea instead of North. The reasons behind this were not hard to fathom. Moscow's relations with Pyongyang resembled "a marriage of convenience" in which the two sides put up with each other because of certain concrete gains despite a lack of any strong mutual bond. For ideological and strategic reasons, the USSR provided North Korea with economic and military aid, though it was a burden on the Soviet economy. Ideological considerations also were important in the early Gorbachev period when the new leader advocated a policy of improving Soviet relations with other Socialist countries (Meyer 1992: 762). However, the improvement of Sino-Soviet relations and the détente between the US and the USSR diminished North Korea's strategic value to Moscow. Moreover, Russia's military presence in the Asia-Pacific diminished substantially in the past-Soviet period (Ziegler 1994: 534). As a result, Russia maintained a low profile in the region.

United States

While the US does not perceive the Korean peninsula as sustained direct threat, it is fully aware of the potential of the peninsula to upset the regional balance of power. With regard to North Korea, while the US is worried about one of the last surviving bastions of Communism, Washington hopes that the internal contradictions of the regime in Pyongyang will eventually give way. Managing that evolution of the peninsula is one of the greatest challenges for the US in this part of the region. So on the whole, US perceptions of Korea are more or less benign and neutral. South Korea's role is seen by the US as acting as a regional check and balance on ambitious aspirations of adjacent giants and more particularly North Korea.

Ever since 1945, the United States has been an important part of the South Korean political process. Because of America's security commitment to and military and political support for the ROK, the nature of the government and the course of

political development in South Korea became an object of intense interest in the United States (Han 1980: 1082). This was also because of the fact that during its formative years, important positions within the Syngman Rhee government and his party were occupied by individuals who had close ties with the United States. Furthermore, South Korea desperately needed American help for its economic sustenance and development, at least well into the 1960s.

Since 1953, the ROK came to depend almost entirely upon the presence in Korea of US troops and upon its air and naval protection to deter North Korea from launching another armed invasion. During the 20-year period after the signing of the Mutual Security Treaty, the US extended to South Korea nearly 8% of its worldwide foreign economic and military assistance. In fact, the US gave more aid- a total of $11 billion by 1973- to South Korea than to any other country with the exception of South Vietnam (Han 1980: 1075). The US-South Korea relationship was rather severely strained in the 1970s by the failure of both countries to understand the underlying basis for the alliance and the structural changes in the post-Korean War years (Han 1980: 1077).

Although the US still plays a central role in South Korea's security, and will continue to do so for the foreseeable future, certain changes in international and national conditions have made the ROK's foreign policy to break out of its pre-occupation with the US. Yet, South Korea will continue to require American arms, air and naval support, and intelligence and strategic assistance. A substantial portion of Korea's trade continues to be carried out with the United States.

CONCLUSION

The above historical overview points out the crucial geo-strategic position of the Korean peninsula which has created persistent ambivalence about its role in the regional system of international relations. It poses threats and presents opportunities to both ascending and descending great powers. Hence, it has made Korean peninsula a constant object of contention among its more powerful neighbours who have been jockeying for influence, if not for outright control and domination in Korea, for centuries. The next chapter take a detailed look at the inter twining of security and geopolitics in the Korean peninsula.

CHAPTER

3 SECURITY ISSUES ON THE KOREAN PENINSULA

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SECURITY ISSUES IN THE KOREAN PENINSULA

Historically, the integrity and security of Korea has been imperilled or enhanced by the character of relations among the major powers in Northeast Asia, and in turn by their respective relations with Korea (Manning 1997: 30). It was the competition between the imperial China, Japan and Russia in the 19th century that resulted in the Japanese colonial domination of the Korean peninsula. Subsequently, Japan's defeat at the hands of the Allied powers in the Second World War brought the United States and Russia in the peninsula and produced a divided Korea, each half allied with one of the two superpowers.

The security issues on the Korean peninsula flow from this artificial arrangement and ironically, the elimination of this artificial arrangement only will lead to the disruption of balance on the Korean peninsula. In particular, the policies of two key external powers namely US and China will shape the outlook of the peninsula. The North Korean nuclear programme has been a key security issue for the peninsula for much of the period under study. It will do us good if we take a detailed closer look at this issue to understand how geopolitics affects both the Koreas.

NORTH KOREAN NUCLEAR PROGRAMME

According to Andrew Mack (1993a), North Korea had numerous reasons to develop a nuclear deterrent. They are as follows:

- Shifting Military Balance: The post-Cold War era brought a certain degree of uncertainty to the regime in Pyongyang. As the economic condition of the Soviet Union deteriorated, the Russians signalled North Korea that they will no longer supply arms to North Korea, although they will continue to supply spare parts. On the other hand, even China, the North's only remaining ally, also refused to sell Pyongyang sophisticated military equipment. These decisions on the part of Beijing and Moscow implied that North was no longer able to modernise its defence forces. With the military balance tilting inexorably toward the South,

North seriously began pursuing nuclear option in the late 1980s and early 1990s. Nuclear weapons offered Pyongyang a "strategic equaliser" in its military competition with the South; without them the North was doomed to lose the military contest.

- Countervailing Deterrent: One obvious and early incentive for the North to seek to acquire nuclear weapons was the revelation in the mid-1970s that South Korea had a nuclear weapons programme. However, Seoul was dissuaded by Washington from proceeding down this path, and subsequently North Korea focused on perceived nuclear threats to it from the United States. A "Northern bomb" would not only be an equaliser in the inter-Korean military competition, it would also provide a deterrent to the use of US nuclear weapons against North's territory in any war on the peninsula.

  It is sometimes argued that the North could have no strategic interest in building nuclear weapons, since doing so would simply lead the South to follow suit and any military advantage would be negated. This may well be true, but the North's nuclear weapons would still retain their deterrent function-and that is what was important for the North.

- The Changing Alliance: The late 1980s and early 1990s also marked a radical change in the North's alliance relationships. While the US alliance with the South remained firm and in fact became stronger, the North's relationship with Soviet Union/Russia came to the brink of collapse. This was because, Soviet Union/Russia Russia focused on improving its relations with South Korea so as to be beneficial to the Russian economy rather than maintaining support for the bankrupt, beleaguered, and intransigent North. The loss of Russian support for the North and de facto removal of the Russian nuclear umbrella provided a further incentive for Pyongyang to persist with its nuclear programme. In 1990, when it was announced that Moscow was going to recognise South Korea, the Democratic People's Republic of Korea (DPRK) Foreign Ministry released a memorandum stating that if diplomatic relations were established with the South, the USSR-DPRK alliance would effectively cease to exist and the North would have no other choice but to take measures to provide itself nuclear weapons.

- International Status: Another reason was the international status. In North Korea's view, there have been enough cases to demonstrate that states are taken more seriously in the world of geopolitics when they are nuclear-armed. For instance, President Charles De Gaulle of France was always very clear that France's acquisition of nuclear weapons was necessary not only because the French perceived that American nuclear guarantees were unreliable and that France thus needed its own independent force, but also because nuclear weapons gave France an international status which no other thing could have. The North Koreans could have found such logic similarly compelling.
- The Bargaining Chip: The DPRK has consistently used international concern about its nuclear programme as a bargaining lever in its relations with other states. It was US and South Korean determination to persuade Pyongyang to sign the long overdue Nuclear Safeguards Agreement that led the South, with US agreement, to suspend Exercise Team Spirit for 1992. Cancellation of this "nuclear war exercise" had been a long-time DPRK demand. Pyongyang responded to the announcement by noting that the decision was "entirely a brilliant fruition of our peace loving policy."
- The *Juche* Interest: North Korean officials consistently and emphatically stress that their official *Juche* ideology of self-reliance requires them to have a strong and self-reliant defence policy, and there is little doubt that commitment to the *Juche* idea explains much of the North's foreign and domestic policy. Given the crisis in the DPRK economy, nuclear weapons offer the only hope of achieving a defence policy that is both effective and self-reliant. *Juche* also dictates that the North seek energy self-sufficiency where possible. This explains Pyongyang's admitted long-term interest in fast breeder reactors.
- Shield for Terrorism: The possession of nuclear weapons would embolden the North to engage once again in a range of provocative military/terrorist activities against the South, and feel confident that Seoul would be constrained from retaliating militarily for fear of the consequences (Mack 1993a: 341-344).

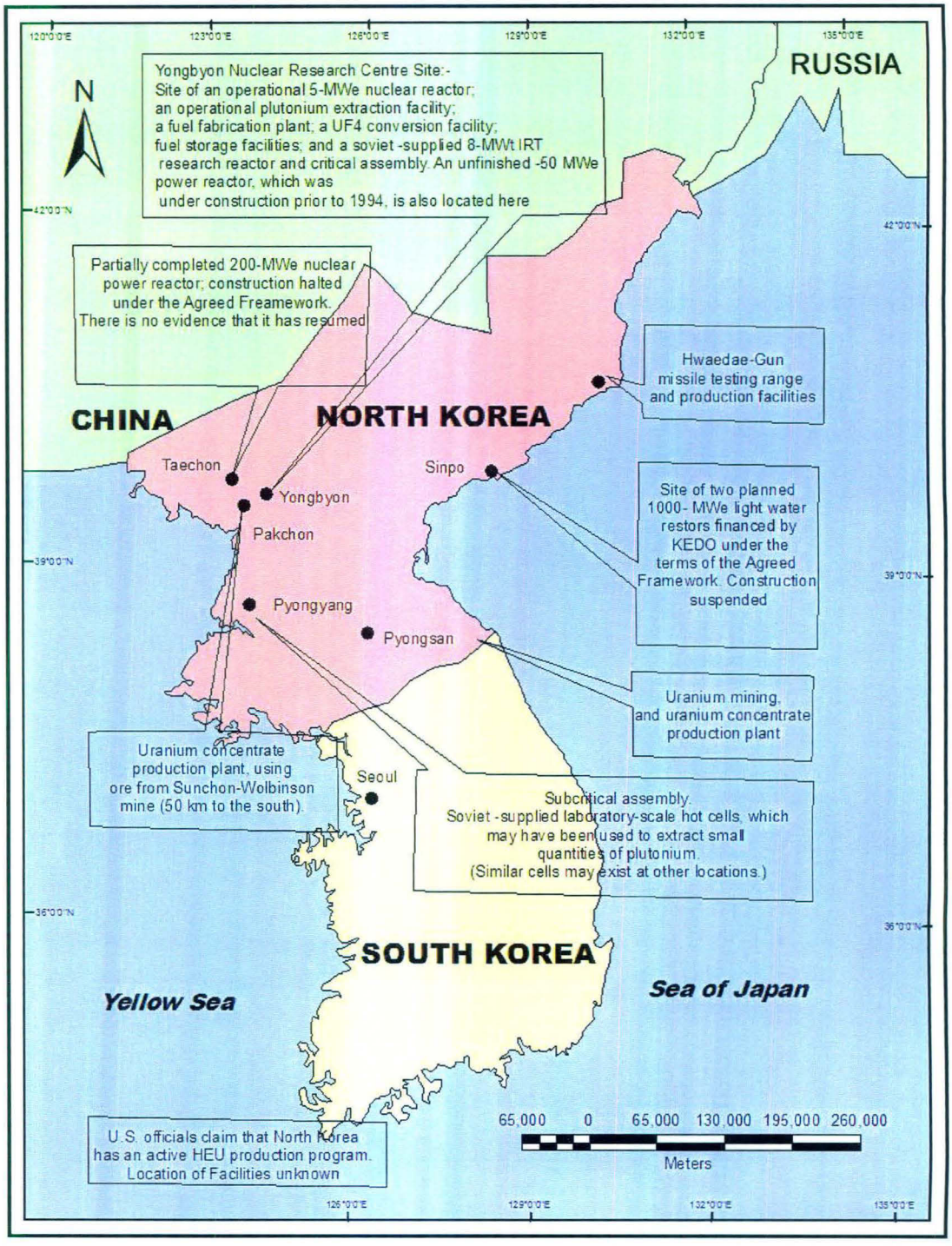
Quiet apart from the above-mentioned reasons, the justification that North Korea gave for the development of its nuclear programme was the energy-deficit that the country faced in view of its poor natural resource endowments. The not-so-large domestic coal resources and the expensive imported petroleum items forced North Korea to develop nuclear power with an estimated four-million tons of exploitable high-quality uranium ore available domestically. The extent of these was discovered in the early 1960s when the North Koreans, assisted by the Chinese, made extensive surveys throughout the country. Information on the state and quality of their mines is lacking, but it is estimated that the ore contains approximately 0.8% extractable uranium (Federation of American Scientists 2006).

Civilian Nuclear Programme

The North Korean interest in nuclear technology can be traced back to 1950s when US General Douglas MacArthur threatened to use nuclear weapons against the DPRK during the Korean War. An inter-governmental agreement on co-operation in the field of atomic energy, signed in 1959, laid the foundation for joint nuclear activities between the Soviet Union and North Korea. On the basis of this of agreement, the two countries signed a number of so-called series 9559 contracts, which concerned such areas of bilateral co-operation as the conduct of geological studies, the construction of a nuclear research centre, and the training of Korean specialists (Kaurov 2000:15-16). In 1956, North Korea signed a nuclear research co-operation agreement with Soviet Union. Pyongyang began its nuclear programme in the 1960s. In 1964, the North Korean leader, Kim Il Sung ordered the construction of an atomic energy research complex in Yongbyon, 96 km. north off the capital Pyongyang. It also trained specialists from students who had studied in the Soviet Union. Subsequently, the Soviet Union constructed a nuclear research centre in Yongbyon. In 1965 a Soviet IRT-2M research reactor was assembled for this center. After having completed this work, Soviet specialists departed but the co-operation continued in the form of authoritative supervision over the exploitation of the betatron and cobalt installations, as well as in the form of Soviet provision of nuclear fuel supplies for the reactor (Kaurov 2000: 17). During this whole period of co-operation, more than 300 North Korean nuclear specialists of various qualifications were trained at various

Map 3.1

NORTH KOREAN NUCLEAR ASSETS



Base Map Source

Singh (2005)

Soviet institutes of higher education. These facilities included the Moscow Engineering Physics Institute, the Bauman Higher Technical School, the Moscow Energy Institute and other higher educational establishments. Some North Korean nuclear specialists also worked at the nuclear scientific research complexes in the cities of Dubna and Obninsk in Russia (Kaurov 2000: 17). Other North Korean scientists received their education in Japan, East Germany, West Germany, and some underwent practical training in Chinese nuclear centres as well (Denisov 2000: 21). From 1965 through 1973 fuel (fuel elements) enriched to 10 percent was supplied to the DPRK for this reactor. It is important to note here that from the beginning, the training of North Korean specialists in the Soviet Union was carried out solely in the interests of the peaceful use of atomic energy. Soviet-North Korea agreements signed in this connection specifically emphasised the peaceful nature of bilateral co-operation in the nuclear sphere (Denisov 2000: 21).

In the 1970s North Korea focused study on the nuclear fuel cycle including refining, conversion and fabrication. In 1974, Korean specialists independently modernised Soviet IRT-2M research reactor in the same way that other reactors operating in the USSR and other countries had been modernised, bringing its capacity up to 8 megawatts and switching to fuel enriched to 80 percent. Subsequently, the degree of fuel enrichment was reduced. In the same period the DPRK began to build a 5 MWe research reactor, what is called the "second reactor". Many also say that this reactor was based on the model of a 1950s-era British gas-graphite reactor known as the Calder Hall. It became operational around a decade later in 1987.

In 1977, the DPRK concluded a "Type 66" safeguards agreement with the International Atomic Energy Agency (IAEA), allowing the latter to inspect a research reactor which was built with the assistance of the USSR (Federation of American Scientists 2006).

Nuclear Weapons Programme

The decade of 1980s marked the beginning of the North Korean nuclear weapons programme and intentions to develop a nuclear deterrent. During this period, North Korea accelerated its efforts to produce plutonium fuel for nuclear weapons from the above-mentioned facilities (Friedman 2003). Additionally, it began construction of a 200 MWe

nuclear reactor and nuclear reprocessing facilities in Taechon and Yongbyon, respectively, and conducted high-explosive detonation tests (Federation of American Scientists 2006). In 1985, US officials announced for the first time that they had intelligence data proving that a secret nuclear reactor was being built in Yongbyon.

The declassified US intelligence documents reveal that even though concern was expressed about the North Korean programme, the Central Intelligence Agency (CIA) did not identify it as a move towards weaponisation. However, the CIA did note the energy-production rationale for the programme and the lack of evidence that the North was actually planning to join the nuclear club (Wampler 2003). The declassified intelligence document from the US Directorate of Intelligence about a 10 year projection plan had noted the difficulty that Pyongyang might have in pursuing a nuclear weapons programme, as noted below:

> "...North Korea's penchant for military secrecy makes it unlikely that it would locate a primarily military reactor at a known research center...In considering whether to embark on a venture as costly, hazardous, and politically sensitive as a nuclear weapons programme, Pyongyang would face a complex calculation of benefits versus costs as well as considerable uncertainty regarding the effect of such a programme on its ultimate goal of reunifying the peninsula on its own terms (Directorate of Intelligence 1983)."

Nonetheless, the concerns raised by the intelligence apparatus forced Washington to secure guarantees from Moscow and Beijing that they would not supply key materials required in nuclear programme to North Korea (Department of State 1985). In the mid-1980s however, the rapid expansion of the North Korean programme forced a renewed strategic assessment whereby tremendous international pressure was created by the international community led by the United States to force Pyongyang sign the Nuclear Non-Proliferation Treaty (NPT) as a Non-Nuclear Weapon(s) State (NNWS). However, the DPRK refused to sign a safeguards agreement with the IAEA, an obligation it had as a party to the NPT. Within eighteen months of signing the NPT, states have to complete a safeguards agreement with the IAEA. The North failed to meet this deadline, partly because the IAEA sent Pyongyang the wrong agreement to sign. However, the correct document was sent to Pyongyang in June 1987, along with an 18-month extension. The new deadline, December 1988, passed without an agreement. North's persistent failure to

fulfill its treaty obligations increased Western suspicions about the nature of the nuclear programme at Yongbyon. Pyongyang, however, blamed the United States for the delays (Mack 1991: 90).

In 1987, North completed the work on the second reactor thereby coming to possess the capacity of 5 electrical MWs. This increased capacity allowed an annual production of 7 kgs. of plutonium- which was enough to make two nuclear weapons (Friedman 2003). Confronted with increasingly insistent demands that it meet its international legal obligations, the North argued that it could not sign a safeguards agreement because the American 'nuclear threat' against it had been increased. It demanded that the safeguards agreement be amended to contain clauses which would effectively require the US to give an undertaking not to use nuclear weapons against it, and that US nuclear weapons be withdrawn from the South. Both demands were rejected by Washington and Seoul (Mack 1991: 90-91).

By July 1989, another component necessary for a nuclear weapons programme, a testing facility, was allegedly detected. An article in the *Korea Times* noted that North Korea was believed to have come closer to producing nuclear weapons as latest intelligence reports revealed the construction of a high-explosive testing site near what is known to be a nuclear reprocessing plant (Mack 1991: 88). This plant was believed to be the second largest in the world (Becker 2005: 182).

Moreover, in the same year, Pyongyang shut down its working reactor for two months- probably to remove the nuclear fuel rods, from which plutonium is reprocessed. This development was confirmed by *The Washington Post* in July 1990 which reported that new satellite photographs from the CIA showed the presence in Yongbyon of a structure which could possibly used to separate plutonium from nuclear fuel (Federation of American Scientists 2006). The US intelligence estimates suggested that North extracted around 12-14 kgs. of plutonium from these rods. In its February 1990 statement to the IAEA, the DPRK also warned that it might invoke Article 10 of the NPT and renounce the NPT unless its demands for amendments were met (Mack 1991:91).

Developments in the Early 1990s

Other estimates by South Korea and Japan suggested that during 1989 shutdown and additional reactor slowdowns in 1990 and 1991, North may have in total extracted 24 kgs. of plutonium. Plus, Russia suspects that in the post-Soviet Union period, North may have smuggled additional plutonium out of the country. A 1993 report in the German magazine *Stern* cited a Russian counter-intelligence report claiming that North Korea had bought 56 kgs. of Russian plutonium on the black market (Niksch 2002). These suspicions as well as North's relentless pursuit of the ballistic missile programme prompted the international community to control the flow of dual-use technology to the country. And in mid-1992, the director of the US intelligence agency, CIA publicly admitted that Pyongyang was close to developing nuclear weapons. There were also reports from the North Korean defectors and later, from the Russian intelligence agency, KGB, confirming that the North was seeking to build nuclear weapons.

For reasons which are still not clear, but which almost certainly related to the growing rift between Moscow and Pyongyang at that time, the North's position on the nuclear issue changed in 1991. On May 4, 1991 North Korea gave the IAEA a list of its nuclear facilities, including: one research reactor in operation and two under construction; a sub-critical assembly; a fuel-fabrication plant; and two uranium mines and mills. The list excluded a small research reactor which was already under IAEA safeguards (Barnaby 1993: 94).

Also in late 1991, North and South Korea signed the "Agreement on Reconciliation, Non-aggression, Exchanges and Co-operation" and the "Joint Declaration on the De-nuclearisation of the Korean peninsula". The Joint Declaration called for a bilateral nuclear inspection regime to verify the de-nuclearisation of the peninsula. The declaration, which came into force on February 19, 1992, stated that the two sides "shall not test, manufacture, produce, receive, possess, store, deploy or use nuclear weapons," and that they "shall not possess nuclear reprocessing and uranium enrichment facilities." A procedure for inter-Korean inspection was to be organised and a North-South Joint Nuclear Control Commission (JNCC) was mandated with verification of the de-nuclearisation of the peninsula (Federation of American Scientists 2006).

On January 7, 1992 the North finally signed a safeguards agreement with the IAEA. South Korea simultaneously announced that the huge annual US-Republic of Korea (ROK) 'Team Spirit' exercise, which the North had long denounced as a highly provocative 'nuclear war exercise' would be cancelled in 1992. During 1992, the nuclear complex at Yongbyon was subjected to six IAEA inspections and discussions about a separate North-South inspection regime commenced in the JNCC (Mack 1993b: 3-4).

Nuclear Crisis of 1994

According to Liu Lin (2006), the North Korean nuclear crisis was not only closely related to the "Cold War legacy", but was also affected by the domestic politics of both the US and North Korea. It was not just a nuclear issue, but involved various interests of all the major players in Northeast Asia. As the suspicions over the North Korean nuclear intentions began to increase, former US President Jimmy Carter decided to go to Pyongyang in July 1994 for a face-to-face meeting with North Korean leader Kim Il Sung. This visit prevented the crisis from turning into a major conflict at the last minute. During the meeting, Kim Il Sung agreed to freeze the DPRK nuclear programme temporarily and start negotiations with the US toward a final solution of the problem (Sigal 1998: 5). South (too wanted to hold dialogue with North) concerned that military action might be taken against Pyongyang by the US for raising the stakes. It hoped to eventually prevail in the standoff by holding out offers to North Korea of economic and technical assistance and investments as inducements to give up the nuclear option (Gurtov 1996: 14). However, the sudden death of Kim Il Sung shortly after the initiation of the Geneva talks brought much uncertainty to the negotiations because it was not clear whether his son, Kim Jong Il, and the rest of the DPRK leadership would hold on to the agreement with Carter. It appeared that they did and on October 21, 1994, the Agreed Framework was signed, thereby providing a basis for the resolution of the nuclear issue on the Korean peninsula.

Agreed Framework of 1994

Under the Agreed Framework, the DPRK agreed to freeze and eventually dismantle its nuclear programme. Pyongyang also promised to return to the NPT and accept full-scale

inspections of its nuclear programme. In return, the United States agreed to provide two 1000 MWe Light Water Reactors (LWR) to North Korea by a target date in 2003. Additionally, before the LWRs came into operation, the United States would supply 500,000 tons of heavy fuel annually to make up for the energy losses in North Korea. Concurrently, the United States and North Korea would gradually improve their bilateral relationship, initially through the exchange of liaison offices and later through negotiations over other outstanding issues in US-DPRK relations, including missile exports and human rights. The agreement also required the North and South Koreas to resume direct dialogue to discuss outstanding issues on the Korean peninsula.

All the major actors publicly welcomed the accord. Both IAEA and the UN Security Council (UNSC) welcomed the agreement while China chose to highlight the agreement as vindication of its insistence that the nuclear dispute could only be resolved through bilateral US-DPRK negotiations (Kim 1995: 22).

Much of the optimism at that time of signing the Agreed Framework stemmed form what it was supposed to achieve. When fully and faithfully implemented, by 2003 (the target date of the Framework), or perhaps later, North Korea was supposed to have two operational LWR power stations with a capacity of 2,000 MWe, and the IAEA was supposed to be in possession of the knowledge of how much plutonium North Korea had produced before the agreement was signed. The DPRK would not be pursuing a nuclear weapons programme and North and South Korea will be engaged in wide-ranging dialogue (Wilborn 1995: 1-2).

The benefits of the Agreed Framework to the US and North Korea were tangible and immediate. However, since the Agreed Framework was "a non-binding political agreement" rather than an agreement in the formal, legal sense of the term, both sides could easily disobey their obligations. Officials at the US State Department noted that this non-legally binding form was preferred in order to provide "the flexibility to respond to North Korea's policies and actions in implementing the Agreed Framework- flexibility that binding international agreements, such as a treaty, would not have provided." In other words, if North Korea violated the Agreed Framework, the United States could rapidly halt oil shipments and re-impose a trade embargo. Similarly, if North Korea

suspected non-compliance on part of the Americans, it could reprocess the fuel rods, resume construction on the two larger graphite reactors, and refuel the 5 MWe reactor.

According to the Framework, the first deadline for action was November 20, 1994, when Pyongyang was to freeze the operation of its 5 MWs reactor and reprocessing facility, and suspend work on two reactors under construction. In fact, the DPRK froze all operations and construction on November 2, some three weeks sooner than necessary (Wilborn 1995: 2). The first oil shipment was delivered on January 18, 1995. In November and December 1994, Washington started to provide the machinery DPRK with the LWR power stations. The arrangements included setting up Korean Peninsula Energy Development Organisation (KEDO) as well. Both sides also reduced barriers to trade and investment, as required by the Agreed Framework, by January 20, 1995. North Korea ended its embargo on American goods, phone calls, and financial transactions. However, soon some of the inherent flaws in the agreement gave way to North to pursue its nuclear ambitions.

Problems with the Agreed Framework of 1994

While signing the 1994 agreement, North Korea viewed United States purely from the negotiating view. The North Korean intention was to maximise its bargaining position in future overtures to Tokyo and Seoul. North Korea intended to utilise its relations with the United States as a diplomatic leverage and to improve its position vis-à-vis Japan and South Korea (Masao 1995: 23). Pyongyang also wanted to make Tokyo and Seoul compete for an advantageous position. Moreover, the agreement gave the impression that US influence had expanded to control the North Korean behaviour. The developments in the initial years after the agreement indeed gave that impression, but it soon became clear that North did not cease from pursuing its nuclear ambitions. Therefore the optimism that had come to characterise this agreement soon evaporated. According to Oh and Hassig (2004), the North Koreans' stated willingness to freeze and eventually dismantle a programme that the United States suspected was Pyongyang's ultimate guarantee of national security should have made the American negotiators suspicious. Nevertheless, the short-term political and security benefits of the agreement were deemed sufficient justification for overlooking this paradox (Oh and Hassig 2004: 276).

In addition, the framework had several other shortcomings. For example, according to the framework, the dismantlement of the DPRK's graphite-moderated reactors and the related facilities would not begin until the completion of the second LWR. This meant that North Korea could, under the provisions of the agreement, possess a potential nuclear capability for an extended period of time. Moreover, the Agreed Framework failed to address other security issues of concern, such as the North's ballistic missile programme, its chemical weapons programme or a possible biological weapons programme. According to Robert A. Manning (1997), it was not only the substance of the Agreed Framework that proved most troublesome, "but the apparent lack of a larger strategy for reducing tensions on the Korean peninsula and fostering a genuine inter-Korean reconciliation process" (Manning 1997: 599).

These problems made the Agreed Framework quite fragile and difficult to implement. Although the agreement was meant to build mutual trust between Pyongyang and Washington, both sides, soon began to breach the provisions of the agreement. In the United States, the agreement immediately provoked strong criticism from the Republican opposition. They accused the Clinton Administration of yielding to North Korea's blackmail. Opponents also worried that the fuel used to power the two large LWRs could be reprocessed into nuclear weapon material by North Korea. Therefore, the US Congress was reluctant to provide funding for the construction of the LWRs. Although the KEDO was led by the United States, it relied almost entirely on financial support from the ROK and Japan. In addition, the KEDO projects were subject to annual financing as opposed to long-term funding. Due to this and various other reasons, such as the disputes over the nomenclature of the reactor type and Japan's suspension of funding for the LWR project following North Korea's 1998 missile launch, the project could not move forward.

The construction of the LWRs was only 25 percent finished by 2003, the target date for completion, which was far behind schedule. Nor had the US significantly eased economic restrictions on the DPRK, as called for in the Agreed Framework. Mutual steps toward establishing diplomatic relations between the US and the DPRK were likewise delayed when the North Koreans balked at opening liaison offices in Washington and Pyongyang out of the fear of being "spied" on by the US Meanwhile, US intelligence detected that North Korea was pursuing a clandestine Highly Enriched Uranium (HEU)

programme in the late 1990s as an alternate source of nuclear weapons development- due to the fact that IAEA inspectors were monitoring the plutonium-based facility at Yongbyon. All this essentially nullified the agreement before the eruption of the second North Korea nuclear crisis.

From the benefit of hindsight, the Agreed Framework illustrates one important lesson learned by the North Koreans: the threat of nuclear weapons can bring the United States to the bargaining table and entice substantial economic aid for failing North Korean economy. Indeed according to Oh and Hassig (2004), it can be argued that in the Agreed Framework the United States was not rewarding the North Koreans for freezing their nuclear programme, but was instead rewarding them for having pursued a programme that the United States viewed as a threat (Oh and Hassig 2004: 277). And this was not an isolated behavior from the North. Earlier in 1991, when Moscow informed Pyongyang that the former was going to recognise Seoul, Pyongyang reacted by threatening to hold a nuclear test in order to extract some financial aid from Moscow. However that gambit failed and Moscow proceeded to recognise Seoul (Becker 2005: 182). In the words of Reiss (2006-07), it was all 'carrot' and no 'stick' (Reiss 2006-07: 105).

There is an alternative argument also which reiterates the logic of the Agreed Framework. According to O'Hanlon and Mochizuki (2003) even with the discovery of the secret HEU programme in 2002, DPRK's maximum nuclear arsenal was believed to have been two weapons as of early 2003. That number could have been much higher (up to 50) in the absence of the 1994 agreement. According to them, given the security benefit, the costs to outside powers of providing fuel aid and funds for new reactor construction under the agreed framework to North Korea have been quite modest-a total of $ 1.4 billion through 2001 ($ 600 million from South Korea, $ 300 million apiece from the United States and Japan, almost $100 million from Europe, over $ 10 million from Australia, and more modest sums from a host of other countries). Hence in that sense the Agreed Framework prevented the real possibility of North Korea as a formidable nuclear challenge (O'Hanlon and Mochizuki 2003: 31). Some analysts like Gurtov (2002) even suggested that despite North's admission of HEU programme, the Agreed Framework

should have been reinvigorated in order to promote common security on the Korean peninsula.

North Korea's Relentless Pursuit of Nuclear Weapons

After coming to power in January 2001, the George W. Bush administration made a review of US North Korea policy. After completing this review in June 2001, the Bush administration stated that it would engage Pyongyang in talks on a more comprehensive list of issues. After the September 11, 2001 attacks, the US adopted a new security strategy which stressed threats from a combination of terrorism and weapons of mass destruction (WMD). With these new priorities, and with new information about nuclear co-operation between Pakistan and North Korea, the Bush administration's rhetoric toward North Korea intensified.

In January 2002, President Bush in his State of the Union Address labelled North Korea part of an 'Axis of Evil' along with Iran and Iraq. Other documents and policy statements, including the *2002 Nuclear Posture Review* and the September 2002 *National Security Strategy of the United States*, all defined North Korea as a threat to America's national security. In October 2002 the US asserted that North Korea had violated the 1994 Agreed Framework and accused it of pursuing a new nuclear weapons programme based on the enrichment of uranium to weapon-grade standard. These statements, combined with the overthrow of Iraq's Saddam Hussein regime in April 2003, further convinced the North Koreans that they needed a deterrent against Washington as well as an American assurance of a security guarantee (Cha and Kang 2003: 145).

The nuclear crisis erupted on October 3, 2002, when US Assistant Secretary of State for East Asian and Pacific affairs James Kelly met with DPRK officials in Pyongyang. During the meeting, Kelly presented evidence that the DPRK was operating a covert HEU-based nuclear weapons programme in violation of requirements under the 1994 Agreed Framework and other undertakings. Rather than dismissing Kelly's allegations, the North Koreans acknowledged the programme in their next meeting with the Assistant Secretary the following morning. According to Kim and Kim (2007), the acknowledgement of the HEU was the result of North Korea's calculation that the survival of the regime would not be threatened when the Bush administration was

militarily involved in Iraq (Kim and Kim 2007: 57). Following that meeting, however, North Korea adopted a "neither confirm nor deny" policy about whether such a HEU programme existed. North Korea portrayed its actions as a response to the Bush administration's hostility and sought to hold the United States accountable for the nullification of the Agreed Framework.

Two weeks later, on October 16, 2002, after intense internal discussion, the Bush administration stated that the DPRK was conducting a secret nuclear programme in violation of the Agreed Framework. On November 13, 2002, President Bush said that future shipments of heavy fuel oil would be halted.

North Korea responded by expelling the IAEA officials from the country in December 2002 (Oxford Research Group 2005). In January 2003 North Korea announced its withdrawal from the NPT, a move that many considered to be of questionable legality. Soon thereafter, the DPRK announced that it had begun re-processing the 8000 spent fuel rods, a key step toward extracting weapons-grade plutonium. According to estimates by nuclear experts and reportedly by US intelligence agencies, if North Korea re-processed the fuel rods, as it claimed, it could produce four to six atomic bombs. Production of weapons-grade plutonium could have also added substance to North Korea's threat to export nuclear materials.

Six Party Talks and the 2006 North Korean Nuclear Test

In order to resolve the North Korea nuclear crisis peacefully, the Chinese government went through a range of diplomatic endeavours to bring about talks between Washington and Pyongyang. In April 2003 a three party talks were held in Beijing between North Korea, China and the US The three way talks turned out well. Indeed, the Chinese attempts to "minimal multilateralism" provided Washington and Pyongyang, the two opposing actors, with a face-saving venue that later was to develop into to a larger multilateral diplomatic process for resolving the nuclear problem.

What then followed was a series of shuttle diplomatic efforts. China wanted to continue the trilateral talk process, whereas Washington insisted that South Korea and Japan should be included in future talks. Upon Moscow's insistence, Russia was also added to the list of future participants in the potential multilateral talks. The US also

made a concession vis-à-vis the North Koreans by agreeing to direct bilateral talks within in the context of a multilateral setting. This finally led to Pyongyang agreement to take part in the Six Party talks.

In August 2004, the first Six Party Talks were convened. No concrete agreement was reached, but in the months that followed, additional talks were held on an irregular basis. In February 2005, the DPRK stated that it possessed nuclear weapons. Earlier, it had been discovered that a prominent Pakistan nuclear scientist, A. Q. Khan, had secretly transferred nuclear technology to North Korea as well as to Iran and Libya. In this regard, it is worth noting that North Korea had kept the framework of the Six Party Talks intact while advancing its nuclear programme. So when it declared its possession of nuclear weapons, it did not indicate that it wished to see an end to Six Party Talks (Kurata 2007: 23).

It was in this context that, that the fourth of the Six Party Talks was held after which a new agreement was achieved on September 19, 2005. The DPRK committed itself to ending moves to produce nuclear weapons and to give up its "existing nuclear weapons," to rejoin the NPT at an early date, and to accept IAEA safeguards, including the re-admission of international inspectors to its nuclear facilities. The US stated specifically that it had no intention of attacking or invading the DPRK with either nuclear or conventional weapons and that it had no nuclear weapons in South Korea. The South also affirmed the absence of nuclear weapons on its territory, and made a new commitment to the 1992 joint declaration on the de-nuclearisation of the Korean peninsula. All five parties to the talks expressed their respect for the right of the North to maintain civilian nuclear energy capabilities and agreed to discuss later the DPRK demand that it receive a LWR for electric power generation. Further, all six parties agreed to take co-ordinated steps to implement the consensus reached, with sequential steps being taken, modifying the earlier US position of demanding complete verification of the termination of all nuclear activities by the North before any responses were brought into effect. The US and the DPRK also agreed to respect each other's sovereignty and co-exist peacefully while taking steps to normalise their relationship. Meanwhile, measures were to be taken to achieve a permanent peace settlement and formally end the Korean War (Scalapino 2007: 6).

With the September agreement in hand it appeared as if the North Korean nuclear issue was on the way of resolution. The fifth round of the Six Party Talks, held in November 2005, saw no progress in moving from general principles to specific details of implementation, and by the 2006 advances were stalemated. Complicating the situation was the US action against the North for the alleged counterfeiting of US currency and other illegal activities. This action effectively froze the DPRK out of the international banking system, and subsequently, the US prepared a list of banks that could be put under pressure to cut all connections with the DPRK. North Korea too responded in a belligerent manner. It made its intentions clear that it did not want to end the nuclear programme until it had been provided with a nuclear reactor for energy. On July 5, 2006 North test fired seven missiles as a show of strength but this resulted in further isolation of the Pyongyang regime from the world. Three months after the missile launch, North took another major step by conducting an underground nuclear test on October 9 (Scalapino 2007: 7).

Five days after the test, the United Nations Security Council (UNSC) adopted Resolution 1718 condemning the nuclear test. The Resolution also underlined that the nuclear test had challenged not only the NPT but also the nuclear non-proliferation regime. The Resolution asked North Korea to exercise restraint on any further nuclear test and launch of ballistic missiles, as well as to abandon these weapons in a complete, verifiable and irreversible way and to return to the NPT and the IAEA's Safeguards regime. The Resolution also urged the UN member-states to stop doing business with North Korea in WMD-related materials, major weapon systems, and luxury items. Under Resolution 1718 the UN members were also expected to freeze North Korean funds, financial assets and economic resources (UNSC Res. 1718 2006). The Security Council also called for joint efforts to mitigate the tension in the region as well as early resumption of the Six Party talks on North Korea (Nayan 2006: 857). The US and Japan led the UN-backed drive against North Korea while South Korea suspended food aid to the North since the nuclear test, but soon resumed them as part of efforts to revive cross-border reconciliation. The South Korean approach was designed to force the DPRK to return to the negotiating table (Narayanan 2006: 874).

Faced with this stark reality, Pyongyang announced on November 1, 2006 its willingness to rejoin the stalled Six Party talks on de-nuclearisation of the Korean peninsula. Just prior to North Korea's announcement that it was ready to return to the Six Party process, South Korea announced its offer to send electricity to North Korea in return for abolition of its nuclear programmes. The offer was consistent with the US and Japanese position in two ways:

a. Any new offer of energy aid should be non-nuclear.

b. North Korea must implement its side of the bargain first.

Implications of the Nuclear Test

The North Korean nuclear test constituted another severe blow to the already fragile global non-proliferation regime. It also provided a catalyst for Japan and South Korea to build up their military capability. The nuclear test also put China and South Korea in a dilemma. Both countries had to perform a balancing act between supporting the UN sanctions and ensuring that the North will not be squeezed into a sudden collapse.

The North Korea nuclear test also had a number of geo-political and strategic consequences for individual states and state-to-state relations in Northeast Asia and beyond.

a. Setback to the global non-proliferation regime

The nuclear test constituted a severe blow to the global non-proliferation regime and can be interpreted as a "green light" by states nourishing similar nuclear ambitions. Moreover, and possibly even more concerning, was North Korea's proclivity to indiscriminant proliferation of nuclear technology and fissile material.

b. Catalyst for an arms race in Northeast Asia

The test had the potential to spur an arms race in Northeast Asia, a scenario that China, and possibly also the US, feared the most. The recent developments in Japan about exploring the nuclear path and adoption of space law allowing military activities have added new fuel to the debate on Japan's possible course in response to the North Korean actions. The nuclear test was also expected to result in a strengthened US-Japanese security alliance and an acceleration of the development of a theatre missile defence (TMD). Also it was imperative for South Korea to solidify

its alliance with the US, and thereby enhance its conventional military capability, to meet the security threats from the North. Concerns were also raised about the possibility of Japan, South Korea, Taiwan- the three principal drivers of nuclear proliferation pursuing nuclear weapons programme (Hughes 2007:76).

c. Further co-ordination among the states in the region

The test also furthered co-operation among China, the US, Japan and South Korea and brought about a consensus on how to deal with Pyongyang.

North Korean Involvement in Illegal Transfer of Nuclear and Other Sensitive Technology

One of the recent reasons (apart from the obvious challenge to the global non-proliferation regime) why the international community and especially the United States is so worried with the North Korean nuclear programme is that Pyongyang could sell the products of its nuclear programme to other states as well as non-state actors including the terrorist groups. Suspicions that North Korea could sell some of its components to other states has been reinforced by the revelations of the A.Q. Khan's illegal proliferation network and reports of North Korean involvement in the Syrian nuclear programme. According to some non-proliferation experts, North has already developed extensive non-nuclear covert smuggling capabilities including drug trafficking and counterfeit currencies. The DPRK regime has justified these activities on ideological terms. But analysts suspect rather than the ideology it is the financial considerations which may have prompted North to indulge in these activities. The DPRK possesses both the means and motivation to export, and criminal smuggling may also provide windows of opportunity for proliferation outside of state control (Chestnut 2007). In September 2007, the Israeli Air Force fighter jets attacked a Syrian nuclear facility which contained materials of strategic value supplied by North Korea, thereby shedding light on the largely concealed issue of nuclear transfer between the two countries. This has further raised concerns over the North Korean involvement in such activities (Shichor 2007).

MILITARY BALANCE ON THE KOREAN PENINSULA

North and South Korea remain technically at war even today. In the absence of substantive Confidence Building Measures (CBMs) capable of reducing the sources of tension, both the North and the South have sought to satisfy their need for security through arms. When we analyse the military balance between North and South Korea in this light, we encounter more uncertainties than clear differences that lend themselves to easy comparison. Looked at solely in terms of sheer military power, that is, in the number of troops and weapons, North Korea still retains a fairly substantial advantage over the South. North Korean troops are estimated to number about 840,000 men for all services combined, including approximately 100,000 airborne troops trained for guerilla warfare behind South Korean lines. North Korea's ground forces are supported by 3,500 tanks, the majority of them made up of T-54/55/62 types. Roughly 6,300 pieces of medium and heavy field artillery, back up this ground force. In the air fields over 700 combat aircraft, mostly MiG19s and MiG21s but also including the first-line MiG23. At sea, its naval combatants number 600 vessels of various types and displaceme and include at least 20 conventional submarines and a large number of fast missile boats armed with Soviet Styx/SSM missiles. South Korea, by comparison, lags behind North Korea in every one of the above categories. Its armed forces number 600,000 troops in total. Its army is equipped with 1,100 tanks and 2,700 pieces of field artillery; its air force has a total of 400 aircraft, mostly F-5s and F-4s, but has started receiving this month the first batch of 36 F-16's ordered in 1981. South Korea's navy suffers the greatest disadvantage with only 124 surface vessels - none really capable of effectively countering North Korea's superiority in missile boats and submarines. This quantitative imbalance is partially offset by the qualitative superiority of South Korean weapons, and in part by the presence of an American infantry division which is held in strategic reserve just behind the De-Militarised Zone (DMZ) (Kyongsoo 1988: 38).

Map 3.2

NORTH KOREAN MILITARY ASSETS

Base Map Source

Singh (2005)

Table 3.1

A COMPARISON OF ARMED FORCES OF THE TWO KOREAS

	North Korea	South Korea
Population	22.6 million	48.5 million
Total Armed Forces	1,100,000 Personnel	686,000 Personnel
Reserves	4,700,000 Personnel	4,500,000 Personnel
Army	950,000 Personnel	560,000 Personnel
Corps	20 (1x Armoured, 4 x Mechanised, 12 x Infantry, 2 x Artillery, 1 x Capital Defence)	11
Divisions	27 (active) & 40 (reserves)	22 (active) & 23 (reserve)
Tank	3,500 (T-34, T-54/55, T-62, PT-76, PT-85, Type-59)	2,200 (Type-88, M-47, M-48A5, T-80U)
APC	2,500 (BTR-40/50/60, Type-531, VTT-323)	2,500 (M-113, M-577, KIFV, Fiat 6614/km.-900/901)
Artillery Guns	7.900 (Towed-3500, Self-Propelled-4400)	4,600 (Towed-3500, Self-Propelled-1100)
Air Force	86,000 Personnel	63,000 Personnel
Combat Aircraft	620 (MiG-17, MiG-19, MiG-23, MiG-29, SU-7, SU-35)	560 (F-1, F-4, F-5, F-16, O1A, O2A)
Attack Helicopters	24	120
Navy	46,000 Personnel	63,000 Personnel
Submarines	92 (Romeo, Whisky, Sang-O-Class, Yugo-class midgets)	18 (KSS-1 Dolgorae, SX-756 Dolphin
Destroyers		6 (KDX-1 Okpo, KDX-11, Cungbuk/Kwang Ju)
Frigates	3 (Chinese Nanjin-class, Soho)	9 (Ulsan-class)
GDP (2004)	US $ 29.61 Billion	US $ 858 Billion
Defence Budget (2004)	US $ 1.8 Billion (Budget & Expenditure in 2003 were US $ 1.6 Billion and 5.5 Billion respectively)	US $ 16.4 Billion
Conscription Period	Army: 5-8 years, Navy: 5-10 years, Air Force: 3-4 years	Army: 26 months, Navy and Air Force: 30 months

Source: Singh (2005)

Both armies are well trained. Each side routinely conducts small to medium scale training exercises as well as full scale war games on an annual basis. Both armies have a war fighting experience: South Korean troops participated in the Vietnam war; while North Korean troops supported various "wars of liberation" in the Third World, particularly in Africa. Ideological indoctrination, infusion of morale and discipline, the quality of the officer corps is generally considered to be of roughly the same standard (Kyongsoo 1988:39). Table 3.1 brings out in detail the comparison between the North and South Korea. The comparison reveals that while North Korea enjoys quantitative advantage over South Korea, the latter is way ahead is way ahead qualitatively.

Korean People's Armed Forces

At this point, a detailed look at the Korean People's Army (KPA) is required. The KPA, with strength of approximately 1.1 million personal is the fifth largest active duty military force in the world. Its ground forces, with approximately strength of 0.95 million are the third largest. The reserve components of the KPA are made up approximately 4.7 million. The KPA's presence is all pervasive in the nation's affairs. It KPA is the largest employer, purchaser and consumer in the country. Nearly 70 % of the active forces, equipped with 2,000 tanks and over 8,000 artillery guns, deployed within 144 km. of the DMZ. It is estimated that the forces deployed in the forward Zone are protected inside more then 4,000 underground facilities. Nationwide, it is believed that there are 11,000 underground facilities. There facilities are linked by fibre optics communication; they not only shield the North Korea forces from the US and South Korea surveillance and air capabilities but also protect the country's leadership and critical forces during war. By implication, the concealment provided by these underground facilities make it difficult for South Korea to obtain and discern battle indication before an impending North Korean offensive.

In 1992, the country was divided into nine military districts, which were independent of the corps formations located on a geographical basis and per threat perception. The military districts structure was primarily responsible for reserve forces, which were organised into divisions and brigades, as also logistics. However, as per latest input, it appears that the military districts have been done away with.

The DPRK remains the world's most militaristic state. It commits roughly 25 percent of its Gross Domestic Product (GDP) to military spending. Out of every 1,000 people, 40 serve in uniform. By comparison, the ROK spends 4 percent of its GDP on the military and 14 of every 1,000 people serve in uniform. The DPRK maintains imposing forces in terms of numbers. The majority of DPRK forces are forward deployed, in attack positions, within 65 km. of the DMZ (Oh and Hassig 2000: 111).

Military Strategy

The primary objective of North Korea's military strategy is to re-unify the Korean peninsula under North Korean control within 30 days of beginning hostilities. A secondary objective is the defence of North Korea. To accomplish these objectives, North Korea envisions fighting a two-front war. The first front, consisting of conventional forces, is tasked with breaking through defending forces along the DMZ, destroying the Combined Forces Command (CFC) forces, and advancing rapidly down the entire peninsula. This operation will be coordinated closely with the opening of a second front consisting of special forces units conducting raids and disruptive attacks in CFC's rear (Oh and Hassig 2000: 108).

In developing the force to fulfill this two-front strategy, North Korea's leaders realised that they could never reach technological parity with the United States or South Korea. Instead, they focused on attaining overall combat superiority through the use of surprise, shock, speed, and overwhelming quantities of troops and firepower coupled with a well-trained special forces. North Korea, devastated during the Korean War, also places great emphasis on maintaining a strong defence. To achieve the strategic defence mission, North Korea has established defensive belts. They are designed to defeat any attack from ground or amphibious forces. The main strategic belt runs from the DMZ to Pyongyang. This belt contains over two-thirds of the DPRK's active manouver ground forces. Two army-level headquarters may be activated for wartime operations.

Coastal defence is provided by the navy, and ground anti-landing defence is provided by the army. Defence of DPRK airspace is provided by the KPAF and anti-air artillery units of the army. At the initiation of a DPRK ground offensive, the North's

reserve forces, numbering some 5 million, would man a pre-established, in-depth national defence network.

Table 3.2

NORTH KOREA'S ANNUAL MILITARY EXPENDITURES, 1991-2003

Year	Total budget (official)	Military Expenditure
1991	17.2	5.1 (2.1)
1992	18.5	5.5 (2.1)
1993	18.7	5.6 (2.2)
1994	19.2	5.8 (2.2)
1995	20.8	6.2
1996		5.8
1997	9.1	4.8
1998	9.1	4.8 (1.3)
1999	9.2	4.8 (1.4)
2000	9.6	5.0 (1.4)
2001	9.8	5.0 (1.4)
2002	10	5.0 (1.5)
2003	11.3	5.0 (1.8)

Source: Government of Republic of Korea (2005).

Military Doctrine

DPRK military doctrine is based on a blend of Russian operational art, Chinese light infantry tactics, and North Korean lessons learned during the Korean War. This doctrine is tempered by the national goal of *Juche*. The impact of *Juche* is that imported military concepts have been adapted to the unique geography, social conditions, and economic conditions found on the Korean peninsula. The guiding principles within DPRK doctrine are as follows:

1. Annihilation: Destroy defending CFC forces in place. Do not allow them to withdraw and re-group.

2. Surprise Attack: Achieved by making an unexpected assault in an unexpected manner. Prevent CFC from taking effective countermeasures. Position forces to attack with little preparation. Practice excellent operations security and deception. Attacks at night and during adverse weather are the best way to achieve surprise.

3. Overwhelming Firepower: Employ continuous massive fires (including chemical) from heavy guns and multiple rocket launchers to create opportunities for manoeuver and to pulverise CFC forces.

4. Mobility: Employ tanks, armoured personnel carriers (APC), self-propelled artillery, vehicle-mounted rocket launchers, and vehicle-mounted anti-aircraft guns to be able to attack/counte-rattack while moving.

5. Impregnable Rear: Ensure that rear areas are secure from CFC attack to remain fully capable of continuous support to attacking forces.

6. Conduct of Special Operations and Guerrilla Warfare in the Enemy's Rear: These operations are to be conducted in close coordination with conventional operations to maximise disruption of CFC air, artillery, and logistics support to frontline CFC units.

7. Use the Korean People's Army Navy (KPAN) and Korean People's Army Air Force KPAAF in Co-ordination with Ground Forces: Employ the unique fires available from these forces to carry the fight to the depths of CFC defences. Use their transport capabilities to insert Status of Forces Agreement (SOFA). Use them to safeguard the impregnable rear from air and sea attack.

8. Echelon Forces: Echelon at corps and below to provide both offensive and defensive options as a conflict unfolds. Normally three echelons: about two-thirds of force in first echelon, about one-third in the second echelon, with about one-ninth held in reserve or as the third echelon.

9. Combined-arms Operations: Co-ordinate the actions of all forces, large and small, conventional and unconventional, to successfully execute combat engagements.

10. Adequate Logistics: Ensure that there are sufficient logistic units to support combat operations.

11. Use Terrain to the Best Advantage: Emphasise mountain operations.

12. Detailed Reconnaissance: Know CFC locations and be able to target them.

North Korean Missiles

North Korea is believed to have more than 800 ballistic missiles, including long-range missiles which could potentially strike the US. They are believed to be based on Scud missiles including a medium range ballistic missile (MRBM), the No-dong, and a long-

range missile, the Taepodong (BBC News 2006 and Bermudez 1999). North Korea is now believed to be working on modifications to the Taepodong, including the Taepodong-2, which could have a range of up to 6,000 km., and which was first test fired in July 2006 (BBC News 2006). North Korea is not a member of the Missile Technology Control Regime (MTCR).

Table 3.3

NORTH KOREA NUCLEAR MISSILES INVENTORY

Designation	Stages	Engine	Range
KN-1	1	turbojet	110 km.
KN-2	1	solid	110 km.
Scud-B	1	liquid	300 km.
Hwasong-5	1	liquid	330 km.
Hwasong-6	1	liquid	500 km.
No-dong-1, 2	1	liquid	1,300 km.
No-dong-B	1	liquid	2750 - 4000 km.
Taepodong-1	2	liquid	2000 - 2900 km.
Taepodong-2	2	liquid	3750 - 15,000 km.
NKSL-1**	3	liquid + solid	orbital
NKSL-X-2***	3	liquid + solid	orbital

Source: Global Security (2006).

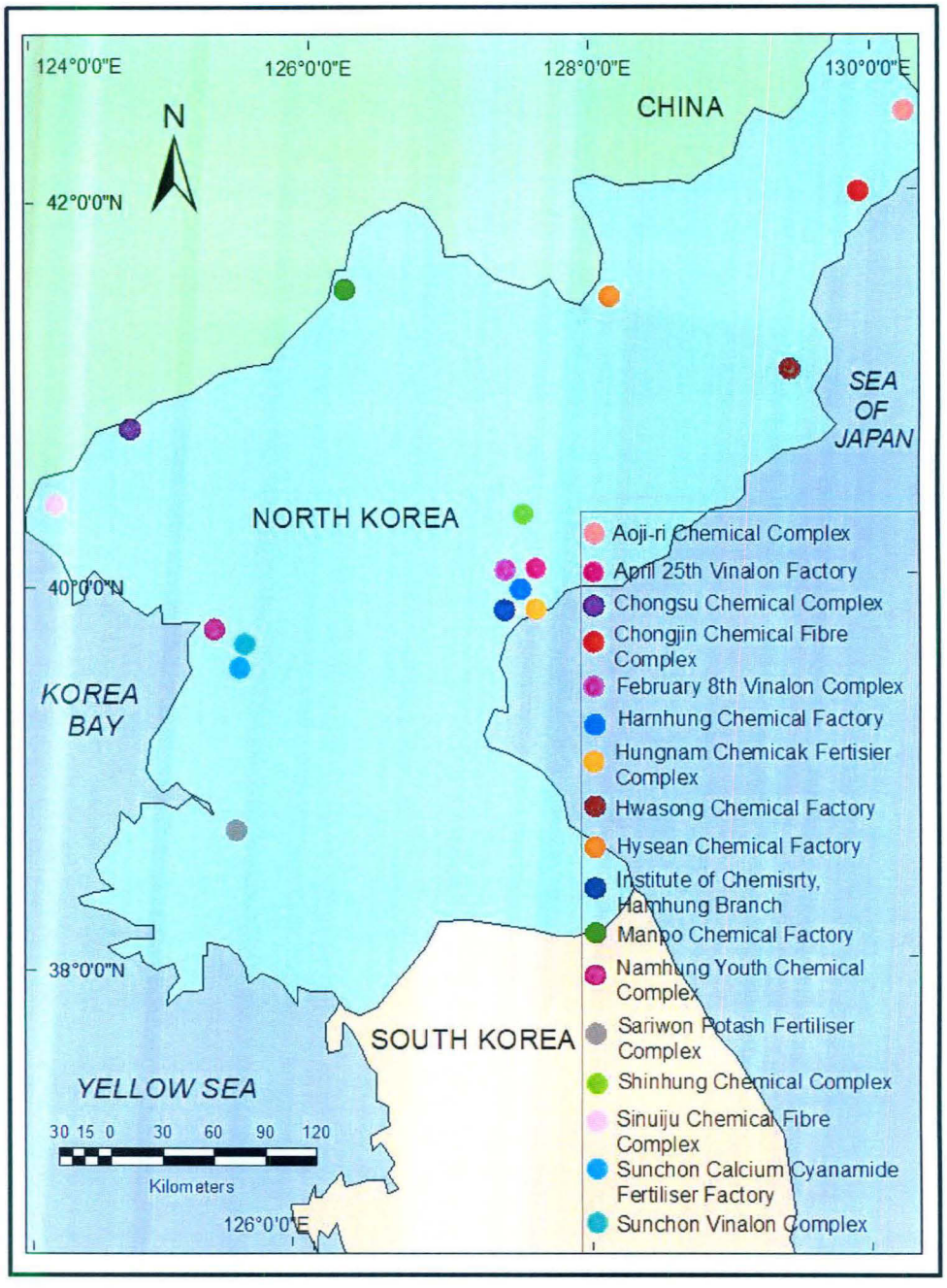
Chemical and Biological Weapons in North Korea[1]

There are very few details available on the chemical and biological weapons of North Korea. Nonetheless, an analysis based on a variety of sources, particularly official US, Russian and South Korean statements and reports, concludes that North Korea probably has developed chemical weapons to be part of its deployed military capabilities (although there is little authoritative information on the type and amount of agent or delivery means) as based on the Soviet doctrine. It is also probable that North Korea has a biological weapons programme at least at the research and development stage. Biological warfare has not received the same attention as chemical or nuclear warfare. However, if

[1] Data for this section is taken from International Institute of Strategic Studies (2004), "North Korea's Weapons Programmes: A Net Assessment", *IISS Strategic Dossier*, London: IISS.

Map 3.3

MAJOR NORTH KOREAN CIVILIAN CHEMICAL PRODUCTION FACILITIES



Base Map Source

International Institute of Strategic Studies (2004)

the DPRK did choose to employ biological weapons, it probably could use infectious agents, such as those causing anthrax or plague, against CFC forces. The DPRK is capable of producing nerve, blood, choking, and blister agents. They have at least eight industrial facilities that could produce these agents. While production rates are uncertain, large quantities of agents are believed to be available.

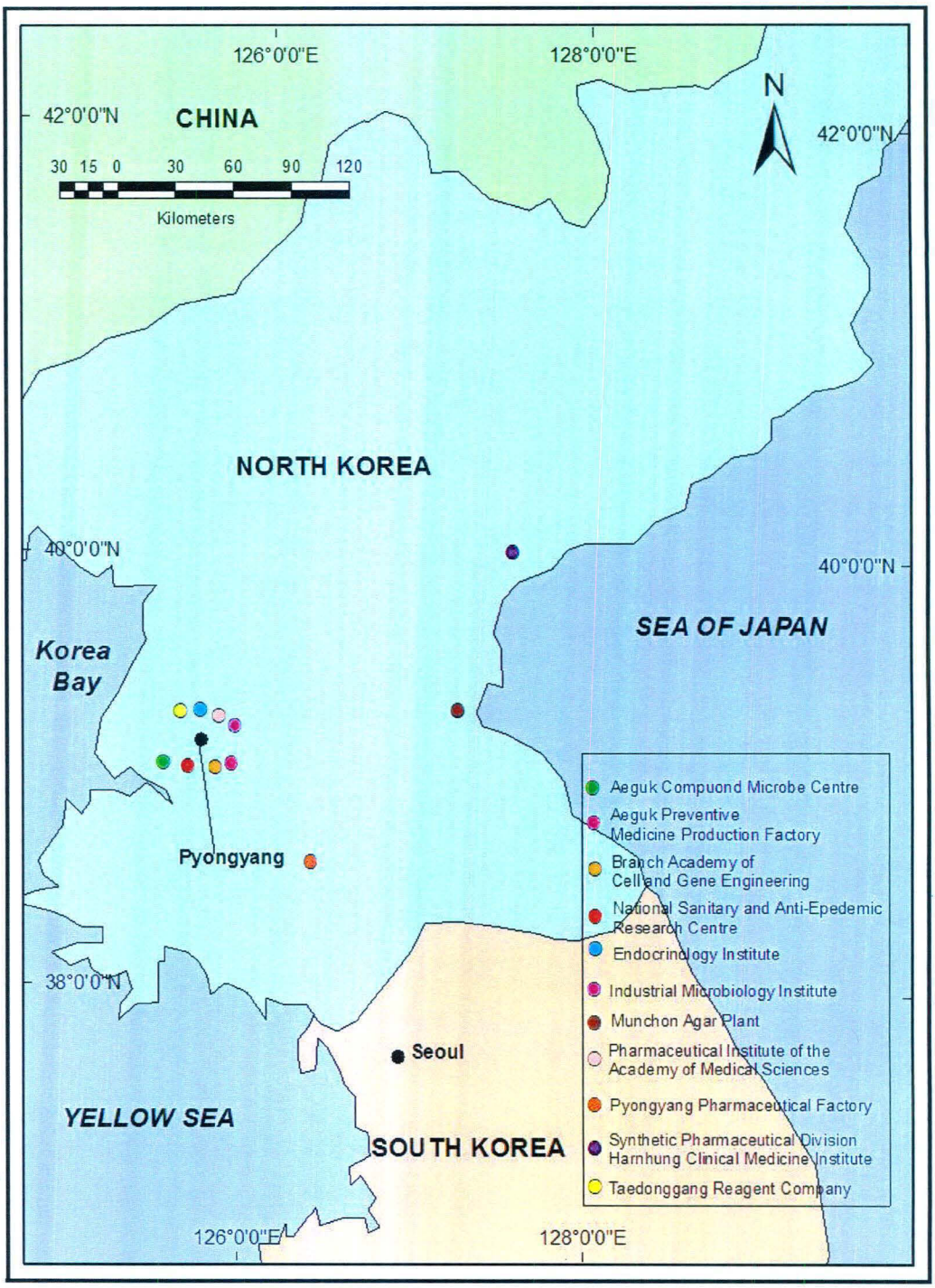
Recent South Korean government reports estimate a range of between 2,500-5,000 tonnes, but it is unclear whether these estimates concern the weight of chemical agent or the overall munitions stockpile and even whether they include biological agents. Chemical weapons can be delivered by virtually all DPRK fire support systems. The DPRK plans to operate in a chemically contaminated environment. Chemical defence units are organic to combat units down to regiment level. These chemical defence units have both detection and de-contamination systems. Their missions include reconnaissance and the training of personnel in the use of protective equipment. Chemical training and exercises for both military and civilian personnel have increased consistently over the years. DPRK's chemical weapons would compliment conventional military power. Non-persistent chemical agents could be used to break through CFC defensive lines or to hinder a CFC counterattack.

History and Development

In 1954, the North Korean Army reportedly established regular chemical and biological defence units, which were most likely modelled on Soviet nuclear, biological, and chemical (NBC) units. According to some press accounts, North Korea's offensive chemical weapons programme also began at this time, relying primarily on assistance from the Soviet Union, but the reliability of these reports cannot be determined. In any event, in the late 1950s, North Korea began to develop an extensive chemical industry. At

Map 3.4

MAJOR NORTH KOREAN CIVILIAN BIO-TECHNOLOGY FACILITIES



Base Map Source

International Institute of Strategic Studies (2004)

the end of 1961, Kim Il Sung issued a 'Declaration of Chemicalisation'. This called for greater efforts to develop various chemical production facilities to support different sectors of the North Korean economy.

According to a secondary source, construction of an underground biological weapons research and development facility was completed in the 1970s. This facility was located in Onjong-ri, South Pyongan Province and conducted research, development, and testing of biological weapons agents on small laboratory animals. North Korea began actual production of biological agents and obtained a turnkey plant for agar (growth media) from East Germany in 1984 to further the biological weapons programme.

Whatever the status of its biological weapons efforts, North Korea has developed a number of dual-use biotechnology facilities that could be used to research biological weapons agents and produce militarily significant quantities of biological agents. But this infrastructure is not highly developed and there is no definitive evidence that it is being used for this purpose.

Since the early 1990s, official US, Russian and South Korean government publications have all described North Korea as having an active chemical weapons programme that has gone beyond research and development and includes the actual production and stockpiling of chemical weapons. A number of civilian chemical facilities have been implicated in chemical weapons production, such as the Manpo Chemical Factory and Aoji-ri Chemical Complex. North Korea joined the Biological and Toxin Weapons Convention (BTWC) on March 13, 1987 although it is not a signatory to the Chemical Weapons Convention (CWC) (International Institute for Strategic Studies 2004).

South Korean Nuclear Weapons Programme

While looking at the military balance on the Korean peninsula, it would also do us good to take a brief look at the nuclear weapons programme in the 1970s which 'independent' South Korean governments of the day were pursuing in order to maintain a favourable status quo in the likely event of withdrawal of the US nuclear cover from Korean peninsula.

In 1970, South Korean President Park Chung Hee set up two ad hoc working groups to study how the ROK's arms industry could be upgraded. The Weapons Exploitation Committee investigated the nuclear weapons option and recommended to Park that the ROK proceed down the nuclear path. He reportedly decided to act on this recommendation in late 1971 or early 1972. Park was also acting immediately as a response to US President Richard Nixon's announcement that the US would withdraw the 7th Infantry Division from the ROK in order to implement his Guam Doctrine and to bolster US forces fighting in Vietnam. Park's decision was taken in spite of the continued presence of other US ground forces, such as the 2nd Infantry Division, and an estimated 600-700 US nuclear weapons stationed in Korea.

Sensitised by the India's peaceful nuclear explosion in 1974, Washington became suspicious about the ROK's nuclear programme. South Korea's negotiations to purchase a re-processing plant from France had been under way since 1972, and the issue was well known to the United States. When the French-ROK deal became public in June 1975, Seoul maintained that the technology was needed for energy security, and to match the Japanese Tokai Mura reprocessing plant. In fact, the ROK had planned to acquire a re-processing capability since 1968, but fuel security was a secondary consideration.

After questions were raised within the London Nuclear Suppliers' Group (NSG), France renegotiated the agreement with the ROK so that equipment it supplied could not be replicated for two decades. On September 22, 1975, a safeguards agreement between the IAEA, France and ROK entered into force. By now, however, the United States was convinced that the ROK's reprocessing programme was motivated by a desire to use plutonium for military purposes rather then nuclear fuel cycle needs. In March 1975, Washington intervened strongly and demanded that the Seoul give up its programme. Washington threatened to withhold Exim bank funding of the ROK's second nuclear power rector which had been ordered from a US supplier. US officials also insisted that the French, Canadian, and Belgians discontinue their involvement re-processing deal. US Secretary of State, Henry Kissinger finally stopped the ROK programme by informing President Park that the US would cancel its security commitment to the ROK if the South persisted with its nuclear weapons programme.

During the Carter administration, the United States and the ROK again clashed on the nuclear weapons issue. As statements suggested that the ROK world seek to acquire nuclear weapons should the United States complete its announced withdrawal from the South.

In 1978, an influential communication was made privately by a ROK general to a senior US State department official with non-proliferation responsibility who was visiting Seoul. The general indicated that the ROK would not hesitate to renege on its NPT commitment if US nuclear weapons were removed from South Korea. Later that year the Carter administration reversed its withdrawal policy, but the ROK continued to seek dual-capable technologies, in particular ballistic missiles and nuclear fuel re-processing capabilities. In 1979, for example, the ROK tried to acquire the US atlas centaur Intermediate Range Ballistic Missile (IRBM) which could fire a W-38 nuclear warhead over a range of 7000 km. with an accuracy of one mile.

The ROK continued its ballistic missile research and development programme until about 1980 when it was discontinued for lack of finance. In 1984, South Korea tried again to obtain reprocessing technology from Canada for mixed-oxide fuel (MOX) production. This attempt was based on co-operation research on plutonium recycling with Canada's Atomic Energy Canada Limited (AECL) begun in 1982, and extended by agreement in December 1983 to a second phase. Washington persuaded Ottawa to cancel its co-operation with Seoul, a move which the South Koreans resented as an unwarranted American interference into what they viewed as a legitimate nuclear power technology (Hayes 1993:51-53).

South Korean Military Forces

On Korea's independence from Japan, Korean personnel with military experience organised themselves into a group to serve as a foundation for the Korean Armed Forces. Subsequently, the US military government dissolved this group and established a military corps of 25,000 soldiers. Consequent to the establishment of the ROK on August 15, 1948, the National Armed Force was established. At the outbreak of the Korean War the South Korean Army was an eight-division strong force with nearly 100,000 personnel.

In the initial stages, the South Korean Army had to identify the rogue elements and weed them out. Many of these elements were planted by North Korea in its attempt to re-unify the two Koreas by way of military force. In 1948, many army regiments were afflicted with Communist inspired riots and disturbances. There was a rapid expansion of the armed forces during the Korean War. After the Armistice in 1953, the army further expanded into 5 corps and 20 divisions.

The South Korean Army also participated in the Vietnam War. Its participation in the war began in 1964 when it despatched a medical force. A division each were despatched in October 1965 and September 1966. About 50,000 Korean soldiers were despatched to Vietnam during this period.

In the 1970s, the South Korean army began to assume the responsibility of manning the Armistice Line after the US withdrew its 7th Division. After withdrawal of its forces from Vietnam in 1973, the army embarked on a major modernisation programme, which included conversion of an infantry division to mechanised division, upgrading of personnel weapons, qualitative accretion in artillery forces, production and induction of long range guided missiles and multiple rocket launchers, upgradation of tanks, and enhancement of army aviation capabilities.

The Present Status

The present strength of the army is approximately 5,60,000 personnel, which includes 1,40,000 conscripts. The Army is divided into three Commands (First Army, Second Army and Third Army), the Aviation Command and the Special Warfare Command. In addition, there are functional commands like the Counterespionage Operations Command, the Defence Security Command, the Logistics Base Command and Capital Defence Command. The weapons inventory consists of more than 2,200 tanks, approximately 2,500 Armed Personnel Carrier, an estimated 3,500 towed artillery guns and approximately 1,100 self-propelled artillery guns. Its surface-to-air missiles (SAM) inventory consists of approximately 1,200 missiles (Global Security 2008a). The aviation assets include nearly 120 attack helicopters, 24 transport helicopters and nearly 280 utility helicopters. The South Korean Air Force operates versions of F-16 and F-15E, procured from the United States (Wikipedia Contributors 2008).

The Naval Assets

The basic foundations for a modern navy for South Korea were laid in the year 1946 with the establishment of a naval school, setting up of infrastructure for the repair and maintenance of ships and organisational structuring. In addition, the naval base at Inchon was established and other bases were expanded. The process of building a modern fleet began in in 1949, with the acquisition of a few vessels from the US. In conjunction with the US Navy, the South Korean navy played an important role during the Korean War by protecting the Sea Lanes of Communication (SLOC). The modernisation programme of the navy includes bringing in Aegis-class destroyers, next-generation submarines and anti-submarine aircraft (Global Security 2008b).

GREAT POWER DIFFERENCES OVER THE HANDLING OF NORTH KOREA

Even before the North Korean nuclear test, difference existed between the great powers over how to handle the North Korean nuclear programme. After the nuclear test of 2006, North Korea's relationship with China assumed significance. For China, the North Korean test constituted a major loss of face as Beijing was working feverishly to prevent Pyongyang from conducting the test. Given the suspected earlier Chinese covert support to the North Korean nuclear programme, China was concerned about its image as a responsible power and hence was looking at ways to avoid such kind of loss of face (Bhattacharya 2006: 865).

Moreover, a nuclear North Korea posed a special challenge in terms of Chinese security. North Korea's actions directly impinged upon the Chinese security by catalysing further insecurity in Japan and a more rapid augmentation of Japanese military capabilities (Snyder 2007: 36). China therefore sought to mend fences and restore its influence while simultaneously avoiding any change in the status quo. More structural reasons for China's declining influence were also in its booming economic co-operation with South Korea (Kim 2001: 36).

According to Nina Hachigian (2005), China's leaders now have the responsibility to decide how far they are willing to go to put the nuclear genie back in the bottle in North Korea. According to her, China has significant leverage, because it supplies much

of the fuel and food that North Korea needs to survive and is the North's major trading partner and closest ally. In terms of its North Korea policy, China held an opinion that Korean peninsula must be free of nuclear weapons and that the dispute over North's nuclear weapons must be resolved peacefully. Incidentally, these two goals of China coincide with United States and other great powers in the region. Therefore, the rationale of the Six Party talks. However, even though their goals coincide, how to achieve these goals differ in case of each country.

Table 3.4

MILITARY EXPENDITURES OF MAJOR POWERS IN THE NORTHEAST ASIA, 1999

Classification	GDP (U.S $ bn)	Defence budget (U.S $ bn)	Defence budget as percent of GDP	Military Manpower (1,000 persons)	Military Expenditure per capita (U.S $)
U.S	9200 27%	283	3.1	1371	1036
Japan	4300 12.80%	40.4	0.9	242	319
Russia	1000 (2.9%)	56	5.1	1004	380
China	732 2.20%	39.9	5.4	2820	32
Taiwan	288 0.85%	15	5.2	370	687
South Korea	407 1.20%	12	3	672	257
North Korea	14.7 0.04%	2.1	14.3	1055	98
Regional Total	15942	448.4	5.3 average	7534	401.3 average
% of Global Total	47.30%	56%	4.1(global average)	35%	221 (global average)

Source: International Institute of Strategic Studies (2000).

For Washington, the test presented a tremendous challenge as there were fears that if ignored, North Korea could follow the Pakistani model of gaining de facto acceptance as a Nuclear Weapon(s) State (NWS) (Snyder 2007: 35). At the heart of the differences over the handling of North Korea between Washington and Beijing is the larger power game between the two countries. According to Wu (2006), Sino-US competitive co-operation over North Korea is in essence a big power game amid the

tectonic shifts of Asian geopolitics. After all, they fought on opposite sides of the Koreas more than 50 years ago and still share geopolitical ambitions in the region.

According to Gavan McCormack (2006), the South Korean, and to a lesser extent Russian and Chinese, approach to North Korea constitutes an alternative to the US approach. Instead of squeezing North Korea, cutting trade and restricting the flow of funds to it and working covertly to achieve "regime change," South Korea, and the regional powers China and Russia, were all doing or planning deals, maximising their co-operation and engagement in the two-way flow of funds and trade, and steadily incorporating North Korea into the networks of regional co-operation i.e. precisely the reverse of US and Japanese practice.

On the other hand, there are also differences between Tokyo and Seoul over how to handle North Korea. Since the 1994 nuclear crisis, the US, and particularly South Korea and Japan had attempted to co-ordinate policies and present a unified front vis-à-vis North Korea. However, South Korea's stubborn refusal to consider economic sanctions against the North and its decision to go over the head of the US and Japan and offer economic aid to North Korea demonstrated that South Korea was more willing to heed North Korea than Japan and the US. When North Korea test fired a series of seven missiles, Tokyo was understandably nervous as these missile fell into the Sea of Japan in the waters off Russia's Far Eastern coast. Following these, Japan imposed bilateral sanctions on Pyongyang, including banning ferry links, diplomatic visits, and charter flights. There was also a debate in Japan on the issue of a pre-emptive response if future North Korean activities posed a material threat (Cotton 2007: 33-34). North Korea's earlier missile tests in 1998 had led Tokyo revising its security outlook considerably. Since then it had begun collaborating with Washington on TMD. It also had begun to hedge its security reliance on the United States by acquiring its own surveillance satellites (Harnisch 2002: 857). Despite this, when North Korea conducted another round of missile tests in 2006, South Korea chose to display sympathy and understanding for the North harping the point that North's 'unwise act' could lead to the build up of armaments in the region. According to Japan, South did not give proper attention to threat emanating from the North Korean missiles (Hajime 2006: 32).

THE CHANGING DYNAMICS OF THE US-SOUTH KOREA SECURITY ALLIANCE AND SOUTH KOREAN SECURITY CHALLENGES

A noticeable drawback in the initial US policy in the peninsula was that of leaving South Korea out of the US defence perimeter in the Pacific and the North East Asia. In January 1950, US Secretary of State, Dean Acheson outlined the US policy for North Asia, which gave primary importance to Japan and the Philippines completely ignoring Korea. Thus when the Korean War broke out the US policy makers found themselves in a problematic situation. As the war progressed, US policy in the region crystallised and the threat of the Communist bulwark in Northeast Asia was appreciated. This led to massive pumping in of resources into the region to halt the Communist tide (Bhonsle 1986: 27-28).

Compared to many other countries, South Korea has had to face a consistently high level of insecurity. Although the end of the Cold War called for a different security paradigm worldwide, inter-Korean relations have not yet fully emerged from their current state of hostility, while rivalry and tensions with neighbouring states have prevented the as yet unresolved, sub-regional Cold War in Northeast Asia from ending. Yet, the post-Cold War era has led South Korea to seek a broader concept of security, one that acknowledges not just traditional military threats, but that also recognises the importance of economic and other non-traditional security issues (Lee 2004). Accordingly, South Korea has begun to focus on three different sets of concerns: traditional military threats, non-traditional security issues and humanitarian matters. In the Korean context, all three are closely interrelated. However, traditional military concerns continue to be of utmost importance. The current focus on traditional military concerns is, obviously an inevitable corollary of the North Korean nuclear threat.

The US-South Korea alliance which has served as the fundamental pillar of security on the Korean peninsula and in Northeast Asia for nearly fifty years is being challenged by the demand to redefine its rationale and roles. South Korea's economic development and increase in military strength has brought about heightened confidence in its national defence capabilities and has also encouraged public opinion to demand a decrease in military dependence on the United States. Furthermore, the growing domestic discontent with US forces in South Korea has led to calls for the revision of the ROK-US

Status of Forces Agreement (SOFA). On the other hand, security concerns regarding Russia and China, former enemies during the Cold War have considerably attenuated over the years.

Although bilateral efforts such as the inter-Korean dialogues and the ROK-US security alliance remain crucial to South Korea's security, the increasing salience of multilateral approaches in the post-Cold War security environment has not been lost on Seoul (Lee 2004: 106-108). How will the changes in the regional environment affect the bilateral alliance? It is very difficult to say at this point in time but clearly they promise a bright future for Korea's national interest and security. In fact, the multitude of differences may eventually be swept aside by the need to maintain the balance at the regional level.

Inter-Korean Relations and South Korea's Policies

Tensions between the two Koreas started to ease in 1991 when the two governments agreed that both would apply for membership in the UN, and especially after the historical inter-Korean summit of June 2000.[2] With the "Sunshine Policy" of engagement (a comprehensive policy based on reconciliation and co-operation), the Kim Dae-Jung government greatly supported North Korea's effort to join the international community with a view to ending the Cold War structure on the Korean peninsula (Lee 2004:108). Although the Summit did not eliminate the possibility of conflict on the peninsula, it made a peaceful, negotiated settlement of the dispute possible. After the summit, the leaders from both the sides were able to agree on principles and subsequent actions for reconciliation and re-unification (Yunling 202: 93). It also opened the doors for increased economic contact between the two sides in keeping with the Sunshine policy is pledge to "separate economics from politics". The key calculation behind such a move was that the North's resultant growing economic dependency would have provided Seoul with increased leverage over Pyongyang (Cossa 2004). While an alterative argument given by Kim (2001) suggested that despite such engagement, Pyongyang retained all the levers to

[2] The enthusiasm among the two Koreas over the Summit was so much that both the nations for the first time in 50 years jointly worked out and submitted a resolution to the UN General Assembly entitled "Peace, Security and Reunification of the Korean Peninsula" to mark the occasion. See Choe (2000).

extract maximum aid for minimal concession. Moreover, Seoul would be bled dry in its quest for peace at any price and the fundamentals of the North Korean system remained dominant (Kim 2001: 13).

South Korea's policy on North Korea obviously has re-unification as its ultimate goal. Yet, South Korea has not sought to achieve re-unification by way of unilateral force. Rather has opted for an incremental approach. The South Korean governments of presidents Chun Doo-Hwan, Roh Tae-woo, and Kim Young Sam all emphasised that it is more desirable to proceed with the re-unification policy under this principle of gradualism, which assumes peace as an essential pre-requisite for re-unification Seoul has also approached Pyongyang with the proposition of first establishing peace on the peninsula before actually pursuing re-unification.

Sunshine Policy

When the Kim Dae-Jung administration began its tenure in February 1998, inter-Korean relations were hostile. North Korea, under the basic principle of "mobilising South Korea through the United States", focused on engaging in talks solely with US while intentionally excluding the South. As a result, the Sunshine policy of President Kim Dae-Jung aimed at specifically redressing this forced exclusion through contacts with the North, and thus constructed a long term plan under the goal of "making the Korean issue wholly Korean".

Due to North Korean obduracy, the Sunshine policy did not gain any headway in the beginning. However, after the summit meeting in June 2000, inter-Korean relations dramatically improved. In addition, this improvement resulted in North Korea's heightened reliance on the South Korean government. The fact that North Koreans appear to have relaxed their long-standing resentment of the South can be attributed to South-North civilian exchanges and humanitarian support enabled by South Korea's consistent effort at rapprochement. However President Bush was not in favour of the Sunshine Policy. Since then, the US and South Korea have been far apart on how to deal with North Korea (Gurtov 2007: 80).

Nevertheless, the Kim Dae-Jung administration carried on an unsystematic, nonstructural policy toward the North, which separated economics from politics because

its focus was on putting South-North relations back on track regardless of the cost. In fact, policy makers under the Kim Dae-Jung administration have been harshly criticised for their role in the so-called cash-for summit scandal, which involved the transfer of enormous sums of South Korean funds in exchange for Pyongyang's concurrence to a summit between the two president Kims.

Nevertheless, Kim Dae-Jung's successor, Roh continued his policy of reconciliation and co-operation while adjusting to changes that have since taken place in the regional environment. In addition to the five principles of the "pace-prosperity policy" announced in Roh's presidential campaign, the key items on Seoul's North Korean policy agenda are the following: the institutionalisation of South-North relations; the settlement of North Korea's WMD; the formation and maintenance of a diplomatic coalition for normalising North Korea-US and North Korea-Japan relations; support for the North's reforms; and the building of a peace structure on the peninsula and the establishment of a body for economic and peace co-operation in Northeast Asia. (Lee 2004: 111-113)

The ROK-US Security Alliance

In October 2003, South Korea and the United States observed the fiftieth anniversary of their bilateral security alliance. In a sense, the United States has been the single most influential force in the international affairs of the Korean peninsula since the Second World War. Both Seoul and Washington enjoyed close, friendly ties and shared common strategic goals and understandings throughout the Cold War years. Though the end of the Cold War changed the security environment in Northeast Asia, the ROK-US alliance was neither weakened nor completely reputed. Despite the elimination of the Cold War threat from China and Russia, the United States and South Korea have continued to maintain a multi-dimensional and comprehensive alliance. From the military and strategic point of view, bilateral co-operation is still important because the threat of war still lingers on the Korean peninsula. North Korea's continuous pursuit of nuclear dream has the potential to exacerbate the tensions that could well provoke an outbreak of violence. As North Korea and the United States confront one another over the nuclear issue, the need to strengthen ROK-US co-operation has grown even more pressing.

Nevertheless, the "blood ties" between Seoul and Washington have reached a critical point. The ROK-US relationship today is much more complex and strained than during the Cold War era because of an emerging slew of different interests and understandings. Furthermore, a number of unprecedented events, particularly in recent years, have strained the alliance in ways more severe than ever before. Given the fact that the ROK-US alliance exists for the express purpose of containing North Korea, the June 2000 North South Summit has raised questions in regards to the security rationale and raison d'etre of the alliance in the face of a diminishing North Korean threat.

The rapid spread of anti-American sentiment in South Korea can be seen as the outcome of the evolution of Korean perceptions of the United States from an ally to a preponderant (and increasingly self-absorbed) superpower. Moreover, the South Korean public no longer recognises the North as its enemy, but has rather begun asserting a nationalism that regards its Northern counterpart as a friend. Interestingly the possibility of the North's possession of WMD does not seem to have evoked adverse reactions from the South. To summarise, it can be said that the key point in the alliance being enervated has largely resulted from the difference in how Seoul and Washington look at Pyongyang and the threat North ostensibly poses to the United States (Lee 2004: 115-117).

CONCLUSION

The North's biggest concern, in the area of international relations, is that the United States is trying to seek 'regime change' in North Korea by shaking its political base. Despite not so severe relations in recent years between the two countries, the United States constantly raised the North's human rights issues: the North interpreting this as an attempt to tarnish its images and to collapse its regime. Even worse, the North's long-standing ally, China, is no longer a guardian that can protect its regime but rather a country that the North should be cautious of and fear.

As for the prospects for re-unification, many Koreans consider that as eventuality although no one is sure how that aspect may play out. After the end of the Cold War, it became common to hear and even faddish to assert that the issue of Korean re-unification by Southern absorption was no longer a question of "whether" but "how and when" (Kim 2004: 1). Many optimistic accounts suggested that re-unification would be inevitable

because of the sheer will of the Koreans on both the sides of the DMZ. And yet today the issue seems to be laden with a paradox: how high the price of re-unification would be particularly for South Korea. The North has staggering economic difficulties while the South is considered as one of powerhouses of the Asian economy (Taylor and Kim 1997). In an interesting study Noland *et al* (1998) argue that a study on the costs of Korean re-unification shows possible greater expenditure for South and this is the reason why in South Korea, there is a growing scepticism about the desirability of unification. Therefore, the problems with re-unification will continue to drive the great power involvement in the region. To ease the eventual process of re-unification, South has shifted from conflict suppression through deterrence to conflict regulation based on a wide range of CBMs and socio-economic functional co-operation complemented with dialogue and concrete exchanges and interactions. The co-operation can lay down the groundwork for re-unification and as a result the anxiety among the Koreans about the re-unification may be eased. The maintenance of peace on the Korean peninsula is the most pressing concern of the North and the South to ensure the stability and well-being of the peninsula (Kim 1991: 118).

The four great powers in Northeast Asia matter deeply for this process. Japan and Russia are the supporting actors here while the US and China are playing the leading role. Each power has its own interest to get involved in the inter-Korean politics. But ultimately, the opportunity for greater inter-Korean co-operation and eventual re-unification lies in the demise of great power rivalry and the corresponding opening of more autonomous space for both the Koreas (Kim 2002: 25).

CHAPTER

4 ENERGY ISSUES AND THE KOREAN PENINSULA

CHAPTER FOUR

ENERGY ISSUES AND THE KOREAN PENINSULA

The previous chapter took an overview of the security issues on the Korean peninsula. Apart from the issues of hard security, the other security issue facing the peninsula is energy security. Korean peninsula is situated in a region which is at the hub of the economic boom with three economies in tow: China, Japan and South Korea. All of them are heavily dependent on Middle Eastern sources of oil. Therefore, the energy policies of these countries have dictated a move away from oil, which has facilitated the rapid rise of gas, whilst expanding the roles of coal and nuclear in power generation. And interestingly enough, unlike the European continent or North America, which have a well-developed grids for natural gas, Northeast Asia has no such grid and relies heavily on the Liquefied Natural Gas (LNG) for the bulk of its gas supplies (Calder 2004a). The highly energy-intensive character of the South Korean economy and North Korea's high energy consumption means that the issues of energy security are of paramount importance for the Korean peninsula.

This chapter will take a look at these issues of energy security for the peninsula by placing them in the larger context of energy security for the Northeast Asian region. Considerations of geopolitics and geo-economics have featured regularly in the question of energy security and accordingly this chapter will also examine the strategies of external powers particularly Russia on the issue of energy for this region. Problems and prospects of the Northeast Asia gas pipeline will also be examined.

The chapter would begin by taking an overview of the nature of energy demand by the Korean peninsula and Northeast Asia. Especially, this would also involve looking at the energy situation of North Korea which has given the severe pressure on its domestic hydro and coal power resources as the main reason for pursuing the nuclear option. With this background then, it is pertinent to examine the geopolitics of the energy resources of the region. In order to satisfy the energy needs of Northeast Asia, there have been given proposals for gas pipelines from the Russian Far East. Hence, the chapter would explore these proposals in a detailed manner. Looking at these pipeline proposals would involve making an assessment of its strategic importance and comparison with the other similar projects in the region.

ASIAN ENERGY SCENARIO

Energy is one of the critical driving forces for human life. It provides us with heat, light and mobility. For nearly 15 years, since oil prices began to wane in the early 1980s, the world has sometimes neglected the connection between energy and security. However in the last few years the rising oil prices has forced the international community to sit up and take a look at how a rise in the oil prices would come to affect countries' economic growth and thereby have strategic consequences.

As East Asian studies expert, Kent Calder observed in 1996 that in the coming years, stable, reasonably priced energy supplies would continue a critical element of national well-being. Yet their safe and efficient provision cannot be assumed. Particularly in Northeast Asia, the looming long-term problems of energy supply or the dilemmas for security that inevitably follow are likely to be more complex, subtle, and potentially because of dangerous (Calder and Fesharaki 1996: 7)

Issues of energy security in Northeast Asia also constitute issues of geopolitics because of the involvement of external powers and also the natural endowments of the region. As the previous chapter has elaborated the region is highly conflict-prone particularly North Korea's nuclear ambitions.

The Northeast Asian region spans all scales of energy supply. In the Northeast falls the Russian Far east region of Sakhalin which is energy-rich across Korea and Japan to the Fujian and Guangdong provinces of China in the Southwest which are energy-deficient. In particular, the involvement of the external powers in and around Korean peninsula brings to fore the considerations of geopolitics in the issues of energy security.

The Korean peninsula is particularly an energy-deficient region where the contours of future conflicts will most likely take the shape of conflict over the issues of energy security. China, South Korea and Japan have been at the forefront of energy demand since the last three decades as a result of economic expansion. Moreover, South Korea and Japan have been long separated by a forbidding Cold War political divide from the enormous energy reserves of Russia and some parts of China (Calder 1996: 7).

According to Robert Manning (2005), one of the most critical factors shaping global energy markets is the burgeoning Asian oil and gas demand, particularly for fossil fuels. For most of the past quarter century, Asian energy demand grew at nearly

three times the global average. Asian demand has been a key driver of world oil markets and that trend is only intensifying. Asia will be the world's largest consumer of primary energy by 2010, with upwards of 75% of its oil imports coming from the Middle East. In the year 2000, Asia-Pacific imported roughly 12.5 million barrels of oil per day (bpd) out of the 20.7 million bpd of its oil consumption (Manning 2005: 21). Yet the critical question that arises in this regard is related to the geopolitical consequences of this drive for energy security.

Over the years, Asian governments have created mammoth apparatuses to deal with the issues of oil and energy security. Yet in terms of policy analysis, energy issues did not garner that much attention. Earlier, some states clearly viewed these issues as issues of national security, while some of the states took a casual approach to the issue. However, since the decade of 1980s, when Asia and particularly East Asia began to witness a massive economic growth, issues related to energy acquired a central stage in Asian states' foreign and economic policy.

As the "Asian miracle" unfolded and growth rocketed from just 4% of the world Gross Domestic Product (GDP) in 1960 to roughly 25% by 1995, its energy consumption grew by similar proportions. In China, South Korea, Thailand and Indonesia, electricity demand grew even faster than GDP, averaging 11-12% in this period. From 1983-93, four Asian economies- Japan, China, Taiwan, and South Korea- accounted for 36% of the world growth in primary energy demand (Manning 2005: 25). A turning point occurred in 1993 when China, then the world's 6th largest oil producer, became a net oil importer.

This had its impact on security discourse also. Whereas earlier security analyses of Asia centered on military modernisation by various countries particularly China, and flashpoints such as the Korean peninsula, the Taiwan Strait, Kashmir, the South China Sea and other territorial disputes since the mid-1990s, these analyses began to include issues of energy security. Today, across Asia, governments remain deeply involved in the energy sector- from state-owned oil companies that dominate all facets of energy production and distribution to price subsidies and import-export regulation (Manning 2005: 21).

As for the Korean peninsula, the Korea Energy Outlook released by the International Energy Agency (2002), predicted that Korea's role in world energy markets will expand over the next three decades. South Korea's energy demand is projected to grow at 2.3% per year through 2030. This energy demand growth will be

faster than in almost every other OECD country and much faster than in the rest of the OECD Pacific region. The outlook expects that oil will continue to dominate Korea's fuel mix, although demand for natural gas and nuclear energy will continue to expand. Natural gas, which was introduced into Republic of Korea (ROK) only recently, will be the fastest growing fossil fuel. The share of gas-fired power will increase rapidly, but coal and nuclear energy will remain the dominant fuels for power generation, accounting for nearly 75% of electricity output in 2030. Generation from nuclear power will more than double by 2030. The country will then account for 9% of world nuclear supply. The outlook projects that South Korea will need to build around 100 GW of new generating capacity over the next thirty years, at a cost of $ 88 billion (International Energy Agency 2002).

ENERGY RESOURCES OF THE KOREAN PENINSULA

On the whole, the Korean peninsula is only modestly endowed with natural resources, and North Korea has far more natural resources than South Korea. During the Japanese colonial period, the north served as the center for mining and industry whereas the south, with somewhat greater rainfall, a warmer climate, and slightly greater arable terrain, served as the center for rice production. There are no known reserves for oil and bituminous coal in South Korea. The only indigenous fossil fuel is anthracite coal, with about a 30 year reserve. A few uranium ore deposits have been discovered, but the grade is too poor to develop commercially. Energy needs are also met by importing bituminous and anthracite coal and crude petroleum. The potential for hydro-electric power is very limited because of tremendous seasonal variations in the weather and the concentration of most of the rainfall in the summer months. Offshore oil possibilities in the Yellow Sea and on the continental shelf between Korea and Japan have yielded nothing but exploration has continued unabated (Savada and Shaw 1990). According to Paik (2000), such exploration if yielded fruitful could help easing the oil supply shortage hugely.

North Korea's total fuel and energy resources of combustible fossils, wood fuel, and hydropower, as calculated in uniform energy unity (7000 calories/kilogram), are estimated to be 7.672 billion tons. Of this total, coal makes up 6.617 billion tons; turf, 120 million tons; wood, 16 million tons; and hydropower, 9 million tons. No industrially usable oil and gas deposits have yet been discovered in the country (Moiseyev 2000: 51). The capacity of North Korea's two oil refineries totals 4.5

million tons a year. With no significant petroleum resources yet discovered and only 18 percent of its largely mountainous terrain suitable for agricultural production, North Korea has been dependent since its inception as a state on external energy sources and international food aid, notwithstanding its rhetorical commitment to the slogan of *Juche* (Harrison 2003: 48).

Oil is imported from China and Russia by pipeline, and from Iran by sea. Because both Russia and China have insisted on hard currency payments at international prices for oil since 1991, Iran is becoming the major oil source under a 1989 agreement to supply 40,000 bpd (Savada 1993).

Table 4.1

MAJOR ENERGY INDEX COMPARISON, DPRK VS ROK (2002)

Energy Production	DPRK	ROK
Coal	21.9 mt	3.32 mt
Power generation installation capacity	7.77 GW	53.8 GW
Power generation volume	19,000 GWh	306500 GWh
Crude oil import	0.597 mt	109.10 mt

Source: *The Korea Petroleum Association Journal* (2003).

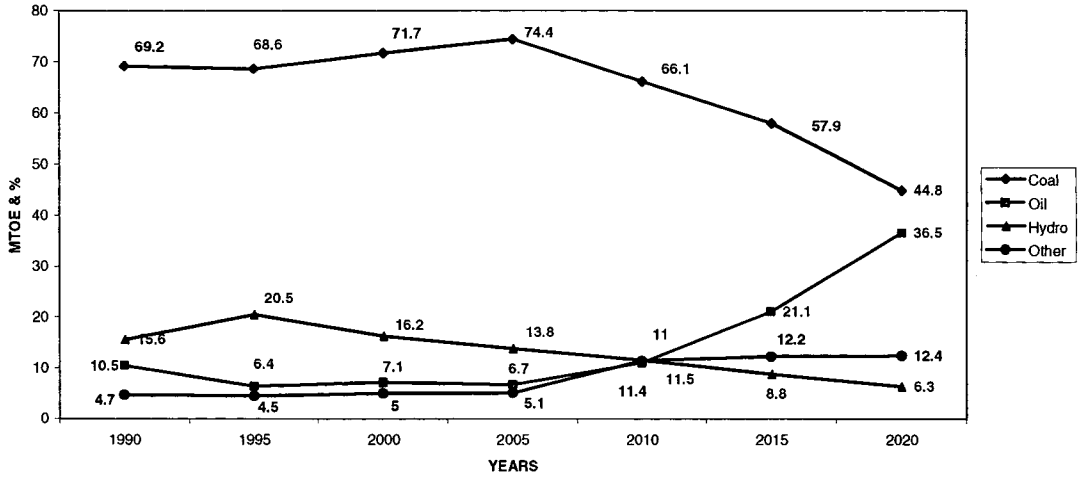
North Korea- Energy Situation

Historically, North Korea has had a high energy-use economy. An abundance of coal and water resources allowed North Korea to build a well-developed electrical power network. North Korea's pre-eminence as an energy producer began during the Japanese occupation with the Sup'ung Hydroelectric Plant, located in the northwest; at that time the plant was the largest of its kind in Asia. North Korea supplied more than 90 percent of the electricity in the Korean peninsula before partition (Savada 1993). Since the 1970s, the country has increasingly turned to coal as an energy source. North Korea's installed generating capacity was estimated at 7.14 million kilowatts in 1990, with 60 percent share from hydropower and the remainder from thermal sources. Primary commercial energy use in the Democratic People's Republic of Korea (DPRK) was approximately three times the level of China in 1990, and about half the level of Japan (Moiseyev 2000: 51).

To begin with, DPRK industrial structure necessitates a high level of energy use. With a high concentration of energy-intensive sectors like steel and fertilizer production, DPRK's industrial energy requirements constitute an important element

of its energy security. Moreover, an inefficient power distribution systems as well as inefficient use of fuels due to obsolete equipment, as well as lack of market pricing means the energy consumption tends to go towards higher side. Reliance on relatively less efficient fuels, such as coal, as a source of energy also contributes to the higher energy demand (You 2004: 1).

Figure 4.1
DPRK's Primary Energy Structure, 1990-2020



Up to the 1950s, North Korea remained an agricultural society. Firewood was the main energy source and the government encouraged the production of domestic coal to replace firewood. During the first five year economic development plan which started in 1962, North Korea concentrated on the construction of oil refineries and electric power generation facilities (Eui-Soon 2004: 56).

Qualitative change took place in the North Korean electric energy sector in the 1960s, during the implementations of the first Seven-Year Plan.

- First, by this time, a domestic basis had already been laid for developing this sector though restoration of the destroyed capacities and the use of those under construction.
- Second, the creation of new electric power plants with the assistance of foreign countries had been carried out using new technologies that made their utilisation co-efficients higher.
- Third, and most important, the structure of electric power production had begun to change due to the creation of thermal power plants (Moiseyev 2000: 55).

The generation capacity of all power plants by 1970-as compared with 1960- had grown by 1.8 times and amounted to 3.375 million kW. Electric energy production reached 16.5 billion kwhr (compared with 9.1 billion kwhr in 1960) (Moiseyev 2000: 56).

During the 1970s, the electric energy sector fell further behind economic development needs. Nevertheless, from the point of view of the absolute build-up of new capacity, this period was quite favourable (Moiseyev 2000: 56). Yet the shortage of electric energy supply relative to the more rapid of expansion of national energy demand became increasingly acute. This situation led to the exploitation of equipment in excess of reasonable norms, causing disruptions of regular off-line repair schedules and eventual breakdowns (Moiseyev 2000: 57).

As of now, the energy problem is one of the most serious structural dilemmas facing the North Korea economy. A lack of fuel and energy resources and the failure of the electric energy sector to meet national economic needs are among the main factors restricting adequate use of North Korea's existing industrial capacity and blocking the normal functioning of the economy (Moiseyev 2000: 51).

North Korea's domestic energy situation needs to be considered in terms of four basic aspects:

- Supply of basic energy.
- Electric power generation.
- Electric-power transmission.
- Secondary energy usage apart from electric power (Moiseyev 2000: 51).

The DPRK's circumstances are dire along all four dimensions, and the energy problems that it confronts in all these areas are inter-related. Yet the nature of the difficulties involved is somewhat different in each area.

In terms of basic energy supply- that is, the availability of coal, hydro-electric power, oil, natural gas, and nuclear power- North Korea's energy insecurities are broadly similar to those of South Korea, Taiwan, and Japan. North Korea has, for example, no operating oil fields, although there have been some modest positive seismic surveys by Sweden's Taurus Petroleum and Singapore's Sovereign Ventures, mostly since mid-2002. For North Korea, Iran is an important traditional energy supplier, as well as political-military ally, even though it is more then 11,000 km.

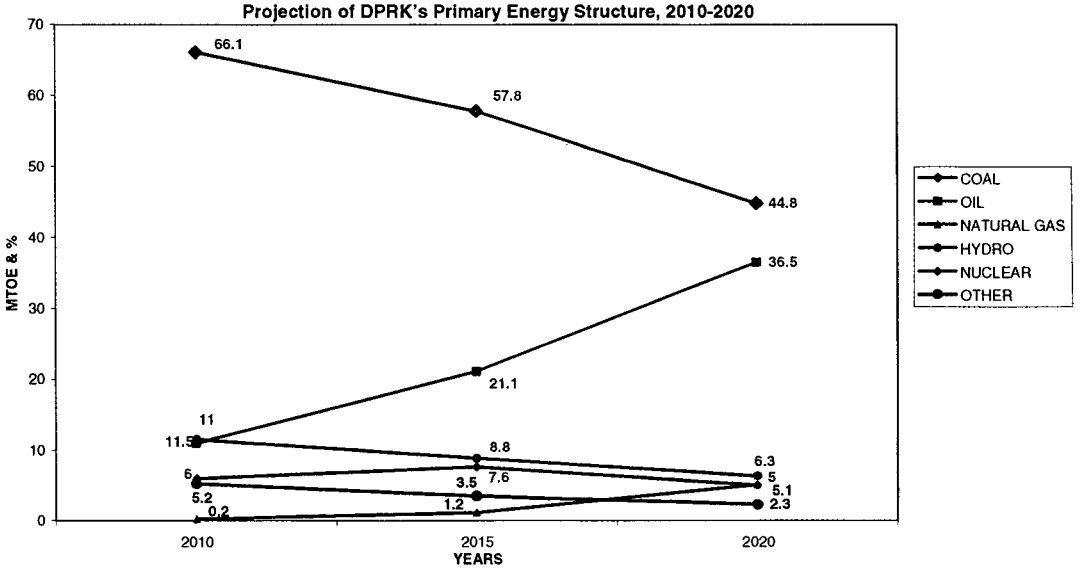
away from Pyongyang.

Electric-power generation is a second serious domestic energy problem that North Korea confronts. In 2001, hydro-electric power plants generated about 69 percent of North Korea's electricity, and thermal plants 31 percent. All except one thermal plant, which relies on the heavy fuel oil that the United States has been supplying to the North since 1995 under the Korean Peninsula Energy Development Organisation (KEDO) agreement, is coal-fired, and thus subject to the difficulties described above. As much as 85 percent of the DPRK's hydro-electric capacity has also been damaged by flooding.

Overall, as little as 20-30 percent of installed capacity for electric-power generation may actually be operable, Electric-power transmission is, as noted, a third major domestic energy supply-difficulty. North Korea's original power grid was created in Japanese colonial days, well over sixty years ago, and was decimated during the Korean War. Refurbished by the Soviet Union in the 1960s and 1970s, it has had inadequate servicing since the collapse of the USSR more than a decade ago.

The lack of spare parts, scavenging of metal (as barter for food) from remote lines in the countryside, and general physical deterioration has severely degraded the system. Power outages are thus common throughout the country, including even Pyongyang, and energy loss through inefficient transmission is enormous (Calder 1996).

Figure 4.2
Projection of DPRK's Primary Energy Structure, 2010-2020



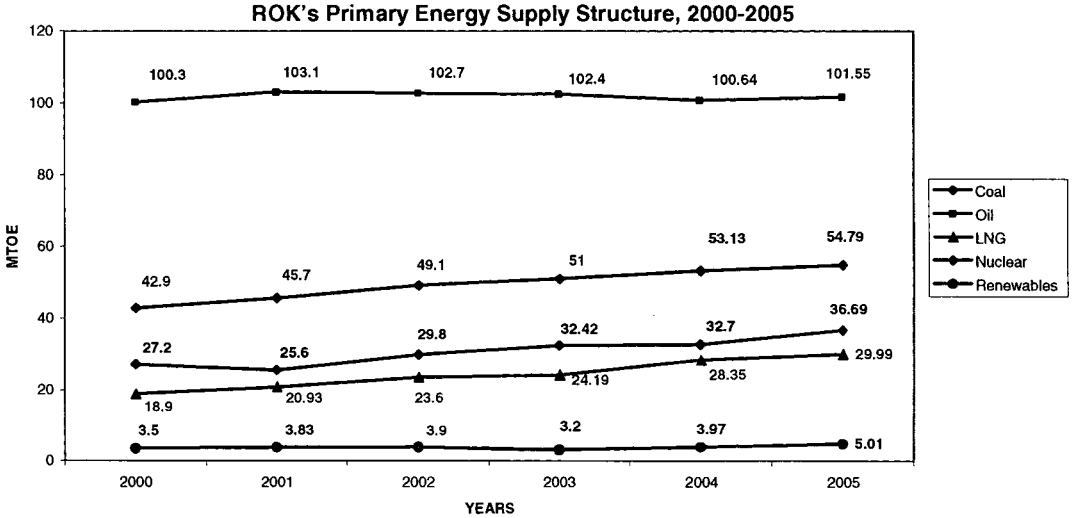
Foreign assistance to increase capacity and to modernise equipment in the country's power supply is necessary for normalisation of the situation in the electric

power sector because the DPRK lacks both the financial means and technical capability to accomplish these tasks. Also, funds and assistance to expand production in the coal- mining industry are needed (Moiseyev 2000: p.58). To escape from its energy bind, North Korea is also prospecting for oil in the seabed off the coast of Anju, but those explorations have not been productive.

South Korea- Energy Situation

Energy production is dominated by government enterprises, although privately operated coal mines and oil refineries also exist. Electric power in South Korea is provided by the Korea Electric Power Corporation (KEPCO). When KEPCO's predecessor, Korea Electric Corporation (KECO), was founded in 1961, annual power production was 1,770 million kwhr (Government of Republic of Korea 2007). Energy used in electric power generation consisted primarily of nuclear, coal, oil, and LNG (Savada and Shaw 1990).

Figure 4.3
ROK's Primary Energy Supply Structure, 2000-2005



The above graph (in Figure 4.3) illustrates the primary energy supply structure of South Korea where oil clearly dominates the consumption.

The ROK has also come to rely heavily on oil imported from the Middle East. This dependence on oil as an energy source is because of three reasons.

- First was an important, embedded historical reality. Korea had grown to global economic prominence in an era when oil was plentiful and global oil prices were steadily declining, especially when calculated in terms of a strengthening Korean Won. Economic planners and senior corporate executives found it

rational in such times to capitalise on these oil-bearish trends and to configure South Korean industry, especially during the high-growth pre–oil shock decade, in seemingly rational energy-intensive fashion.

- Second, the low and declining level of global oil prices during the 1980s and 1990s, especially when calculated in Won, together with the Korean government's policy of encouraging imported oil reliance and the growth of energy-intensive industries, gave rise to an additional, more proximate reason for Korea's strong oil reliance: the highly oil-intensive character of Korea's industrial structure. The Korean steel, shipbuilding, petrochemical, and fertilizer sectors remain among the most oil-intensive industries in the world. All continue to be important to a Korean economy that is just now making the transition to a knowledge-intensive industrial structure that neighboring Japan undertook during the 1970s and 1980s.
- Third is the fact that for many years Korea's oil demand was rising so rapidly because of Korea's automotive revolution. After the second oil shock of 1979-80, auto ownership sharply expanded, encouraged by declining oil prices in Won and co-operative Korean government-business efforts to develop a domestic auto industry. Strengthening of the Won after 1979 was especially important in propelling motorisation and expanded transport demand because consumer spending tends to be especially price sensitive (Calder 1996:10-11).

After the second oil crisis, South Korea realised that a stable supply of energy was essential for national security and steady economic growth, so it strongly promoted overseas direct development of energy sources (Eui-Soon 2004:73). At the same time to fuel the rapid industrialisation, it increased the import of energy sources and accordingly South Korea's energy dependence rate on imported sources increased continuously reaching 83.1% in 1988 from 8.6% in 1961. In 1987, South Korea's energy import amounted to $ 5.5 billion, 14% of total import and 5% of GDP, of which $ 3.2 billion was spent for oil import and $ 0.8 billion for bituminous coal (Eui-Soon 2004: 119-120). From 1975 to 1992, South Korea tripled its per capita energy consumption. Its oil demand quadrupled during 1985-95, reflecting rapid structural change in the South Korean economy, which was focused on rapid

expansion of steel, shipbuilding, petrochemical, auto and electronics industries, as it averaged nearly 8% annual growth (Manning 2005: 33).

NUCLEAR ENERGY ASPECT

Strategic reasons aside, chronic energy shortages in both North and South Korea are clearly a major reason why both halves of the peninsula have found nuclear power attractive, particularly since the oil shocks of the 1970s. North Korea, with substantial uranium reserves at Unggi Pyongsan, and Hungnam, does not even need to import the raw materials. For South Korea, which lacks indigenous uranium supplies, the burden of uranium imports is nevertheless minuscule compared with the cost and logistical difficulties that Seoul's pronounced dependence on imports of Middle Eastern oil presents.

South Korean Civilian Nuclear Programme

South Korea has an extensive nuclear energy infrastructure, and officials have long expressed an interest in establishing an independent fuel cycle capability (Pinkston 2004). The country's peaceful nuclear programme can be traced to 1950s when it established infrastructure to operate a viable nuclear programme and also became a member of the International Atomic Energy Agency (IAEA). In 1958 the Atomic Energy Law was passed and in 1959 the Office of Atomic Energy was established by the government. The first nuclear reactor to achieve criticality in South Korea was a small research unit in 1962. Ten years later construction began of the first nuclear power plant Kori-1. In the wake of first oil shock in the 1970s, South Korea moved aggressively toward nuclear power. Indeed, at a peak in 1987, nuclear power provided more than 50 percent of South Korea's power actually generated and still accounted for nearly 40 percent in 2003 (Calder 2004a).

Map 4.1

NUCLEAR POWER SITES IN SOUTH KOREA

Base Map Source

Payne (1987)

Table 4.2

NUCLEAR POWER REACTORS OPERATING IN SOUTH KOREA

Reactor	Type	Net capacity	In Operation Since
Kori 1	PWR	570 MWe	April 1978
Kori 2	PWR	630 MWe	July 1983
Wolsong 1	PHWR	635 MWe	April 1983
Kori 3	PWR	950 MWe	September 1985
Kori 4	PWR	950 MWe	April 1986
Yonggwang 1	PWR	945 MWe	August 1986
Yonggwang 2	PWR	945 MWe	June 1987
Ulchin 1	PWR	950 MWe	September 1988
Ulchin 2	PWR	950 MWe	September 1989
Yonggwang 3	PWR (Syst 80)	989 MWe	December 1995
Yonggwang 4	PWR (Syst 80)	989 MWe	March 1996
Wolsong 2	PHWR	680 MWe	July 1997
Wolsong 3	PHWR	680 MWe	July 1998
Wolsong 4	PHWR	680 MWe	October 1999
Ulchin 3	PWR (KSNP)	995 MWe	August 1998
Ulchin 4	PWR (KSNP)	995 MWe	December 1999
Yonggwang 5	PWR (KSNP)	1000 MWe	May 2002
Yonggwang 6	PWR (KSNP)	1000 MWe	December 2002
Ulchin 5	PWR (KSNP)	1000 MWe	July 2004
Ulchin 6	PWR (KSNP)	1000 MWe	August 2005

Source: NTI (2007).

Today, nuclear plants, operating in four giant nuclear clusters around South Korea, provide as much as 40 percent of total electricity actually generated in the country as a whole, and 28 percent of total capacity. This Korean commitment to nuclear power is more substantial than in most other major industrialised nations. Indeed, South Korea's reliance on nuclear power for actual power generation is the third highest in the entire world, following France and Sweden. It is double the global average (Calder 2004a). Moreover this reliance is slated to increase with a number of reactors coming on stream, thereby increasing the percentage to 47% and the share of the LNG will come down to 8. 4%.

North Korean Civilian Nuclear Programme

With an estimated four-million tons of exploitable high-quality uranium ore, North Korea began its nuclear programme in the 1960s with the help of the Soviet Union. Under the co-operation agreement concluded between the USSR and the DPRK, a nuclear research center was constructed near the small town of Yongbyon. In 1965 a Soviet IRT-2M research reactor was assembled for this center. From 1965 through 1973 fuel (fuel elements) enriched to 10 percent was supplied to the DPRK for this reactor.

In the 1970s North Korea focused on the nuclear fuel cycle including refining, conversion and fabrication. In the same period it began to build a 5 MWe research reactor, what is called as the "second reactor." In 1977 the country concluded an agreement with the IAEA, allowing the latter tc inspect a research reactor which was built with the assistance of the USSR.

In 1999 a contract to build two 1000 MWe light-water reactors was signed. The agreement is between the KEDO, the international organisation in charge of the project, and the South Korean utility KEPCO. Construction of the reactors under KEDO was suspended late in 2003, and this suspension was renewed in 2004 and 2005. The KEDO board terminated the project in May 2006. In 2005 South Korea offered 2000 MWe from the grid to North Korea.

NON-CONVENTIONAL AND RENEWABLE ENERGY RESOURCES

Nuclear energy aside, the South Korean government has taken strides on the non-conventional energy resources front too like wind power, solar power and bio-mass. Sadly, Pyongynag's fixation with nuclear energy has meant that it has not taken steps forward in this area. Following paragraphs give information on how the South Korean government has taken steps in exploring and developing the non-conventional energy resources.

- **Wind Power:** Wind energy resources are available for South Korea along coasts, on high mountains and in small islands. By the end of the year 2003, the government had installed 47 wind power generation plants with a total capacity of 18.7 MW. The government also conducted a feasibility study for the power plant using both photovoltaic and wind power in small islands which do not have access to the national electricity power grid system.

- **Solar Thermal:** Currently, low temperature solar thermal system is commercially available and medium-high solar collector systems are under development.
- **Renewable Energy and Bio-mass:** In 1993, the Waste Management Law was revised to encourage industrial complexes to use waste as a feedstock for waste heat production. Totally 106,020 TOE of biomass energy was used in 2003.
- **Clean Coal:** While technological advances to reduce emissions have made thermal power more environmentally acceptable, coal gasification projects have emerged as viable alternatives in recent years. Coal gasification is a cleanest and efficient method to produce clean fuels that can be used for power. It brings emission levels of key pollutants down near to natural gas utilisation levels (Government of Republic of Korea 2007).

The South Korean government has also launched Climate Technology Partnership (CTP) in a joint venture with the United States to implement energy efficient and renewable energy technologies in Korea. Technology implementation is supported by transferring needed technologies through private sector collaboration between Korean and international firms. The goal of CTP in Korea is to disseminate clean technologies in the areas of energy management, and methane recovery.

PROPOSAL FOR GAS PIPELINE TO THE PENINSULA

The paucity of the natural energy resources in the Korean peninsula in particular and the Northeast Asian region in general is why countries such as Japan, China and South Korea have looked at adjacent energy resource-rich regions for a possible source of oil and gas supply. Russian Far East tops the list here. The Russian Far East boasts of its vast oil and gas reserves. The absence of an infrastructure connecting the untapped reserves in remote areas to the main consuming areas of Northeast Asia, however, has not allowed Russia to be a major oil and gas supplier to Northeast Asian economies until recently. But the fact of the matter is that the development of a pipeline network will lay the ground for co-operation between the regions' key actors,

Map 4.2

PROPOSED PIPELINES TO THE KOREAN PENINSULA

Base Map Source

Harrison (2002)

furthering the chances of a Northeast Asian Energy Treaty or Community being established in the coming decade (Kensuke 2004).

Table 4.3

MAIN GAS SUPPLY SOURCES FOR NORTHEAST ASIA

Region	Field (Licensed Company)	Reserves (C1+C2)
Sakhalin Islands	Odoptu, Chaivo, Arkutun-Dagi (Sakhalin I project) Piltun-Astokskoye, Lunskoye (Sakhalin Energy Investment Corp)	485bcm + 307 mt 800bcm + 185 mt
Irkutsk	Kovyktinksoye (Russia Petroleum) Verkhnechonskoye	1,932bcm + 90 mt condensate +2.3bcm helium 280 mt
Republic of Sakha	Chayandinskoye (Sakha Republic Gov) Sredne-Botuobinskoye (Sakhaneftegas) Taas-Yuriakskoye (Sakhaneftegas) Talakanskoye (Surgutneftegas)	1240bcm + 50 mt 171bcm 114bcm 124 mt + 50bcm
Krasnoyarsk	Yurubchonskoye (Yukos) Kuyumbinskoye (Slavneft) Sobinskoye (Gazprom)	282 mt + 374bcm + 29 mt condensate 154 mt 159bcm
West Siberia	Palkliahinskoye, Bolshehetskaya (Gasprom)	3,021bcm, of which C1 751bcm, C2 596bcm, and C3 1,203bcm
Kazakhstan	Karachaganak (BG-Agip-Texaco)	1,300bcm
Turkmenistan	Shatlyskoye Dayletabad	9.2 tcm in-place, of which 4.6 tcm proven roughly 1,000bcm recoverable (est) 1,380bcm recoverable

Source: Keun-Wook Paik (2005b).

The idea of gas or crude oil pipeline in Northeast Asia till the end of the Cold War was in Northeast Asian energy expert, Keun-Wook Paik's words a mere pipe-dream (Paik 2005b: 2). What facilitated the possibility of this pipeline was the normalisation of the diplomatic relations between South Korea and China. This opened a new chapter in energy co-operation in the region. The following sources of gas can be identified for the Northeast Asian region.

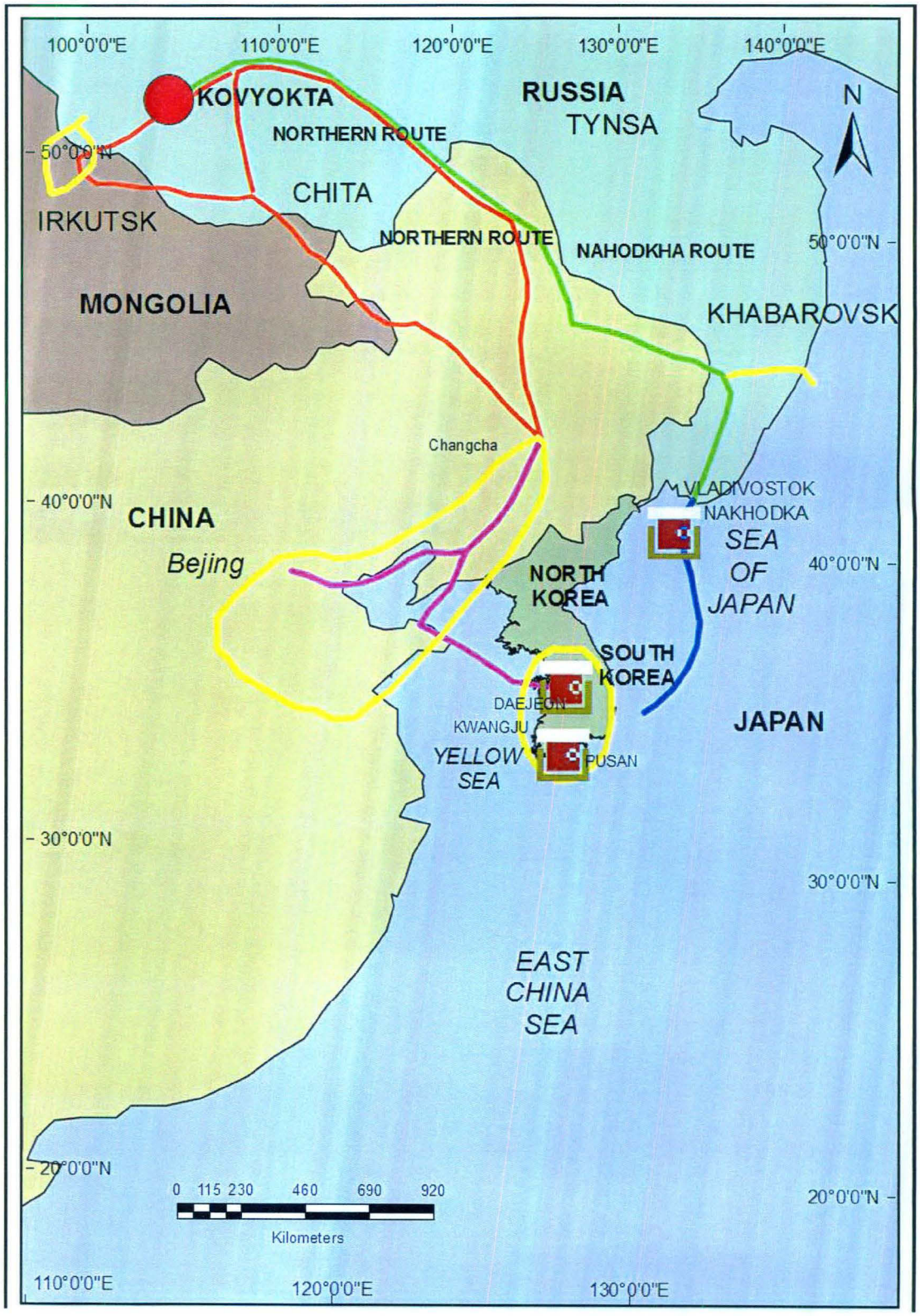
South Korea has been reviewing three major natural gas supply sources in the Russian Federation- Kovyokta gas in the Irkusk region, Chavyanandgas in the Sakha Republic, and the Sakhalin Islands gas fields. Different options have been under review for over 20 years now. Originally South Korea expected receiving gas as early as 2008. However the current view reflecting Russian/Chinese plans is that about 7 million tonnes per annum of gas could be supplied by pipeline with initial volumes flowing from 2012/13.

Kovyokta Gas Pipeline Proposal

Leading among these proposals is the proposal of pipeline originating from the Kovyokta gas field which lies in the Irkusk region of Russia and is controlled by British Petroleum. In May 1999, South Korea expressed its interest in the Sino-Russian feasibility study on the Kovyokta gas project, and its participation laid the ground for a trilateral project. The feasibility studies on this route were completed in November 2000 and November 2003 (Paik 2002: 189). China National Petroleum Corporation (CNPC) and the Russian gas company Gazprom signed a MOU in March 2006 for outlining the route, volumes and possible time table. The pipeline originating in East Siberia will terminate at Daqing in China. From Daqing an extension in the form of a sub-sea route will be built to Dalian and then South Korea. The pipeline is expected to provide 1 Bcf/d to South Korea (Puckett 2006: 13). The pipeline is expected to be nearly 5000 km. long costing some $ 9 billion (Harrison 2003: 50). South Korea's preference for this route is understandable because the route skips North Korea altogether and construction and maintenance costs would be cheaper (Paik 2005b: 9).

Map 4.3

KOVYOKTA PIPELINE ROUTE



Base Map Source

Puckett (2006)

According to Ahn and Jones (2008), despite being talked about for a decade, not much forward movement has taken place on this front because of the following reasons:

- The politics of route determination: Though routing the pipeline via North Korea and Mongolia would be cheaper, government and private sector sensitivities have resulted in proposed routes that circumvent the two countries and thus drive up the costs of any such pipeline.
- Inherent complexities of gas investments: Natural gas is intrinsically more difficult to trade than oil, and gas deals require much more confidence, guarantees, and money from investors and governments.
- Demand security: China's market is important for Kovyokta's success. Despite plans for further gas market development, however, China's reliance on cheap coal has created a soft market for higher-priced gas.
- Russia's resource nationalism: Rising oil prices have given Moscow an impetus to re-nationalise Russia's energy sector, thereby both complicating negotiations and causing investors to be wary of a Russia that could use energy as a political weapon (Ahn and Jones 2008).

The Sakhalin Pipeline

The other pipeline would originate in gas fields off the northeast coast of Sakhalin Island, controlled by ExxonMobil, and would cross directly from Russia through North Korea en route to the South. South Korea's interest in Sakhalin gas dates back to early 1994 when the Korean government and companies considered the possibility of initiating LNG supplies from the Lunskoye gas field. South Korea would be the main market for the pipeline's gas, with an expected commitment to buy 10 billion cubic meters annually. Russia would buy some for the Khabarovsk-Vladivostok region, adjacent to the pipeline route, and North Korea would seek a steadily growing share as a supplement to nuclear power (Harrison 2003: 49). The Sakhalin I pipeline would be no more than 3000 km. long, running along the east coast of Korea to its terminus near Seoul, where it would intersect with an existing South Korean gas network. It could be built within three to four years between $ 3 billion and $ 3.5 billion. Sakhalin offshore development has been discussed since the 1960s, but until

the early 1990s no real development was made - partly because of uneasy relations between the former Soviet Union and Japan, and partly because of the cost benefit analysis (Paik 2005b: 15).

However, the management of the Sakhalin I project has not shown any interest in the option of supplying gas to the Korean peninsula by pipeline via North Korea. In addition, the Kovyokta gas project cannot compete with the Sakhalin offshore gas project, as the latter is much more cost-effective if the sizeable gas markets of South Korea and southern Japan are to be supplied. In fact the distance from northern Sakhalin to Korea is around 2,700 km. and the majority of the Russian section terrain is flat. In terms of price, the Sakhalin pipeline option could be very competitive against Kovyokta project if a sizable gas market (17 bcm/y) from South Korea and southern Japan were to be offered simultaneously (Paik 2005b: 19). The former South Korea of President Roh Moo-Hyun had shown a serious interest in the option of a Sakhalin gas supply to the Korean peninsula by pipeline via North Korea. The so-called 'peace pipeline' is also supported by the United Nations.

Sakha Gas Exports to the Korean Peninsula

The initiative to export gas from East Siberia to Northeast Asia came from the Sakha Republic. As early as the 1960s the possibility of Yakutian gas exports to Japan was explored and promoted, but activities were suspended in the wake of the former Soviet Union's Afghanistan invasion in late 1979. In the late 1980s Korea's Hyundai group revived the forgotten project, and in 1995 the preliminary feasibility study on Sakha gas development, funded by Russia and South Korea was eventually implemented. However, the outcome of this study was not encouraging, and no further steps were taken. The conclusion was that Sakha gas exports to Korea were not feasible because of the remote location, harsh environment and poor economic rationale. However, the Sakha Republic now has a relatively large proven gas reserve (over 1 tcm), and this is enough to justify a long distance, trans-national pipeline (Paik 2005b: 12).

Oil Pipeline

Apart from the gas pipeline, there also has been a proposal from the Russian side to build a crude oil pipeline with an annual capacity of 80 million tones to be built from

Taishet in east Siberia to Perevoznaya near Vladivostok and the eastern port of Nakhodka. However, there has been no forward movement yet on this front.

PROSPECTS FOR INTER-KOREAN ENERGY CO-OPERATION

The coal, gas, nuclear, and power-grid issues considered here-all largely relating to electric power figure prominently in the current talk on North Korean de-nuclearisation. They are all substantively important, especially for addressing Northeast Asia's energy insecurities and reducing regional energy costs. In July 2005, in what is probably the most important concrete policy proposal on North-South energy issues since the Agreed Framework, the ROK proposed that it would provide two GWs of electricity to the DPRK, beginning in 2008. The South's proposal constituted an important proposal because it tested the North's sincerity in fulfilling its set of obligations in return for concrete access to energy. The important point of departure for South's proposal is the provision for power generating facilities. While the Agreed Framework provided these facilities in South Korea, the 2005 proposal situated them in the North itself. More importantly it was the first time that a holistic view was taken of both the Korea's energy security. If realised, the ROK proposal could be a pivotal step toward both North-South and broader regional confidence building measure (CBM).

Most of the pipeline proposals discussed above focus on South Korea. However, North Korea too is pinning its hopes for economic salvation on these pipeline projects that would bring Russian natural gas to energy-starved North Korea. Pyongyang would not only receive royalties for letting the pipelines pass through its territory but could also tap into them to supply fertilizer plants and power stations (Harrison 2003: 49). Even a relatively small volume of oil supply to DPRK would make a big difference. Right now little or no gas is used in North Korea. Therefore if Pyongyang is to reap the benefits of this regional gas pipeline, it will be necessary to introduce gas for the consumption of the population in North Korea which will then make a compelling argument to augment the energy infrastructure in North Korea for the purpose of laying down the pipeline (Ajemian 2007: 333).

South Korea is ideally positioned to help revitalise the sluggish energy industry in North Korea. The prospect of South Korean help for North Korea's electricity shortage was discussed at the June 2000 summit, and North Korea has been seeking electricity from South Korea since then. A linkage between the electric grids

of the two Koreas is one possibility, but it would be of limited immediate value due to the North's poor transmission infrastructure. At present, South Korea has not agreed to supply the North with electricity from its own transmission grid. Also in terms of the LPG, business in South Korea has already reached saturation stage and urgently needs to find a new market for the industry's survival. LPG supply to North Korea offers a very attractive opportunity for market development.

Energy co-operation between South and North Korea is a very real possibility. Unlike the Kim Dae-Jung government which focused on East Siberian gas supply and Sakhalin LNG supply to South Korea, the Roh Moo-Hyun government showed a keen interest in Sakhalin pipeline gas to the Korean peninsula. The 'gas for peace' formula as it was called however came to a halt after North's surprise nuclear test in 2006. If the current plan for North Korea de-nuclearisation succeeds then there is a real chance that gas for peace formula could be a real alternative to the KEDO project. At present, the DPRK authorities are not willing to change their stance towards the KEDO project and to accept the pipeline gas option. However it is likely that they will take the pipeline gas option seriously once the nuclear crisis has been permanently settled.

The role of KEDO is important in this regard. Even though as of now, the pipelines crisscrossing the Korean peninsula are conceptualised as an alternative to the KEDO, the significance of KEDO in consolidating the comprehensive security relationships amongst the US allies in Northeast Asia cannot be ruled out.

GEOPOLITICS OF ENERGY ON THE PENINSULA

For many economists, energy constitutes a very key element of economic growth. Therefore the booming economies of Northeast Asia have come to view the issues related to energy from the paradigm of national security. Any issue which has the capacity to disrupt their energy supplies therefore are taken as a national security concern. Same approach has therefore come to dominate their thinking of energy security. Moreover, the rising worldwide demand for gas has come to shape relations between the major consuming nations and their principal suppliers. A key factor in the geopolitics of natural gas is the heavy concentration of reserves in a relatively small number of producing countries. The top 5 gas producers of the world- Russia, Iran, Qatar, Saudi Arabia and the United Arab Emirates-hold nearly 67 percent of the world's proven oil reserves. This means, of course, that these countries and

particularly Russia are in a very strong position to control the global flow of gas and to influence market forces (Klare 2006).

Russia already supplies a large share of Europe's natural gas, and when new pipelines are constructed, it will be capable of supplying vast amounts to China, Korea and Japan. In Europe, for instance, Russia has exploited this situation to its political advantage. In December 2000, Russia temporarily suspended gas deliveries to Georgia in a move that was interpreted by many strategic analysts as punishment for the failure of Georgian leaders to defer to Russia on key regional issues. The recent blockage of gas to Ukraine can be seen as another instance of the same tactic (Klare 2006).

Much more attractive for the Koreans is the Sakha gas pipe-line which will be purely Korea-centric. Since 1989, South Korea has been an active player with respect to the Sakha gas reserves. Even more attractive pipeline for North Korea is the Sakhalin pipe-line. Pyongyang genuinely fears that in a probable situation of explosion in China's energy demand, Beijing will not allow the Kovyokta gas go to Korea at all. Therefore, Sakhalin route is preferred by North Korea (Calder 2004a).
The Roh Moo-Hyun government during its initial period paid special attention to Sakhalin pipeline gas option for the settlement of the DPRK nuclear crisis however the US administration did not show its serious interest in accepting the formula of DPRK's disposal of nuclear in return for economic and energy aid.

It is worth noting that the North-South Korea dialogue in June 2000 offered an opportunity for both Koreas to discuss the pipeline routes from China and Russia. In early 2001 Kogas (the main Korean gas agency) proposed that the DPRK authorities look into the possibility of laying a gas pipeline from the Kovyokta gas field through North Korea. The relevant document was sent to the DPRK government in early February 2001, and a Kogas delegation led by Jong-Sool Kim, then a senior Vice President of Kogas, visited Pyongyang in September 2001. A proper feasibility study on the DPRK section was not possible as the DPRK authorities again demanded that the South Korean government make an advanced commitment that the pipeline would not bypass the DPRK's territory a demand which could not be accepted.

In many ways, the 1994 Agreed Framework can be characterised as the first energy security deal aimed at North Korea. As the analysis in the previous chapter has shown the deal envisaged energy security for North Korea in the form of KEDO. In return for the US commitment to build two Light Water Reactors (LWRs) by a target

date of 2003 and to provide 500,000 tons of oil annually pending the completion of the reactors, North Korea was supposed to disable its nuclear programme (Harrison 2003: 48). However, the operational dynamics and the geopolitical rivalries made that agreement futile and North Korea was back at pursuing the nuclear ambitions. The reactor project did not go beyond the preparatory stage. The pipeline proposals can prove to be a viable alternative to the schema put under the 1994 agreement. Kent Calder (1996) is of the view that KEDO needs to be fundamentally transformed, with due consideration for the sunk costs and the residual benefits involved (Calder 1996: 19).

Substantial economic incentives to energy co-operation among the countries of Northeast Asia can lead to integration of North Korea in the various multilateral frameworks. More than that the commercial potential for cross-border energy projects can be linked to overall diplomatic geopolitical solutions for the region is strong (Hartley *et al* 2006: 57-58). What is required is political initiative to take a step forward.

CONCLUSION

In a conflict-prone, unstable region like Northeast Asia, energy can prove to be a double-edged sword. Rising energy demand can create a sense of insecurity and can also propel nations to work closely on energy issues. Nonetheless, the possibility of geopolitical rivalries surfacing on the issues of energy is more prominent than the possibility of intensive energy co-operation. This can have potentially devastating consequences for the economic growth of the region. Therefore, attempts need to be made to evolve co-operation on energy issues like gas pipelines and regional power grid network. The dire energy situation of North Korea clearly shows how much Pyongyang can gain from this energy co-operation. More importantly, the implication of an intensive gas or crude oil energy network would be a more engaged and open North Korea. This would clearly transform the geopolitical realities of the Northeast Asian region. Energy might also play a key role in finally creating true a community among the fractious nations along the Northeast Asian arc of crisis (Calder 1996: 14).

CHAPTER

5 CONCLUSION

CHAPTER FIVE

CONCLUSION

Forty two years after the Korean War ended, the two Koreas still face each other across a heavily fortified De-Militarised Zone (DMZ), shaped by an errant decision fifty years ago to divide their country and by the civil war that followed. The Korean War itself solved nothing except to make another war an impossible route to re-unification, but it did solidify the two power blocks in Northeast Asia which to date Republic of Korea (ROK) and Democratic People's Republic of Korea (DPRK) remain committed to even in the post-Cold War world. Yet around the peninsula much has changed.

Since 1980s, Northeast Asia has come to enjoy one of the highest rates of economic growth in the world. Powered by the three booming economies in tow-South Korea, China and Japan, the region has undergone massive economic transformation. However the peninsula remains stuck in an era passed long ago. Recently, there has been some movement to ease the security tensions in the peninsula. As early as last year, North Korea agreed to give up its nuclear weapons on the condition that the relations between Washington and Pyongyang normalise. Yet, analysts are sceptical of the North Korean de-nuclearisation moving forward given what happened to the 1994 Agreed Framework which promised a similar outcome.

THE NORTH KOREAN DE-NUCLEARISATION PROCESS

According to the action plan released on February 13, 2007 in Beijing after the conclusion of the latest round of Six Party Talks, the DPRK agreed to halt its nuclear programme. Many strategic experts expressed doubts over Pyongyang's move citing North Korea's poor record in following its obligations. Moreover, dismantlement was not negotiated, and nuclear weapons too have not been discussed (Pritchard 2007: 185). Yet, officials in Beijing and Seoul, in particular, have been optimistic that North Korea will indeed move down the path of de-nuclearisation.

Framework of the Action Plan

After the October 2006 nuclear test, Pyongyang had received much flak from the international community for the violation of global non-proliferation norms. The

international community demanded an immediate halt to Pyongyang's nuclear programme. Pyongyang was adamant that unless it received energy and food aid, it would not shut down its nuclear reactors. This set the background for the fifth round of the Six Party talks being held in Beijing in February 2007. The Six Party talks itself had hit the deadlock for seventeen months because of the disagreements between the United States, Japan on one hand and South Korea, China and Russia on the other.

After the conclusion of the fifth round of the Six Party Talks, the five powers and DPRK came out with a joint statement by which DPRK agreed to "shut down and seal for the purpose of eventual abandonment the Yongbyon nuclear facility, including the reprocessing facility and invite back the International Atomic Energy Agency (IAEA) personnel to conduct all necessary monitoring and verifications as agreed between IAEA and DPRK." DPRK and the United States also agreed to embark upon normalisation of their relations by resolving pending bilateral issues. In return, DPRK was to receive 50,000 tons of heavy fuel oil as a part of emergency energy assistance. In addition, the US agreed to the release of some $25 million in North Korean assets held at the Macao-based Banco Delta Asia, which were frozen earlier. All these actions were to be implemented within sixty days of the agreement. The action plan also established five working groups to deal with the issues of de-nuclearisation of the Korean peninsula, normalisation of the DPRK-US relations, normalisation of the DPRK-Japan relations, economy and energy co-operation and Northeast Asia peace and security mechanism. Officials in Washington, Beijing, Moscow and Tokyo hailed the action plan as a first step towards a nuclear weapons-free Korean peninsula. Pyongyang was also supposed to submit a list of its nuclear programmes by the end of 2007.

Subsequent Developments

The sixth round of Six Party talks held in March 2007 was abandoned after the North Korean delegation refused to move any further until Pyongyang received the US $ 25 million which were frozen by the US. Therefore, the sixty day deadline which was outlined in the February 13 action plan could not be met. On July 14, 2007 Pyongyang announced that it had shut down the nuclear facilities at Yongbyon, after receiving the fuel aid from South Korea. This announcement was subsequently verified by the IAEA inspectors. The next round of talks held in July and September 2007 reiterated the steps to be taken as per the February 13 action plan.

According to the action plan, Pyongyang was supposed to submit a list of its nuclear programmes by the end of 2007 but that deadline was missed by North Korea. Although US, South Korea and Japan expressed concern and disappointment over the delay, China sough to allay these concerns by saying that the de-nuclearisation was 'going smoothly'. Russia too said that it was not surprised over the delay because decommissioning the nuclear installations was a complex technical process and removing the fuel rods from the reactor could take several months. The United States had already announced that it wanted North Korea to provide a complete declaration of its nuclear programmes before a new government led by President-elect Lee Myung-bak took charge on February 25. However Pyongyang sought to shirk the responsibility off its shoulders by blaming the United States for the delay. It said that Washington did not honour its commitment of removing North Korea from the list of states sponsoring terrorism as well as stop applying the 'Trading with the Enemy Act' which restricts trading with the countries hostile to US.

On June 26, 2008, North Korea submitted a declaration regarding its nuclear weapons programme. In a symbolic move it also destructed cooling tower at the Yongbyon complex. While the steps taken by North Korea were important ones, it is still a long way to go before it gives up its programme completely.

Problems with the February 13 Action Plan[1]

Many strategic experts doubt the trust reposed on Pyongyang in carrying forward the de-nuclearisation. Indeed the 1994 Agreed Framework signed between the US and North Korea too was of a similar nature where Pyongyang had agreed to freeze and eventually dismantle its nuclear weapons programme in return for fuel aid to make up for the lost energy production. As seen in third chapter Pyongyang had defected from these obligations. Hence, the question that many analysts are asking is whether North Korea has really made a strategic decision to give up the nuclear deterrent. Secondly, the February 13 action plan also shows that the earlier US approach seeking an immediate and complete disarmament has been replaced by the pursuit of gradual and incremental disarmament.

According to the former arms control official in the Clinton administration, Gary Samore, although North has suspended the Yongbyon nuclear facility, the plan

[1] Much of the argument here is taken from Patil and Verma (2007).

did not guarantee permanent disablement. So, whatever measures that North Korea takes "for the purpose of eventual abandonment of the Yongbyon nuclear facility" (as the plan says) are completely reversible.

Moreover, that eventual declaration of all nuclear programmes from North Korea will also be suspected because of its past activities. In particular, the US, Japan and South Korea will be suspicious of whether Pyongyang has declared all its nuclear assets or it has hidden something about its Highly Enriched Uranium (HEU) programme. This is because a considerable amount of evidence is available on Pyongyang's plutonium production programme as well as the facilities involved but relatively little is known about the HEU programme. The US and other parties expect North Korea to include the HEU programme on its list.

Another problem that is clearly evident in the February 13 action plan and the subsequent developments is that de-nuclearisation of North Korea is linked implicitly to the gradual normalisation of the DPRK-US and DPRK-Japan relations. This implies that unless there is a tangible movement forward in the normalisation these of relations, Pyongyang would cling on to its nuclear weapons programme. As Samore points out, the final de-nuclearisation is linked to broader and more complicated political issues, such as normalisation of Washington-Pyongyang ties and the signing of peace treaty to formally the end the Korean War. That in turn creates a vicious circle, further accentuated by the February 13 action plan. US will not normalise the ties with Pyongyang unless the latter gives up its nuclear option and Pyongyang will not give up that option unless Washington normalises ties. Therefore, this process is taking us towards a situation where two parallel events will have to unfold simultaneously- on the one hand the process of de-nuclearisation and on the other the process of normalisation. However both these processes are quite fragile.

US, Japan and South Korea also expect North Korea to reveal its true involvement in exporting the nuclear technology to other countries which North Korea probably will not reveal fully. As seen in third chapter North Korea is suspected of involvement in nuclear trade with Syria, Pakistan and even in Iran.

And yet despite all this the ultimate question that continues to linger in the minds of many strategic experts is whether Pyongyang has made any strategic decision to give up the nuclear option. For long, the nuclear weapons programme has been used by the regime in Pyongyang as a bargaining chip. Blackmailing the international community and particularly South Korea, Japan and the United States by

using its nuclear programme is what the regime in Pyongyang has done until now despite each time accepting the set of obligations, first in 1985, then in 1994 and now in 2006. Nuclear programme remains a trump card for Pyongyang for the survival of the regime. So in all probability, Pyongyang would like to maintain a small nuclear deterrent against the United States' military might and simultaneously garner more and more aid and humanitarian assistance from South Korea and Japan by divesting some nuclear capability. This logic is built within the February 13 action plan itself.

Given the fact that in the past North Korea has reneged on its promises, the concerned powers have to ensure that North does follow what it has agreed to. The first step in that direction would be ensuring a credible declaration on the part of Pyongyang which includes the exact amount of Plutonium and the HEU that it possesses. Although the implementation of the action plan seems a protracted process, it is no small achievement on the part of five powers that at least Pyongyang has been brought to the negotiating table and terms for its de-nuclearisation have been set. However, it is equally true that North Korea will try to delay this process as much as possible and therefore the international community has to have patience in dealing with the Pyongyang regime notwithstanding its diatribes (Crail 2008).

The current agreement is only a stop-gap arrangement as the real movement to de-nuclearise North Korea would take place only in the second phase when North Korea freezes the nuclear programme. The negotiations in this phase are expected to be tough where Pyongyang would have to give not only its future nuclear weapons programme but also whatever weapons it has produced (Rajagopalan 2007).

SECOND SUMMIT OF THE TWO KOREAS

However there are certain other trends in the inter-Korean politics which herald a promise that eventually there will be a change on the peninsula. In August 2007, the leaders of the two Koreas met for the second time since the peninsula's division after World War Second. The summit intended to capitalise on the progress in Pyongyang's nuclear disarmament to revive their historic reconciliation. The then South Korean president, Roh Moo-Hyun travelled to North Korea to meet his counterpart, the North Korean leader Kim Jong Il (Herman 2007). The summit declaration stipulated that, "The South and the North both recognize the need to end the current armistice regime and build a permanent peace regime." (Jeung 2007: 1). Their major differences on how to end the armistice agreement notwithstanding, it is

clear that both the Koreas have begun to explore ways of working together and evolve peaceful co-existence and ultimately pave the way for re-unification.

As a result of that summit, in December 2007, both the countries began a regular freight train service across their heavily armed border, carving another symbolic step in their reconciliation.[2] The summit had announced a number of joint projects. Many analysts noted the emphasis of Seoul to build an economic community with North Korea as a way to reduce military tension and narrow the huge wealth gap between the two countries before achieving an eventual re-unification. The two sides have also agreed to jointly repair North's dilapidated roads in order to improve the connectivity between the two nations.

CONCLUSION

An account of the last sixty years or so on the Korean peninsula suggests that even though the two Koreas have began to tread the path of reconciliation and eventual re-unification very carefully, the security environment on the peninsula and the policies of the external powers particularly the United States do little to reassure both the Koreas for a peaceful settlement of disputes. Resistance to unification has been very deep, and the antagonisms between the divided entities substantial. There has been no serious attempt to overcome these divisions up to now. Yet, on the other hand, Korean nationalism is a very strong force and the sense that one day these two countries will be re-unified is a potent element in the mentalities of the populations and their political leaders (Wallerstein 2007: 10).

This research work had begun with two hypotheses. The first one concerned with the persistence of the Cold War atmosphere and geopolitics over the energy resources pushing the peninsula towards more instability. The second hypothesis was that the role of the United States has increased the friction between North Korea and South Korea. In true sense of Karl Popper's scientific method, both of these hypotheses have been falsified.[3] An account of the geopolitics of nuclear and other

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[2] The train service also holds enormous strategic importance for North Korea. Firstly, linkage with China, Russia, and the European Community would allow it to become an important trans-national hub. Secondly, the idea of North-South joint efforts in international transportation does not seem to be at odds with the North Korean policies on relations with the South and re-unification. Thirdly, implementation of this cross-border rail line would result in upgrading of the entire decrepit DPRK rail network. Fourthly, Pyongyang would also be able to accumulated revenue from transit fees. See Bulychev (2006).

[3] For more on falsification, see Popper (2004).

energy resources of Korean peninsula lends credence to the argument that although the Cold War has ended the Cold War mentality remains on the peninsula. Therefore the competition over energy resources has the potential to cause instability in the region. Moreover, the North Korean nuclear programme till the time it exists will constitute a pivotal point of tension on the peninsula, particularly for the United States. Likewise the fact is that although, South Korea has transformed from its Cold War mindset of perceiving the North as a threat, other players in the region have not done so. In fact, the North Korean policy that the South has adopted for the past decade could be defined as an 'unconditional engagement policy toward the North'. This indicated that the South Korean government has so far seen the North as one to engage rather than be cautious of (Kim 2008: 1). This policy adopted by Seoul has also resulted in cracks within the South Korea-US alliance. Washington has unequivocally adopted the view that unless Pyongyang mends its ways, it is very difficult for the US or even Japan to give up their misgivings about North. Therefore the role of the Untied States has caused friction between the two Koreas.

In more ways than one however, the current perception of North is shaped by nothing else but by its own acts. Its defection from the 1994 Agreed Framework is a case in point. Yet Seoul has to cling on to its policy of unconditional engagement with North in order to take the relationship forward. The international community can hope that wise sense will prevail upon the leadership in North to respond positively to the South Korean gestures and not complicate the relationship with its belligerent acts. With its economic strength vastly surpassing the North, South has to adopt the role of elder brother and accommodate the tantrums of the younger brother- the North. The geopolitics of the region is such that US and Japan particularly US will continue to harbour misgivings about Pyongyang, but Seoul has to take the relationship forward.

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APPENDICES

APPENDIX I

AGREED FRAMEWORK BETWEEN THE UNITED STATES OF AMERICA AND THE DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA

Geneva, October 21, 1994

Delegations of the governments of the United States of America (US) and the Democratic People's Republic of Korea (DPRK) held talks in Geneva from September 23 to October 21, 1994, to negotiate an overall resolution of the nuclear issue on the Korean Peninsula.

Both sides reaffirmed the importance of attaining the objectives contained in the August 12, 1994 Agreed Statement between the US and the DPRK and upholding the principles of the June 11, 1993 Joint Statement of the US and the DPRK to achieve peace and security on a nuclear-free Korean peninsula. The US and the DPRK decided to take the following actions for the resolution of the nuclear issue:

I. Both sides will cooperate to replace the DPRK's graphite-moderated reactors and related facilities with light-water reactor (LWR) power plants.

1) In accordance with the October 20, 1994 letter of assurance from the US President, the US will undertake to make arrangements for the provision to the DPRK of a LWR project with a total generating capacity of approximately 2,000 MW(e) by a target date of 2003.

- The US will organize under its leadership an international consortium to finance and supply the LWR project to be provided to the DPRK. The US, representing the international consortium, will serve as the principal point of contact with the DPRK for the LWR project.
- The US, representing the consortium, will make best efforts to secure the conclusion of a supply contract with the DPRK within six months of the date of this Document for the provision of the LWR project. Contract talks will begin as soon as possible after the date of this Document.

- As necessary, the US and the DPRK will conclude a bilateral agreement for cooperation in the field of peaceful uses of nuclear energy.

2) In accordance with the October 20, 1994 letter of assurance from the US President, the US, representing the consortium, will make arrangements to offset the energy foregone due to the freeze of the DPRK's graphite-moderated reactors and related facilities, pending completion of the first LWR unit.

- Alternative energy will be provided in the form of heavy oil for heating and electricity production.
- Deliveries of heavy oil will begin within three months of the date of this Document and will reach a rate of 500,000 tons annually, in accordance with an agreed schedule of deliveries.

3) Upon receipt of US assurances for the provision of LWR's and for arrangements for interim energy alternatives, the DPRK will freeze its graphite-moderated reactors and related facilities and will eventually dismantle these reactors and related facilities.

- The freeze on the DPRK's graphite-moderated reactors and related facilities will be fully implemented within one month of the date of this Document. During this one-month period, and throughout the freeze, the International Atomic Energy Agency (IAEA) will be allowed to monitor this freeze, and the DPRK will provide full cooperation to the IAEA for this purpose.
- Dismantlement of the DPRK's graphite-moderated reactors and related facilities will be completed when the LWR project is completed.
- The US and the DPRK will cooperate in finding a method to store safely the spent fuel from the 5 MW(e) experimental reactor during the construction of the LWR project, and to dispose of the fuel in a safe manner that does not involve reprocessing in the DPRK.

4) As soon as possible after the date of this document US and DPRK experts will hold two sets of experts talks.

- At one set of talks, experts will discuss issues related to alternative energy and the replacement of the graphite-moderated reactor program with the LWR project.
- At the other set of talks, experts will discuss specific arrangements for spent fuel storage and ultimate disposition.

II. The two sides will move toward full normalization of political and economic relations.

1) Within three months of the date of this Document, both sides will reduce barriers to trade and investment, including restrictions on telecommunications services and financial transactions.

2) Each side will open a liaison office in the other's capital following resolution of consular and other technical issues through expert level discussions.

3) As progress is made on issues of concern to each side, the US and the DPRK will upgrade bilateral relations to the Ambassadorial level.

III. Both sides will work together for peace and security on a nuclear-free Korean peninsula.

1) The US will provide formal assurances to the DPRK, against the threat or use of nuclear weapons by the US

2) The DPRK will consistently take steps to implement the North-South Joint Declaration on the Denuclearization of the Korean Peninsula.

3) The DPRK will engage in North-South dialogue, as this Agreed Framework will help create an atmosphere that promotes such dialogue.

IV. Both sides will work together to strengthen the international nuclear non proliferation regime.

1) The DPRK will remain a party to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and will allow implementation of its safeguards agreement under the Treaty.

2) Upon conclusion of the supply contract for the provision of the LWR project, ad hoc and routine inspections will resume under the DPRK's safeguards agreement with the IAEA with respect to the facilities not subject to the freeze. Pending conclusion of the supply contract, inspections required by the IAEA for the continuity of safeguards will continue at the facilities not subject to the freeze.

3) When a significant portion of the LWR project is completed, but before delivery of key nuclear components, the DPRK will come into full compliance with its safeguards agreement with the IAEA (INFCIRC/403), including taking all steps that may be deemed necessary by the IAEA, following consultations with the Agency with regard to verifying the accuracy and completeness of the DPRK's initial report on all nuclear material in the DPRK.

Robert L. Gallucci

Head of Delegation of the United States of America, Ambassador at Large of the United States of America

Kang Sok Ju

Head of the Delegation of the Democratic People's Republic of Korea, First Vice Minister of Foreign Affairs of the Democratic People's Republic of Korea

APPENDIX II

NORTH KOREA-DE-NUCLEARISATION ACTION PLAN

Beijing, February 13, 2007

Initial Actions for the Implementation of the Joint Statement

The Third Session of the Fifth Round of the Six-Party Talks was held in Beijing among the People's Republic of China, the Democratic People's Republic of Korea, Japan, the Republic of Korea, the Russian Federation and the United States of America from 8 to 13 February 2007.

Mr. Wu Dawei, Vice Minister of Foreign Affairs of the PRC, Mr. Kim Gye Gwan, Vice Minister of Foreign Affairs of the DPRK; Mr. Kenichiro Sasae, Director-General for Asian and Oceanian Affairs, Ministry of Foreign Affairs of Japan; Mr. Chun Yung-woo, Special Representative for Korean Peninsula Peace and Security Affairs of the ROK Ministry of Foreign Affairs and Trade; Mr. Alexander Losyukov, Deputy Minister of Foreign Affairs of the Russian Federation; and Mr. Christopher Hill, Assistant Secretary for East Asian and Pacific Affairs of the Department of State of the United States attended the talks as heads of their respective delegations.

Vice Foreign Minister Wu Dawei chaired the talks.

I. The Parties held serious and productive discussions on the actions each party will take in the initial phase for the implementation of the Joint Statement of 19 September 2005. The Parties reaffirmed their common goal and will to achieve early denuclearization of the Korean Peninsula in a peaceful manner and reiterated that they would earnestly fulfill their commitments in the Joint Statement. The Parties agreed to take coordinated steps to implement the Joint Statement in a phased manner in line with the principle of "action for action".

II. The Parties agreed to take the following actions in parallel in the initial phase:

The DPRK will shut down and seal for the purpose of eventual abandonment the Yongbyon nuclear facility, including the reprocessing

facility and invite back IAEA personnel to conduct all necessary monitoring and verifications as agreed between IAEA and the DPRK.

The DPRK will discuss with other parties a list of all its nuclear programs as described in the Joint Statement, including plutonium extracted from used fuel rods, that would be abandoned pursuant to the Joint Statement.

The DPRK and the US will start bilateral talks aimed at resolving pending bilateral issues and moving toward full diplomatic relations. The US will begin the process of removing the designation of the DPRK as a state-sponsor of terrorism and advance the process of terminating the application of the Trading with the Enemy Act with respect to the DPRK.

The DPRK and Japan will start bilateral talks aimed at taking steps to normalize their relations in accordance with the Pyongyang Declaration, on the basis of the settlement of unfortunate past and the outstanding issues of concern.

Recalling Section 1 and 3 of the Joint Statement of 19 September 2005, the Parties agreed to cooperate in economic, energy and humanitarian assistance to the DPRK. In this regard, the Parties agreed to the provision of emergency energy assistance to the DPRK in the initial phase. The initial shipment of emergency energy assistance equivalent to 50,000 tons of heavy fuel oil (HFO) will commence within next 60 days.

The Parties agreed that the above-mentioned initial actions will be implemented within next 60 days and that they will take coordinated steps toward this goal.

III. The Parties agreed on the establishment of the following Working Groups (WG) in order to carry out the initial actions and for the purpose of full implementation of the Joint Statement:

- Denuclearization of the Korean Peninsula
- Normalization of DPRK-US relations
- Normalization of DPRK-Japan relations
- Economy and Energy Cooperation
- Northeast Asia Peace and Security Mechanism

The WGs will discuss and formulate specific plans for the implementation of the Joint Statement in their respective areas. The WGs shall report to the Six-Party Heads of Delegation Meeting on the progress of their work. In principle, progress in one WG shall not affect progress in other WGs. Plans made by the five WGs will be implemented as a whole in a coordinated manner.

The Parties agreed that all WGs will meet within next 30 days.

IV. During the period of the Initial Actions phase and the next phase - which includes provision by the DPRK of a complete declaration of all nuclear programs and disablement of all existing nuclear facilities, including graphite-moderated reactors and reprocessing plant - economic, energy and humanitarian assistance up to the equivalent of 1 million tons of heavy fuel oil (HFO), including the initial shipment equivalent to 50,000 tons of HFO, will be provided to the DPRK.

The detailed modalities of the said assistance will be determined through consultations and appropriate assessments in the Working Group on Economic and Energy Cooperation.

V. Once the initial actions are implemented, the Six Parties will promptly hold a ministerial meeting to confirm implementation of the Joint Statement and explore ways and means for promoting security cooperation in Northeast Asia.

VI. The Parties reaffirmed that they will take positive steps to increase mutual trust, and will make joint efforts for lasting peace and stability in Northeast Asia. The directly related parties will negotiate a permanent peace regime on the Korean Peninsula at an appropriate separate forum.

VII. The Parties agreed to hold the Sixth Round of the Six-Party Talks on 19 March 2007 to hear reports of WGs and discuss on actions for the next phase.