

# Transboundary Water Cooperation in the Tumen River Basin: A Focus on the Greater Tumen Initiative

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| Abstract |

This study evaluates the development of regional cooperation for socio-economic development in the Tumen River Basin focusing on interactions between the riparian (North Korea, China and Russia) and neighboring countries (South Korea, Mongol and Japan) since 1991. Particular attention is given to the Greater Tumen Initiative in order to analyze the possibility of shared benefits in the river basin and pull out policy implications. The Benefit Sharing approach is deployed to argue that shared benefits through cooperation can be larger than benefits through unilateral development. Regional development efforts were first made by UNDP in 1991 in the form of the Tumen Regional Development

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Program (TRADP), and the initiative was transformed into GTI in 2005. Since then, the path of the GTI has been bumpy due to the withdrawal of North Korea in 2009, a lack of leadership, and little investment and funding. Nevertheless, this program has served as a useful platform in which the countries in the region have shared their common interests. The program has helped the establishment of peace and stability in East Asia, and a series of transport, trade and investment, energy, tourism and environment projects have played a pivotal role in laying the ground for joint development in the region. The GTI can be a good candidate for regional cooperation platform that will ease down the tensions triggered by missile tests and nuclear weapon development of North Korea and function as a foundation to boost up regional cooperation for socio-economic development.

- Key words: Transboundary Water Cooperation, Greater Tumen Initiative, Benefit Sharing, Regional Cooperation Platform, Socio-Economic Development

## I. Introduction

This study assesses the development of regional cooperation for sustainable development in the Tumen River Basin between the riparian countries (North Korea, China, and Russia) and the neighboring countries (South Korea, Mongolia, and Japan) since the early 1990s. Special attention is placed on the Greater Tumen Initiative, which was initially launched by UNDP in 1991 under the name of the Tumen River Area Development Program (TRADP).

The benefit sharing approach is deployed as an analytical framework to demonstrate that shared benefits between the riparian countries can be

larger than benefits through unilateral development by a riparian country. The approach helps evaluate the way that these countries have collaborated to achieve maximum socioeconomic and environmental benefits via projects in the fields of transport, trade and investment, energy, tourism, and environmental protection. In addition, such collective and continuous efforts can engender common well-being and prosperity in East Asia.

The Tumen River Basin has been regarded as an economically and environmentally important area, which will become a hub for transport, trade, and resource development, and need transboundary cooperation thanks to a high degree of biodiversity and ecosystems. UNDP embarked on the TRADP project in 1991 for regional cooperation and invited South Korea, North Korea, China, Russia, and Mongolia to participate. The TRADP was transformed into the Greater Tumen Initiative (GTI) in 2005, and collective efforts for regional cooperation have continued since then. However, the future path of the GTI appears to be winding and bumpy thanks to a lack of leadership, and little funding. In addition, the sluggish development of the TRADP disappointed North Korea, and international sanctions against the country's reckless behavior for its nuclear weapon programs culminated in the withdrawal of North Korea from the GTI. This is one of the most fundamental challenges the GTI should overcome now.

In 2018, South Korea announced the New Northern Policy, which was aimed at promoting economic ties with Northeast Asian countries, such as Russia, Mongolia and Kazakhstan. China has recently promoted international border trade with North Korea and Russia, primarily led by Jilin, Liaoning, and Heilongjiang Provinces and established the Chang-Ji-Tu (Changchun-Jilin-Tumen Areas) Development Plan for creating a special economic development zone. These circumstances may invigorate the GTI, which has been dormant owing to various challenges, and the GTI may help establish peace and prosperity in East Asia.

The first part of the study reviews relevant literature and discusses the theoretical framework, benefit sharing. The second part consists of an overview of the river basin, exploring environmental conditions and political and socioeconomic circumstances. The study sheds light on the development of international cooperation in the river basin in the third part with a special focus on the TRADP from 1991 to 2005, and the GTI from 2005 to the present. The last part discusses achievements and challenges as policy implications.

## II. Literature Review and Theoretical Framework

### 1. Literature Review

This study deploys the benefit-sharing approach as an analytical framework. Benefits may be political (lowering political tensions), economic (hydropower generation and irrigation projects), environmental (enhancement of water quality), and social (improvement of livelihoods and living conditions) (Alam et al. 2009; Hensengerth et al. 2012; Sadoff & Grey 2002).

There are four different types of benefit sharing related to a transboundary river according to Sadoff and Grey (2002). Type 1 is the enhancement of water quality or biodiversity, which brings in direct benefits to the transboundary river. Type 2 is related to direct economic benefits, for instance, through hydropower dams and irrigation projects. Type 3 is relevant to joint projects for reduction of water-related natural disasters, such as flood and drought, and the decrease of possible conflicts. Type 4 indicates the creation of benefits beyond the river basin,

for instance, integrated regional markets. With regard to the Tumen River Basin, the regional economic cooperation via the TRADP and the GTI is associated with Type 4 benefits, and the future development path of the GTI with an emphasis on tourism and ecosystem conservation is also linked to Type 1.

Attention is paid to a series of cases to which the benefit-sharing approach has been applied. Good examples are found in various river basins: the Senegal River in West Africa between Senegal, Mauritania, and Mali, the Columbia River between the U.S.A. and Canada, and the Orange-Senqu River between South Africa, Lesotho, Botswana, and Namibia (Alam et al. 2009; Haas 2009; Tarlock & Wouters 2007; Yu 2011). Recent studies on benefit sharing focus on socioeconomic development based on regional cooperation in the Mekong River Basin and delve into positive and challenging lessons from the case of international cooperation in the Rhine River Basin and the Eastern Nile River Basin (Biba 2018; Lee 2015a; Lee 2015b; Lee et al. 2018; Tawfik 2016).

There has been little literature on regional development or cooperation in the Tumen River Basin, because there is a lack of reliable data and documents on the topic, and the development of the GTI has been slow relatively (Shin 2013). Various authors deal with hydrology, climate, the environment, and ecosystems in the river basin (Koo et al. 2011; Pomfret 1997).<sup>1)</sup> Lee et al. (2011) and White (2010) explore socioeconomic situations, and Marsden (2010) analyzes the potential for economic development in the region dependent upon the exploitation of oil, natural gas, and minerals.

A myriad of studies has highlighted political and socioeconomic circumstances of the riparian countries, namely North Korea, China, and Russia, and the neighboring countries including South Korea, Mongolia,

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1) In addition, other sources are referenced. Palmer, D. (2015), "Asian Waters: Tumen River Development Moves Forward," <http://rg21.jp/?p=2491>. (Access on January 23, 2018)

and Japan. Scholars have been interested in Japan's possible engagement with this regional cooperation mechanism although the country is still hesitant to join the GTI. Special attention is placed on the need for South Korea's more active role in the GTI, China's promotion of economic growth in the Northeast, Russia's economic plan for East Siberia, and competitions over Rajin and Sunbong Ports in North Korea between China and Russia (Jeon 2006; Park 2015; Park 2014; Shin 2013; Shin 2014).

Park (2014), Lu and Jin (2011), and GTI (2011) highlight the Chang-Ji-Tu Area Development Plan because the plan can reignite the interest of China in the GTI and serve as a new engine to boost economic cooperation in the region. The success of China's new plan depends upon good cooperation with Russia and North Korea that may be possible through the revitalization of the GTI. Another advantage from China's active engagement with the GTI is that the regional cooperation platform of the GTI can facilitate China's global development strategies through the Asian Infrastructure Development Bank and the One-Belt-One-Road Initiative (*Chosun Daily* 2015/06/30; Wu & Li 2016).

Yi and Woo (2014) and GTI (2011) discuss the different approaches between the central government and local governments of Japan. The central government has been hesitant to be actively engaged in the GTI owing to pressure from the U.S.A. and unresolved political and diplomatic issues with North Korea. However, local governments, local companies, and civil society groups on the eastern coast of Japan have made continuous efforts to take an active role in the GTI.

Various aspects of the development of transboundary cooperation in the river have been discussed, including the background that launched the TRADP by UNDP, its geographic scope, member countries, relevant projects, and financial circumstances. In addition, there has been discussion on the transformation of the TRADP into the GTI in 2005,

related projects, the withdrawal of North Korea in 2009, the current situation, and the way forward. Diverse matters in the different development stages of the TRADP and the GTI are evaluated in a number of studies (Cho & Kim 2010; Chungang University 2010; Kim et al. 2014; Koo et al. 2011; Liu 2014; Lu & Jin 2011; Shin 2014; Wang 2014).

The Strategic Review of the GTI in 2011 introduces an array of important documents on the TRADP and the GTI from the 1995 Agreement to the 2010 Changchun Declaration. One of the most compelling issues in the GTI is the future path of GTI-post-GTI. The member countries agreed to upgrade the GTI into an independent intergovernmental organization in 2012, and further discussions are still ongoing as part of the Strategic Action Plan 2017–2020 (GTI 2011; GTI 2016; GTI 2017; GTI 2018; Ministry of Strategy and Finance 2014; Park 2014). Increasing attention is placed on the role of the GTI for facilitating regional cooperation as the denuclearization of North Korea is under negotiation (GTI 2011; GTI 2018; *Asian Economy* 2018/05/04).

## 2. Theoretical Framework: Benefit Sharing

The idea of benefit sharing stems from a background where conventional analytical frameworks for transboundary river cases are inadequate, because the frameworks simply judge cases as either cooperation – or conflict – related. The benefit-sharing approach highlights shared benefits between riparian countries, which are often larger than benefits acquired through unilateral development by a riparian country (Sadoff & Grey 2002). The “benefits” from the approach indicate that they are not only economic but also political, social, and environmental (Haas 2009).

The “benefit” defined in the approach represents a variety of benefits, including economic benefits based on financial activities, (i.e., profits from

sovereign funds, and political benefits that occur thanks to the avoidance of conflict or war). In addition, there are environmental benefits because of ecosystem protection and sustainable management, and social benefits that come into being based on cooperation between private companies and local communities. This theory advocates positive approaches to maximized and shared benefits between riparian countries and defies a classic dichotomy related to transboundary water issues, conflict, or cooperation (Haas 2009) (See <Table 1>).

<Table 1> A Variety of Benefits

| Classification of Benefits | Description  |
|----------------------------|--|
| Economic                   | Financial activities, including profits from sovereign funds |
| Political                  | Political gains thanks to the avoidance of conflict of war   |
| Environmental              | Ecosystem protection and sustainable management              |
| Social                     | Cooperation between private companies and local communities  |

▪ Haas (2009)

Sadoff and Grey (2002) argue that there are four different types of benefit sharing in a transboundary river. Type 1 is associated with direct environmental benefits for the river, such as water quality or biodiversity improvement. Type 2 means direct economic benefits, namely electricity generation through hydropower dams and an increase of food production through irrigation projects. Type 3 is involved in a reduction of political and socioeconomic costs through the establishment and operation of cooperation mechanisms against water-related natural disasters, (i.e. flood, drought), and a decrease of political tensions due to water-related cooperative activities). Type 4 is achieved through the creation of an integrated regional market that entails an increase in the volumes of



trade and investment, and the achievement of socioeconomic development between riparian and neighboring countries (<Table 2>).

Numerous cases are found with regard to the application of the benefit-sharing approach. The case of the Senegal River in West Africa is a useful example that demonstrates good collaboration between the riparian countries (Senegal, Mauritania, and Mali) in the form of the sovereignty bargain. The 1964 Columbia River Treaty includes enlarged benefits and the balanced distribution of benefits between the riparian countries regarding hydropower development (U.S.A.) and water resources conservation (Canada) (Alam et al. 2009; Haas 2009; Tarlock & Wouters 2007).

<Table 2> Four Different Types of Benefit Sharing in a Transboundary River

| Type of Benefit Sharing | Description   |
|-------------------------|---|
| Type 1                  | Sharing of environmental benefits for the river, such as water quality or biodiversity improvement  |
| Type 2                  | Shared economic benefits from the river, such as hydropower generation and food production through irrigation projects  |
| Type 3                  | Reduction of socio-economic and political costs, such as the establishment and operation of cooperation mechanisms against water-related natural disasters and a decrease of political tensions due to water-related cooperative activities |
| Type 4                  | Creation of an integrated regional market and an increase of trade and investment with socio-economic development   |

▪ Sadoff & Grey (2002)

In addition, the Orange-Senqu River is regarded as a successful case in terms of shared benefits through water resource use between South Africa, Lesotho, Botswana, and Namibia (Hensengerth et al. 2012; Yu 2011). Biba (2018) and Lee (2015a) shed light on socioeconomic development

projects in the Greater Mekong Sub-region (GMS) program as shared benefits between the GMS member countries. With regard to transboundary cooperation in the Rhine River Basin, water pollution abatement and ecosystem improvement (Type 1) have been achieved because of continuous negotiations, the establishment of international conventions, and joint river management between the riparian countries (Lee 2015b). Lee et al. (2018) and Tawfik (2016) discuss potential of benefit sharing with regard to the Grand Ethiopian Renaissance Dam in the Eastern Nile.

Type 4 is closely related to the case of the Tumen River Basin, and shared benefits beyond the river basin, particularly economic benefits. Regional cooperation through the TRADP and the GTI in the river basin has facilitated dialogue and identified common interests between the riparian and the neighboring countries. Such a close engagement has led to consideration of various joint projects in the fields of transport, trade and investment, energy, tourism, ecosystem, and agriculture.

In addition to Type 4, it is possible to witness Type 1 (ecosystem protection/rehabilitation) and Type 2 (tourism industries) benefit-sharing activities in the river basin in the long run. It is necessary to protect a high degree of biodiversity and ecosystems in the river basin, and such natural assets should be an essential base for the take-off of tourism industries. An enlarged basket of benefits will materialize through an integrated regional market in East Asia based on a close collaboration between the riparian and neighboring countries of the GTI.

### III. Overview of the Tumen River Basin

#### 1. Environment Conditions

The Tumen River flows over 521km, and serves as the border between

North Korea, China, and Russia. The river originates from the Changbai or Baekdu Mountain and is discharged into the East Sea. Most of the riverine areas (504km) form the border between North Korea and China whereas only 17km of the river serves as the border between North Korea and Russia (See <Figure 1>) (Koo et al. 2011; Liu 2014).

<Figure 1> Tumen River Basin<sup>2)</sup>



<Figure 2> The North Korea, China, and Russia Border Region



▪ Pomfret (1997)

2) Palmer, D. (2015), "Asian Waters: Tumen River Development Moves Forward," <http://rg21.jp/?p=2491>. (Access on January 23, 2018)

The total size of the Tumen River Basin is 33,168km<sup>2</sup>, and about 70% of the river basin belongs to the Yanbian Korean Autonomous Prefecture, China, 29% to the Hamgyong Province, North Korea, and 1% to Khasan Wetlands in Primorsky Territory, Russia. There are more than 2.2 million people in the river basin, and 75% of them live in the Yanbian Prefecture, China (See <Figure 2>) (Lee et al. 2011; White 2010).

A variety of natural resources abounds in the river basin (i.e. oil, gas, and minerals). These would be easily accessible if an adequate transport infrastructure, such as railways, roads, and sea routes, were provided. There are huge potential markets including, South Korea, Japan, China, and Mongolia. Natural resources and adequate infrastructure can accelerate regional economic growth. Therefore, there was a long-awaited call for multilateral cooperation over resource management and infrastructure development prior to the onset of the UNDP Regional Program for the Tumen River Basin in 1991 (Marsden 2010).

## 2. Political and Socioeconomic Circumstances

The Tumen River Basin has been one of the hotspots in East Asia in terms of politics, economy, the environment, energy, and security. Historically, regional cooperation or conflict has continued to occur between South Korea, North Korea, China, Russia, Mongolia, and Japan. Each country was committed to launching its own plan or strategy for developing the river basin prior to the Tumen River Area Development Program of UNDP in 1991. However, it is imperative to note that no development project will be possible without transboundary river cooperation in the region. <Table 3> summarizes the basic information on the four GTI member countries, namely South Korea, China, Russia, and Mongolia. North Korea withdrew from the GTI in 2009, and Japan has not yet joined the GTI.

<Table 3> Basic Information on the Four GTI Member Countries  
(South Korea, China, Russia, and Mongolia)

| Area        |                       | Population | Area (km <sup>2</sup> ) | Major cities in the GTI        | Main industries   |
|-------------|-----------------------|------------|-------------------------|--------------------------------|---|
| South Korea | Eastern ports         | 5,300,155  | 3,055                   | Busan & Sokcho, Ulsan & Pohang | Automobiles, multimedia & IT, port logistics, equipment & spare parts, oil refinery, shipbuilding, steel production, tourism & convention |
| China       | Heilongjiang Province | 36,890,000 | 454,600                 | Haerbin & Heihe                | Energy, equipment, food processing forestry, petrochemicals pharmaceuticals   |
|             | Inner Mongolia        | 24,000,000 | 1,180,000               | Huhhot                         | Agriculture, chemicals, energy, iron & steel, textiles, pharmaceuticals   |
|             | Jilin Province        | 27,340,000 | 187,400                 | Changchun, Yanji & Hunchun     | Automobiles, energy, metallurgy, petrochemicals, textiles, tourism  |
|             | Liaoning Province     | 42,380,000 | 145,900                 | Shenyang, Dalian & Dandong     | Electronics, machinery, metallurgy, petrochemicals  |
| Mongolia    | Eastern Mongolia      | 223,000    | 287,600                 | Choibalsan                     | Agriculture & agro-processing, mining, tourism  |
| Russia      | Primorsky Territory   | 2,200,000  | 165,900                 | Vladivostok                    | Aquaculture, engineering, food processing, forest products, mining, services, tourism   |

▪ GTI (2011)

Here, the study introduces an overview of political and socioeconomic situations of the countries involved in regional development of the Tumen River Basin. South Korea has played a leading role in policy setting, technology development, and financing for the TRADP. The magnitude of the river basin for South Korea is threefold. First, the river basin abounds in natural resources and energy, such as oil, natural gas, and minerals, and will serve as a pathway for the country to have access to Asia and Europe by railway. Second, sea routes toward the East Sea can increase export volumes of South Korea's manufactured products.

Third, regional cooperation through the GTI will be instrumental in creating an environment in which South and North Korea continue to dialogue. Even though tensions are mounting owing to North Korea's nuclear missile tests, such a channel of conversation between the two Koreas can entail positive political and economic outcomes. The GTI can provide a foundation for the amelioration of political tensions between the two Koreas and peaceful reunification (GTI 2011; GTI 2018; *Asian Economy* 2018/05/04).

North Korea would like to promote border trade, invite more investment, and develop tourism industries for acquiring more hard currency through the program. However, the slow progress of the TRADP disappointed North Korea, and the country's nuclear missile tests triggered severe sanctions from the West, Japan, and South Korea, which resulted in North Korea's withdrawal from the GTI in November 2009.

North Korea appears to utilize the geopolitical and strategic position of Rajin and Sunbong Ports in the course of the competition between China and Russia, which would opt for the seaports toward the East Sea. In addition, the country is determined to attract more foreign investment and introduce cutting-edge technologies for revitalizing its sluggish economic growth (Shin 2014; Yi & Woo 2014).

China has been committed to taking an active part in the TRADP in

order to beef up economic growth in Northeast China, which suffered from a small-scale economy, out-of-date infrastructure, a low density of population, and a lack of adequate seaports. Recently, the Changchun-Jilin-Tumen Area Development Plan has been initiated by the central government. Simultaneously, the Liaoning, the Heilongjiang and Inner Mongolia Provinces have embarked on development plans. It is interesting to observe whether these development initiatives will help to reactivate the GTI, and if China will play a leading role in its future (GTI 2011; Lu & Jin 2011; Park 2014).

The Maritime Province of Siberia and East Siberia have been less developed compared with the western part of Russia, and therefore, regional development projects in the river basin have drawn the close attention of Russia. According to the Far East Socio-Economic Development National Program (2014-2025), the federal government of Russia plans to make massive amounts of investment in the Maritime Province of Siberia. The country is particularly focused on the development of Zarubino Port and is interested in railway projects that connect Russia with Mongolia.

Such an active engagement represents not only Russia's commitment to promoting economic growth in the Far East and East Siberia but also to containing China's far-reaching influence on the region. Nevertheless, the policies and projects of Russia appear to be less systematic and practical compared with those of China (Park 2014).

Mongolia has actively participated in the TRADP and the GTI because of the urgency for more investment, technology transfer, and foreign aid. Mongolia is a land-locked and less developed country and would like to eradicate poverty and achieve a good level of socioeconomic development. The Mongolian government is particularly interested in infrastructure and energy development and plans to export large amounts of underground resources through the corridor (Park 2014).

A long-time candidate for regional cooperation in the river basin, Japan, has been hesitant to join the cooperation mechanism and has maintained a wait-and-see policy so far. It appears that the reason the central government of Japan has not joined the TRADP and the GTI is linked to pressure from the United States and tensions with North Korea in terms of political, military, and diplomatic matters. However, local governments (Niigata and Tottori Prefectures), civil groups, and companies located along the east seashore of Japan have continued to express their interest in the Tumen River cooperation mechanism. If Japan participated in the program, accessibility would be improved from the Tumen Delta to vast markets in Northeast China, and logistical accessibility from Asia to Europe would be enhanced via long-distance railways, such as the Trans-Siberian Railway (GTI 2011; Yi & Woo 2014).

## **IV. Progress of Regional Development in the Tumen River Basin**

### **1. UNDP Tumen River Area Development Program (TRADP)**

#### **(1) The First Phase (Preparation): 1991-1996**

The aftermath of the Cold War in the late 1980s and the early 1990s provided a backdrop for peace and stability in East Asia and facilitated a joint move towards the development of the border regions in the Tumen River. UNDP embarked on the TRADP in 1991 as an intergovernmental cooperation project in order to promote socioeconomic development in the river basin. The program was aimed at reducing tensions in riverine border areas and developing international trade with the initial budget



plan of US\$ 30 billion for 20 years (increased to US\$ 80 billion later) (GTI 2011; Liu 2014).

The program was divided into three phases: 1) the preparation phase: 1991–1996; 2) the middle phase: 1997–2000; and 3) the final phase: 2001–2004. As an intergovernmental cooperation project, the member countries of the TRADP were South Korea, North Korea, China, Russia, and Mongolia together with Japan as an observer.

There were two major economic zones UNDP suggested at the beginning. The first one was the Tumen River Economics Zones with a total area of 1,000km<sup>2</sup> of the small-scale Tumen Delta that connects Hunchun, China, Rajin and Sunbong, North Korea with Posiet and Zarubino, Russia. The second zone was called the Tumen River Economic Development Area with a total area of 10,000km<sup>2</sup> of the large-scale Tumen Delta that links Yanji, China, and Chungjin, North Korea with Nakhodka, Russia. However, the two economic zones did not take off. UNDP stepped down as a supporting agency, and the member countries decided to take the lead. In 1995, the member countries agreed to establish a new governance structure and related regulations coupled with the creation of the secretariat in Beijing (Cho & Kim 2010; Chungang University 2010; Shin 2014).

## (2) The Second Phase (TRADP First Stage): 1997–2000

The 10-year plan for regional development (1996–2005) in the Tumen River Basin was established in late 1995. The member countries decided to focus on the five top priority areas: 1) trade and investment, 2) transport, 3) environment and energy, 4) tourism, and 5) telecommunications, and created a Working Group in each area to facilitate relevant policies and projects. To speed up the progress of each area, each member country was in charge of a specific area, for instance, China for trade and

investment, North Korea for transport, Russia for tourism and energy, South Korea for tourism, and Mongolia for telecommunication (Cho & Kim 2010; Chungang University 2010; Shin 2014).

### (3) The Third Phase (TRADP Second Stage): 2001–2004

More emphasis was placed on how to consolidate and expand multilateral cooperation between countries in East Asia by drawing attention of each country's central government to the program, which was a crucial strategy to scale up the projects of the TRADP. The member countries of the TRADP intended to enlarge the geographical scope of projects into South Korea, Mongolia, and Japan. In addition, the member countries began to play a leading role in setting up and operating projects of the TRADP and planned to invite the Asian Development Bank (ADB) for additional financing (Cho & Kim 2010; Chungang University 2010; Shin 2014).

Despite continuous calls from the TRADP, Japan postponed joining the program, and the ADB showed no interest in the program. There are three reasons why Japan was inactive in the program. First, Japan and North Korea had not reached an agreement about the matter of Japanese kidnapped by North Korea. Second, Japan found that various projects of the program had little feasibility owing to the lack of infrastructure, and third, there was political pressure from the U.S. not to participate in the program. Since the new millennium, the possibility of Japan's engaging with the program has been lower than ever before because of the unceasing attempts of North Korean nuclear weapon development and missile tests. However, Japan still retains its status as observer (Jeon 2006; Shin 2014; Yi & Woo 2014).

One of the most challenging issues in this phase were the budget constraints in tandem with the stalemate in project implementation. The

program was confronted with a major budget constraint because UNDP's capital contribution to the program diminished from 100% in 2001 to 32% in 2003 and 0% in 2006. Although South Korea and China managed to fill the budget gap, the budget constraint triggered the suspension of some meetings of the Working Group (GTI 2017). Confronted with diverse challenges, the member countries held meetings in 2004 and 2005 in Changchun, China and concluded that the TRADP agreement would continue to be valid until 2015 when the TRADP would be transformed into the Greater Tumen Initiative (Cho & Kim 2010; Koo et al. 2011; Shin 2014; Wang 2014).

## 2. Greater Tumen Initiative

### (1) The Fourth Phase (GTI First Stage): 2005–2009

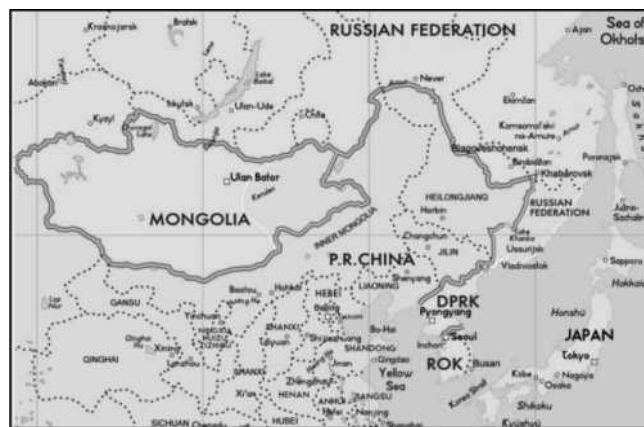
The GTI has continued to build on the legacy of the Tumen Area Development Program with the support of UNDP. The GTI aims to actively promote regional cooperation for socioeconomic development in the Greater Tumen River Basin and Northeast Asia. The differences between the TRADP and the GTI are fivefold. First, the transformation into the GTI connotes the revamped regional cooperation mechanism that is primarily led by the member countries on the basis of agreement and cooperation without UNDP's support. Second, the council for all member countries and the council for the border countries (North Korea, Russia, and China) have been merged into the general assembly, which can facilitate multilateral discussions and cooperation more efficiently.

Third, the GTI member countries agreed to establish the Strategic Action Program (2005–2015) and to closely collaborate in the five priority areas: 1) transport, 2) trade and investment, 3) tourism, 4) energy, and 5) the environment. Fourth, the Working Group was abolished, and several

councils and boards were to be set up to accelerate public-private partnership projects. Fifth, additional new initiatives were introduced, including the empowerment of local governments in regional cooperation, and the expansion of geographical scope into land-locked and under-developed areas (<Figure 3>) (Cho & Kim 2010; Koo et al. 2011; Liu 2014; Shin 2014).

Councils, boards, and projects of the five priority areas were decided in 2006. The councils and boards included the Energy Board, the Tourism Council, the Business Advisory Council, and the Cooperation Framework on Environment together with major projects in accordance with the five priority areas (See <Table 2>). One of the major criticisms of the TRADP was that only the public sector was allowed to participate in project planning and implementation, and therefore progress was sluggish. Considering the criticism, the GTI member countries established the Business Advisory Council and advocated private sector participation in projects. Additionally, the GTI has not only encouraged multilateral cooperation but also allowed bilateral cooperation in project planning and implementation for the areas having good investment potential (Shin 2014).

<Figure 3> Greater Tumen Initiative Area and Countries



▪ GTI (2011)

Regional cooperation in the GTI faced another hindrance in November 2009, namely North Korea's withdrawal. Such a move has undermined the legitimacy of the operation and implementation of projects in the GTI, and the absence of North Korea remains one of the critical challenges in the GTI (Cho & Kim 2010; Koo et al. 2011).

Although there was no official announcement from the country on the background of its withdrawal, there are several possible reasons. First, North Korea appears to be disappointed by the slow progress of TRADP and GTI projects which the country believed would bolster regional development in the river basin in a short period of time. Second, vigorous human and physical interactions and exchanges through the GTI might jeopardize the tight grip of the North Korean government on ordinary people. Park (2015) maintains that if an increase in national benefits through economic development were to clash with the principles of socialism, North Korea would prioritize political interests and de-emphasize the economic benefits (Park 2015).

Third, once China and Russia both explicitly expressed their interest in access to the Rajin and Sunbong Ports, North Korea decided to leave the GTI in order to step up its own strategic value. The country pulled out of the GTI in November 2009 but enacted the Rajin-Sunbong Economic Trade Area Law and designated Sunbong as a special city, which implies the country's strong commitment to promoting international trade and foreign investment. These phenomena indirectly signify North Korea's returning to the GTI in the foreseeable future (Park 2015; Shin 2014).

## (2) The Fifth Phase (GTI Second Stage): 2010-2015

Since 2010, the GTI has succeeded in implementing various projects, and smoother progress has been made regarding discussions and cooperation between the four member countries. One of the conspicuous

changes after 2010 was China's proactive move to develop its border areas in the Tumen River Basin, which will have an impact on the future of the GTI.

China began to put an emphasis on the northeastern region from the beginning of 2000 after the country achieved the eye-catching socioeconomic development from the late 1970s. In particular, the Changchun-Jilin-Tumen Area Development Plan since 2008 has kindled the boom of socioeconomic development in Northeast China. An interesting aspect of this project is that the Chang-Ji-Tu Plan was initiated by the central government, which implies that the central government duly recognizes the potential magnitude of socioeconomic development in the Tumen River Basin.

The purpose of the Chang-Ji-Tu Development Plan is to build advanced logistics bases and Northeast Asia business centers by linking Changchun with the Tumen River; ultimately, it will turn the project areas into a major logistics hub in the future. A total investment of RMB 280 billion (US\$ 47 billion) will be channeled to the project. A prerequisite for its success is economic cooperation with North Korea and Russia (Cho & Kim 2010; Lu & Jin 2011; Shin 2014; Yi & Woo 2014).

Another feature worth paying attention to is the intensification of competition between China and Russia over securing access to Rajin and Sunbong Ports, North Korea. China and Russia are both determined to secure exclusive rights to use the ports for sea routes toward the East Sea. The two ports will enable China or Russia to not only increase economic benefits through investment and trade but also to have security benefits from using the ports for military purposes (Shin 2013; Shin 2014; Yi & Woo 2014).

(3) The Sixth Phase (Post-GTI): 2016 to the present

The future of the GTI was discussed through several meetings from 2008 to 2014 and, in 2014, the countries endorsed a legal concept note for transforming the GTI into an independent intergovernmental organization in the 15th General Assembly (Ministry of Strategy and Finance 2014; Park 2014). In becoming an independent intergovernmental organization, the GTI would be an independent legal entity capable of making agreements with non-state organizations, conducting fund-raising activities, implementing projects, undertaking legal actions such as lawsuits, and recruiting and paying employees (GTI 2016; GTI 2017; Park 2014).

According to the concept note, the post-GTI will be an intergovernmental organization for achieving economic cooperation in Northeast Asia and be dedicated to ensuring mutual cooperation and achieving sustainable development for the countries of the region. The primary cooperation areas are the five priority areas plus the area of agriculture, which was added owing to the creation of the Agriculture Committee in 2016.

The Strategic Action Plan 2017–2020 comprises the six priority areas. With regard to transport, the post-GTI will enhance transport infrastructure in Northeast Asia and consolidate the interconnectivity between regions. Attention is paid to various policies for the elimination of red tape in the area of trade and investment, and cross-border ecotourism and relevant services will be part of the tourism industries. The energy sector requires more projects for leveling energy use efficiency, and an emphasis is being placed on ecosystem and biodiversity conservation in this area. The agricultural sector will highlight rural economic development, trade facilitation, and food safety and security in the region (GTI 2017).

## V. Implications of Regional Cooperation in the Tumen River Basin

### 1. Achievements and Challenges

Examining the Greater Tumen Initiative in light of the benefit-sharing approach, the most prominent type of approach is Type 4, in which benefits occur beyond the river basin, specifically, socioeconomic development through regional economic integration. The TRADP and the GTI have contributed to the improvement of transport, trade and investment, energy, tourism, and environmental protection in the river basin. One of the more noteworthy benefits, however, was the pursuit of a common objective by the countries along the Tumen River (i.e., the collaborative effort to maximize benefits in spite of different economic levels and the needs of each country). Benefits from this collaborative effort, such as the establishment of the Special Economic Zone, support the validity of the benefit-sharing approach.

Although it is difficult to consider the TRADP a success, the program has contributed to easing the political, diplomatic, and military tensions that remained after the Cold War as well as advancing the economic development of each Northeast Asian country. In light of these benefits, the program can be considered a success for Type 4, which includes the creation of shared profits.

Below is an examination of the challenges and successes of the TRADP and the GTI. According to an evaluation by UNDP, the TRADP has not necessarily been an overall success but still shows great potential in spite of its slow development; the program, in other words, can be considered an “incomplete success” (Shin 2014). The problems and limitations of the GTI will first be examined.



The main obstacle is the lack of responsibility and ownership in the program. In 2005, the leadership of this collaboration was transferred from UNDP to its member nations, but the modifications and levels of participation of the member nations have not been reflected in the GTI management structure. Additionally, the GTI suffers from a noticeable paucity of a general long-term plan and more specific long-term plans to address economic collaboration and other pending issues (Liu 2014).

Second, one of the realistic difficulties of the GTI is the dearth of financial resources, which has caused problems for the management and development of programs related to the membership fees. From the beginning of the TRADP, with the exception of South Korea and China, the program has been financially unstable, and as China has been focusing on the economic development of its southeastern coast, it has not been able to invest in its northeastern border. In an effort to strengthen its finances, the GTI has held trade investment expositions and has applied for loans from the ADB, but these efforts have mostly been ineffective. Other efforts have included the establishment of independent development banks and the development of investment corporations, but these efforts have also seen little success (Shin 2014).

Third, the differences between the political and economic systems of the member nations are another factor that has slowed the development of the GTI programs. North Korea, which has a top-down governance system, collaborates with neighboring countries, but this relationship has proven to be an obstacle. With North Korea's planned economic system, China and Russia's planned-to-liberal transitional economic system, and Korea's liberal economic system, these diverse economic systems have faced a variety of difficulties developing programs related to the five priorities.

Fourth, the membership status of North Korea, which withdrew in 2009, and Japan, which is hesitating about becoming a member, is yet to

be determined. The re-entry of North Korea, the uppermost country, with the participation of all the basin countries, would provide a start for a basin community and give the community greater legitimacy. The entry of Japan, which occupies an important political and economic position in Northeast Asia, would play a determining role in developing the GTI programs.

The challenges of the GTI were discussed in the 2011 Strategic Review, and the proposals to address these problems were as follows. First, regarding the sense of ownership that is lacking from the initiative, each country should have a representative from the ministerial level or higher and further emphasize political and policy motivations. Second, regarding the continued lack of finances, the member nations should attempt to expand the budget for industries related to the secretariat management, and they should also work closely with international organizations besides UNDP (e.g., ADB, World Bank, UNESCAP, GIZ [Germany], JICA, KOICA) to develop programs. The GTI's first policy brief was published thanks to the financial support of GIZ in 2019, which may indicate a good signal that the GTI can diversify its financing sources from international development or financial agencies (GTI 2019). Also, the Northeast Asia EXIM Bank Association, which was agreed upon by the GTI member nations in 2012, must be developed as a major funding vehicle (GTI 2017).

Third, regarding North Korea's return to the Initiative, local governments must join the Initiative by sharing knowledge and supporting its efforts. Once trust is built and industries have been developed, a politically appropriate time for North Korea's re-entry must be determined. Regarding Japan's participation, the region covered by the GTI must reach the Eastern Sea Rim, and the GTI must provide Japan with more incentives to join (GTI 2011).

Fourth, in order to reach a shared level of sustainable development

among South Korea, North Korea, China, Russia, and Mongolia, cross-border cooperation must be strengthened; to do so, the programs in four fields must be developed: transport, the development of the Rajin-Sunbong International Industry Complex or Special Economic Zone, the international tourism belt, and international cooperation on the environment (Kim et al. 2014).

It must be noted here that the success of the GTI is likely to be contingent upon the development of China's northeastern region. As explained previously, China's Chang-Ji-Tu Project will not focus on developing the Jilin Province or the three key provinces in Northeast China but will instead be considered a national development plan led by the central government. Similar to the development of the southeastern coast following the 1978 Reform and Opening Up, this project will also see large-scale investments and support for policies. The support for this approach came in 2014, when, during his trip to Korea, General Secretary Xi Jinping mentioned the future of the GTI (i.e., a switch to an independent intergovernmental organization) in his terms of agreement with then President Park (Shin 2014).

However, although the development resulting from China's Chang-Ji-Tu Project will support the GTI, the success of the Initiative is ultimately contingent upon the cooperation among its member nations, and especially North Korea. If its closed economic systems and uncertain foreign policies continue and China is unable to make easy use of Rajin and Sunbong Ports, i.e., the exit way to the East Sea, China's development program and the GTI face an uncertain future (Lu & Jin 2011; Shin 2014).

A recent turning point for the positive future of the GTI was the Inter-Korea Summit held in April, 2018, which would be expected to accelerate the denuclearization process of North Korea and bring about political stability and economic prosperity (*MK News* 2018/05/01). Taking

advantage of such a historic moment, North Korea unofficially sent the delegation to the GTI a month after the summit, which is a positive signal of possible return of North Korea to the GTI in the near future (*Asian Economy* 2018/05/04).

Nevertheless, there is still a tough way ahead for the revitalization of the GTI, since several layers of international sanctions, which have been spearheaded by US, are imposed on North Korea as well as Russia (*CNN* 2017/08/04). In addition, there has been a discussion of international development or financial institutions, such as ADB, World Bank, GIZ, KOICA or JICA, possible engagement with development projects in North Korea since the Inter-Koreas Summit in April, 2018 and the North Korea-US Summit in May, 2018. However, such an optimistic view can be valid only if the current stalemate of the denuclearization process is over between North Korea, US and South Korea.

## VI. Conclusion

This research has examined the case of TRADP and the GTI and, specifically, the economic collaboration and regional development of the Tumen River Basin, to analyze the process and results of international cooperation deploying the benefit-sharing theory. According to this theory, shared benefits based on cooperation can be larger than benefits acquired through unilateral development of a transboundary river.

According to the application of this theory to the TRADP and the GTI, South Korea, North Korea, China, Russia, Mongolia (i.e., the member nations), and Japan have all overcome difficulties and pursued long-term cooperation with the others. Although their success has been somewhat incomplete, the member nations have made efforts to build mutual trust and cooperation for the sake of sustainable economic and regional

development.

The TRADP began under the leadership of the UNDP in 1991 and became the GTI in 2005. The initiative is in the process of becoming an independent intergovernmental organization as of October 2019. The future of the GTI looks promising because of a variety of member countries' regional development efforts, such as China's development of the three key provinces in its northeastern region, Russia's development of its far east and Siberia, Korea's Eurasia initiative, and Japan's participation in the program.

As for North Korea, not only will the country's cooperation determine the future of China's plan to use the exit way of the East Sea, and Russia's programs but its return to the Initiative will also be necessary to develop programs and make the GTI an intergovernmental organization. As for South Korea, improving relations with North Korea is a crucial issue, as good relations between the two Koreas will pave the path for reunification in the future.

South Korea must take the opportunity offered by the GTI to participate in exchanges and cooperation with the North and lay the foundation for leading the North to a more open stance on economic development and political issues. As discussed previously, when considering North Korea's maintenance of its state and the financial difficulties present, the Tumen River offers a unique opportunity for the two Koreas to prepare for reunification in the future. The Ulaanbaatar Declaration of the GTI in June 2018 explicitly calls for North Korea's return to the cooperation mechanism (GTI 2018; Lu & Jin 2011).

If the recently established Asian Infrastructure Investment Bank (AIIB) and China's One-Belt-One-Road (OBOR) Initiative are used wisely, they can serve as tools to strengthen the GTI and usher North Korea back into the Initiative. China is the largest shareholder in the AIIB and has seriously considered a series of infrastructure projects in the Tumen

River region. If China can use the AIIB to establish and manage projects, the country can also use GTI. North Korea is very likely to cooperate, as doing so would revive its economy by strengthening trade and foreign investments and introducing advanced technology (*Chosun Daily* 2015/06/30).

China, which is attempting to form the New Silk Road economic bloc, can use the GTI to develop cooperation within Northeast Asia and promote the OBOR (Wu & Li 2016). South Korea should consider China's OBOR and development plans for the three key provinces in Northeast China, as doing so will help in the materialization of South Korea's Eurasia Initiative. South Korea should also plan to use the GTI more actively as a magnet to let North Korea open its door to the world for socioeconomic development.

Based on the evidence available, cooperation between South Korea, China, and Russia on the development of Northeast Asia would be impossible without the GTI. In conclusion, the GTI, with South Korea, China, and Russia formulating a plan to which North Korea, Mongolia, and Japan can agree, can serve as a model for international cooperation as well as a platform for Northeast Asia development.

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| 국문초록 |

## 두만강 유역의 국제하천협력: 광역두만강개발계획(GTI)을 중심으로

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본 연구는 두만강 유역 국가(북한, 중국, 러시아) 및 인접 국가(한국, 몽골, 일본) 간의 협력 과정과 현안을 1991년부터 현재까지를 분석한다. 본 연구는 특히 광역두만강개발계획(Greater Tumen Initiative: GTI)의 수립, 발전 및 현황을 집중적으로 조명함으로써 두만강 유역을 둘러싼 동아시아 지역개발 계획을 통한 공동의 이익 창출과 공유 가능성을 짚어보고 정책적 시사점을 찾고자 한다. 분석이론으로 이익공유(Benefit Sharing)를 이용하여 협력을 통한 이익공유가 한 국가의 일방적인 수자원개발로 인한 이익의 총합보다 클 수 있다는 것을 주장한다. 1991년 UNDP가 시작한 두만강지역개발프로그램(Tumen Regional Development Program: TRADP)은 두만강 유역의 지역개발에 이바지하였고 2005년 광역두만강개발계획(GTI)으로 발전하였다. 2005년 이후 GTI는 2009년 북한의 탈퇴, 리더십의 부재 및 재원 부족으로 인해 부침을 겪어왔다. 그렇지만, GTI는 유역 국가들의 이익공유를 위한 유용한 지역협력기반 임무를 수행하였다고 평가할 수 있다. 본 프로그램은 동아시아의 평화와 안정에 이바지하였고 교통, 무역 및 투자, 에너지, 관광 및 환경사업의 추진을 통해 유역 공동 사업을 위한 토대를 마련하기도 하였다. 향후 GTI는 북한이 핵무기 개발과 시험을 통하여 촉발한 동아시아의 긴장을 완화하고 두만강 유역의 사회경제발전을 촉진할 수 있는 기반으로서

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역할을 할 것으로 판단한다.

- 주제어: 국제하천협력, 광역두만강개발계획, 이익공유, 지역협력기반, 사회경제발전