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Green Growth as a New Paradigm for Sustainable Development And Climate Change Cooperation: A Korean Perspective

Keynote Speech at the Retreat for Permanent Representatives on the UN Conference on Sustainable Development (Rio+20) held at Greentree, Manhasset, Long Island, on 30 September, 2011, organized by the Friedrich-Ebert-Stiftung New York Office

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Dr. Werner Puschra, Mr. Sha Zukang, Permanent Representatives and Senior Diplomats to UN, and Ladies and Gentlemen:

It is a great honor for me to have been invited to give a keynote speech at this retreat of great significance dedicated to the discussion of key issues for the Rio+20 Summit. I thank Dr. Puschra, Executive Director of FES New York, and Mr. Sha Zukang, UN Under-Secretary-General for Economic and Social Affairs, for this honor.

I understand that "a green economy within the context of sustainable development and poverty eradication" is a central theme to be discussed at this retreat as it will be at the Rio+20 Summit next year. Against this background, I have chosen to speak tonight about Korea's green growth policies which were formally launched by President Lee Myung-bak 3 years ago, as well as their implications for sustainable development. The gist of my speech tonight is shown by title I have chosen for this speech, "green growth as a new paradigm for sustainable development and climate change cooperation: A Korean perspective".

<u>Green business boom in Korea</u>

I would like to begin by reporting to you that over last three years there has emerged sort of a green business boom in Korea.

All major business groups have begun to focus their investment on green projects. During the years, 2008 through 2010, the combined total of such investment by 30 largest business groups recorded the annual growth rate of 75% and amounted to 15.1 trillion won (about 13 billion US dollars). And it has been projected to increase by 50% to 22.4 trillion won (19 billion dollars) over the subsequent three years.

Solar photovoltaic and wind power equipment are the investment leaders in renewable energy industry sector, the largest category. The second largest category are green cars such as hybrid and electric vehicles, further followed by next-generation electric equipment such as LED and power storage equipment.

The distant fourth largest category consists of projects related with adaptation to climate change.

SMEs, too, have been joining in the green rush, some of them already emerging as hidden champions in the global market for parts and components for solar and wind power systems or for LED lighting equipment, for example.

In the renewable and new energy technology industries alone, and during 2008~2010, the number of business firms increased by 2.1 times, the size of employment by 3.7 times, the size of investment by 5.1 times, and the volume of sales by 6.5 times. Exports have increased by 7.3 times.

The government itself has been a leading investor in green growth, especially in green R&D and infrastructure. The local governments have been undertaking green growth projects of their own.

I now would like to mention several examples of green growth projects being undertaken in Korea by the central government and private businesses for the purpose of illustration. Most of all these projects may be seen to contribute to the three pillars of sustainable development at the same time.

Cheonggye-cheon Stream Project: Precursor of Green Growth Policies

I begin with a green infrastructure project which actually predated the current government of President Lee Myung-bak but was an exemplary green growth project which seems to have heralded the coming of President Lee's green growth policies.

The project was to restore a major stream called 'Cheonggye-cheon', which used to run through the heart of the old Seoul City from east to west since time immemorial and eventually became a stream of sewage water, flanked by numerous slum dwellings on its both sides[*Slide 1*]. This was an irony because Cheonggye-cheon literally meant "clean stream".

The stream was buried and covered with concrete during the late 1950s and the 1960s in order to construct an elevated expressway above the covered site. The purpose was to facilitate uninterrupted movement of cargo trucks and passenger cars through the congested city of Seoul.

The Cheonggye-cheon Expressway so constructed served its purpose very well while it lasted. But it also became a major source of air pollution and greenhouse gas emissions in Seoul by allowing constant and heavy traffic on it as well as on the ground-level roads below it. The ground-level roads were flanked by numerous small metal ware shops on their both sides. Altogether, the Cheonggye-cheon Expressway corridor was a glaring symbol of Korea's early 'brown growth' era of compressed industrialization drive with its consequent impact on the environment and quality of life in the city.

During 2003~2005, the Seoul Metropolitan Government abolished the elevated expressway and restored the Cheonggye-cheon Stream, through which there now runs a constant stream of clean water supplied from the Han River.

This project was coupled with a mass transit reform to save the city from the traffic hell which would have resulted from the removal of the expressway. This reform involved reorganizing all bus lines into trunk lines and branch lines, introducing bus-only lanes at the middle of roads for trunk line buses, and linking the bus lines with the subway system with a single mass transit ticket or an electronic pass.

Restoration of the Cheonggyecheon Stream has brought an era of renaissance to Seoul, accompanied by huge benefits to the local economy. The Cheonggye-cheon Stream is now truly a clean river with fish swimming in it, grass and flowers growing and blooming around it, providing a healthy habitat for birds and small animals and offering fresh air to Seoul citizens and tourists. Pollution and greenhouse gas emission from the city has been reduced considerably. The temperature in the heart of Seoul has been brought down at least by 2^{0}C.

The neighboring areas have become a vibrant cultural attraction. *Chic* modern-styled shops, restaurants and bars are springing up. They are undergoing an urban renewal. Tourists are flocking. Many new jobs are being created, especially for young people. The mass transit reform, in particular, has made possible a major saving of costly commuting time for young and low income people who live on the outskirts of Seoul but work downtown. The restored stream is contributing a new economic vitality to Seoul.

In a nutshell, the Cheonggye-cheon Stream Project including the mass transit reform is contributing to all three pillars of sustainable development. And inspired by the success of this project, many regional cities across the country are now pursuing urban renewal around the streams which typically run through the heart of the cities.

Who has done this project? It was Mr. Lee Myung-bak who launched the project as Mayor of Seoul on the campaign promise he made as a mayoral candidate. And his success with this project was one of the contributing factors for his successful campaign at the Presidential election held in 2007. No wonder that the launching of the green growth strategy was one of the first, and the most important, initiatives launched by President Lee Myung-bak,

Exemplary Green Investment Projects Undertaken during Last Three Years

Four Major Rivers Restoration Project

This project was launched in 2009 in order to enhance four major rivers spanning most of the South Korean territory. Worth 15.4 trillion won (about 13 billion US dollars), this is a huge infrastructure project, undertaken in a proactive effort to adapt to the increasingly severe water resources management challenge due to global warming and the consequent 'weirding' of the global water cycle[*Slide 2*].

Those rivers have been growing shallow over time due to accumulation of sludge and wastes in the basin. The bottom becomes exposed in many parts of those rivers in dry seasons, damaging habitat for fish and plants in and around the rivers. The rivers would be flooded when heavy rainfalls continue for days during the monsoon season, causing serious damages to properties and people in the neighboring communities and farm fields as a matter of annual happenings. The continued decline in the water-holding capacities of the rivers has been causing water stresses in a number of regions.

The Major Rivers Restoration Project has been a typical climate adaptation project, the major part of which is just now being completed. Its primary objective has been to increase the water-holding capacities of the rivers so as to prevent floods in times of heavy rainfalls as well as to secure a stable supply of fresh water for drinking and other uses throughout the year. A second objective has been to restore the natural habitat in and around the rivers, and the third, to develop the riverine areas as sites for recreational and cultural activities for local residents and tourists.

Many environmentalists as well as politicians from the opposition have been opposing and criticizing this project as a costly construction project which would fail to meet its objectives and worsen the rivers environmentally. However, the project has passed the first test of success with a very high score early this summer, when over more than three weeks, there was a rainfall 2.5 times as heavy as in the average year. But, with the main part of the project done just in time, there was no serious flooding along the rivers, even along the various branch rivers which feed water to those major rivers. The damages done by the heavy rains were estimated to be one tenth the average year magnitude.

Two Renewable Energy Projects by K-water

Korean power producers are required to supply designated percentages which increase over time of the total power they produce under the Renewable Portfolio Standard. Operating a number of hydraulic power plants, K-water, a public corporation responsible for management of the country's water resources, is also subject to this regulation. The K-water has undertaken two innovative projects to comply with this regulation.

The World's Largest Tidal Power Station

Early in September, K-water launched the world's largest tidal power station that had just been built between the shore of the west coast and a large lake called 'Sihwa Lake' which was artificially created in the early 1990s for the purpose of desalinating sea water for supply to the local farmers [*Slide 3*]. The Sihwa Lake was a failure and becoming an environmental disaster as the lake became stagnating foul water.

The tidal power station was meant to bring back the lake alive by forcefully circulating sea water into and out of the lake while harnessing the incoming forceful tidal currents to turn turbine and produce electricity. It consists of 10 tidal power turbines and has begun to produce electricity of up to 254 thousand kW. It has emerged as the largest one of its kind globally, outsizing the French tidal power station in Rance, now the second largest one, by a small margin.

The World's First Floating Solar Power Station

Exploring new ways of generating renewable energy from water, K-water has come up with the idea of floating solar power station [*Slide 4*]. It has just built a pilot version of such a station of 1 MW capacity on the surface of the 'Hapcheon Lake'. According to K-water, this is the world's first of its kind. K-water plans to install a total of 1,500 MW by 2022.

K-water says that considering all the lake surfaces available in the country, a total of up to 4,170 MW solar power, equivalent to a combined capacity of four nuclear power generators, can be supplied by building floating solar power stations all around in Korea.

Buan-Youngkwang Offshore Wind Power Farm

The Ministry of Knowledge Economy is working with local governments and the interested private enterprises, including major shipbuilders, to create an offshore wind mills zone off the 'Buan-Youngkwang' southwestern coast with a combined total capacity of 2,500 MW by 2019 [*Slide 5*]. This project will proceed in three steps, beginning with a 'test site' of 20 5MW units by 2013, and proceeding to the second stage ‘demonstration site’ of 180 5MW units by 2016, and concluding with additional 300 5MW units by 2019.

When completed, this offshore wind mill farm will consist of 500 5MW wind mills, with a total capacity of 2,500 MW. The primary purpose of this project is to provide the interested domestic firms with a track record of building and operating offshore wind mills for domestic as well as overseas marketing.

The Jeju Smart Grid Test Bed

The government announced a National Smart Grid Roadmap in 2009, according to which Korea will complete a nationwide smart grid by 2030. The first step under this roadmap is to build a smart grid test bed on the ‘Jeju Island’. This first-phase project will be completed by November 5 this year. One hundred and sixty-eight big and small enterprises drawn from power, communications, automobile, home appliance, and other sectors have been participating in this project, developing and testing their technologies and products.

Electric Vehicles

Hyundai Motor presented Korea’s first new compact-size electric vehicle called *BlueOn* in October last year [*Slide 6*]. Since then, Hyundai has been developing two other, larger EVs and is preparing to begin to supply them to the market in 2014. In the meantime, Hyundai has begun to sell medium-size hybrid cars to the mass market. It is hoped that all ‘green cars’ will account for more than 40% of all cars on the streets in Korea by 2020.

National High-Speed-Rail Network

The government has launched the construction of a nation-wide network of high-speed-rails for completion by 2020, linking all regional hub cities, which will allow transportation of passengers between any two cities in the country within an hour and a half [*Slide 7*]. When completed, the HSR network will help induce a modal shift of passengers from the road to trains, with major beneficial impacts on regional developments, energy consumption and GHG emission in transportation.

Korea’s Green Growth Policies

I have shown you that green growth dynamism has begun to take hold in Korea during last 3 years.

Much of all this began like a big bang in response to the green growth policy regime which was formally launched on August 15, 2008, when President Lee Myung-bak declared that 'low carbon green growth' should be a pillar of Korea's new development vision for the next 60 years in his speech marking the 60th anniversary of Korea's modern government.

President Lee said that "green growth means achieving sustainable growth by reducing GHG emission and environmental pollution". He then explained this by further saying:

"Green growth is a new development paradigm that creates new growth engines and jobs with green technologies and clean energies."

The motivation for this new long-term growth strategy comes from concerns with the impact of continuing global population growth on the availability of fossil fuels, other natural resources, on the environment, and eventually on the sustainability of economic growth at both the global and the national levels. The concerns lead to the realization that the past pattern of resource-intensive, environmental-insensitive, planet-irresponsible, and quantity-oriented growth strategy, which I would like to sum up by the umbrella concept of 'brown growth' would be no longer sustainable.

The Korean government has set up the requisite institutional framework for green growth in order to implement President Lee's declaration of the green growth strategy [*Slide 8*].

The key pillars are the Presidential Committee on Green Growth, the National Green Growth Development Strategy and the 5-Year Plan for Green Growth (2009~2013), the Medium-Term National GHG Emission Reduction Target of -30% BAU by 2020, and the Framework Act for Low Carbon Green Growth.

Korea's National Green Growth Development Strategy proposes the vision of becoming one of 7 ranking green economies by 2020, and of 5 ranking green economies by 2050 [*Slide 9*].

As shown in the slide, Korea will pursue this goal by trying to achieve three policy objectives, and ten strategic goals.

The content of those policy objectives and strategic goals should show that Korea proposes to transform its economy's entire system of natural resources and energy utilization across the whole range of sectors from power generation to industries, agriculture, forestry, land use, houses, buildings, transportation, lifestyles, and so on.

It is hoped that the comprehensive approach to the required structural transformation of the economy will maximize synergistic interactions between the supply side and the demand side of the markets, as well as give the market clear signals on, and confidence in, the forthcoming structural changes.

The consequent broad, inter-linked and continued changes across the economy will hopefully generate sustained green growth over time.

The key to sustained green growth will be a pervasive and sustained process of innovation, in both the technological sense and the institutional sense. The role of this innovation would be to delink economic growth and environmental degradation, most crucially by innovating and de-carbonizing the entire energy system, creating new growth engines in the process.

Under the Korean strategy, the most critical driver of such innovation is the pursuit of the greenhouse gas emission reduction target. Korea is now focusing on this target.

In fact, the pursuit of this target has been triggering and accelerating innovation in the country. Many of the green growth phenomena that are now observed in Korea have been directly or indirectly driven by the need to cut down the emission or perception of such need.

The slide [*Slide 10*] shows the list of illustrative examples of green energy technologies that the Korean government thinks will have to be developed for the purpose of enabling Korea to meet the emission reduction target.

It may be noted that President Lee made a political commitment to this target in Copenhagen at COP 15 in 2009, declaring that Korea would pursue it unilaterally and voluntarily in what he called a “Me-First Approach”.

This approach has allowed Korea to make an early start toward green growth. I think that this approach also enhances the confidence of the market in Korea’s green growth policies.

The Presidential Committee is now overseeing the preparation of the implementing measures for the emission reduction target. We are preparing to introduce an emission rights trading system in January 2015.

Various green growth developments which are now observed in Korea should be explained as the response of the market to those policy developments. So, so far, Korea’s green growth model newly introduced seems to be working well.

The government plays a critical role in expediting and sustaining the innovation process with regulatory and supportive measures, especially in regard to R&D, market creation, and green financing.

The comprehensive transformational approach, the stability and transparency of the institutional framework, and the power of the inspiring vision of low carbon green growth, reinforced by the Me-First approach, will hopefully sustain Korean economy's green growth.

The discussion of several examples of Korea's green growth projects has demonstrated that those projects, and more broadly, green growth policies, serve the three pillars of sustainable development, especially the economic and environmental pillars, while also, but somewhat less systemically, serving the social pillar.

Under the polarizing impact of globalization, Korea recognizes the need to complement the green growth strategy with policies for more inclusive growth in order to address the needs of sustainable development more fully.

In this regard, Korean President Lee Myung-bak recently proposed the concept of 'ecosystemic' development which would purposely promote interdependent development between large and small enterprises, as well across the broad spectrum of all income classes. The prescription, however, has yet to be worked out.

What Korea's green growth policy regime needs for success by way of augmentation is an open international environment for trade and investment cooperation in green goods and services, and a greater willingness on the part of Korea to make an active use of such environment, as well as a broad international network of the like-minded pursuers of green growth.

Korea's International Initiatives for Green Growth and Sustainable Development

One of the objectives of Korea's green growth policies is to promote the globalization of green growth strategy for all countries, and especially, the developing ones. Korea has built an impressive track record in those regards, too [*Slide 11*].

Korea launched the East Asian Climate Partnership Initiative for the purpose of helping the developing countries in Asia undertake green growth projects, especially, of the adaptation kind.

In 2010, Korea formally acceded to the OECD Development Assistance Committee, and declared that the country would double the ODA commitment from 0.09% of GNI in 2008 to 0.175% in 2013, and further to raise this ratio to that of the DAC average by 2020. The increase in the ODA was to be led by green ODA. This in part covers the East Asian Climate Partnership Initiative.

In 2010, Korea launched the Global Green Growth Institute as a multilateral think and act tank to help the developing countries formulate and undertake their national green growth policies and projects. GGGI is run by an international board and will hopefully be made an international organization before the end of 2012.

President Lee's declaration of Korea's voluntary Medium-Term GHG emission reduction target in the Me-First spirit at COP 15 was meant to be a contribution to facilitation of climate change negotiations. At the same venue, Korea also proposed the concept of NAMA Registry as a means of giving due recognition to, as well as encouraging, voluntary mitigation commitments by the non-Annex I countries as part of a global mitigation deal and to help break the deadlock between the developing and the developed countries.

Currently, the government is preparing to launch a Green Technology Center in early 2012 for more effective coordination of national green technology R&D programs well as international green technology cooperation, including technology transfers to the developing countries.

The OECD had undertaken a 2-year horizontal project on green growth strategy. This was completed, and its report released, in May this year. In collaboration with other international organizations such as the World Bank and UN organizations, the OECD has begun to undertake various component projects in order to propagate the strategy among its member governments as well as for non-member governments, in particular, in order to help governments mainstream green growth strategy into economic policies, in general. This project was launched at the proposal of the Korean government. Korea has been an active contributor to the project.

We, the Korean Presidential Committee on Green Growth, are pleased to see the emergence of a network of international organizations and NGOs which are joining hands in the study and propagation of green growth policies at the global level. The OECD, GGGI, UNEP, and the World Bank are the leaders in this regard. At its 5th meeting held in Seoul in late 2010, the G20 Summit expressed support for national green growth policies. It is expected to follow up on this commitment.

In collaboration with the Korean and the Mexican government, as well as the GGGI, the Danish government has launched as Global Green Growth Forum. In collaboration with the Danish government, and assisted by the GGGI, the Korean government has launched a Global Green Growth Summit. The World Business Council on Sustainable Development, a global network of business leaders, has also begun to explore green growth as a new strategy for sustainable global growth.

This emerging array of various organizations and institutions commonly committed to the promotion of green growth may be collectively identified as a global architecture for green growth.

Such a global green growth architecture, spontaneous as it may be, will promote sharing of belief in a joint pursuit of green growth by the global community of countries, and especially, the developing countries, help those countries leap frog brown growth to green growth, and also, will serve to facilitate top-down global negotiations on sustainable development and climate change from the bottom up. Achievement on these two global goals will in turn enhance the green growth architecture and facilitate green growth.

For it to be more effective, the global green growth architecture as it emerges spontaneously will be in need of streamlining and elaboration for more purposefulness, better coherence and greater effectiveness. And it will be incumbent upon those who believe in green growth to work together for this purpose. Korea has been leading such efforts, with those international initiatives which were mentioned above. It hopes to continue to do so.

Key ingredients of the global green growth architecture will include arrangements for financial and technology transfers as well as support for capacity-building for the benefit of the developing countries. These three items happen to be among the core elements in the negotiations for sustainable development and climate change cooperation.

The strength in approaching these goals from the green growth architecture perspective arises from the fact that cooperation for green growth is to be sought in the Me-First spirit, rather than in the You-First spirit. This is so because the global architecture for green growth will seek a coalition of the willing, rather than negotiations for a zero-sum outcome. This is the avenue that we, of the Korean Presidential Committee on Green Growth, are exploring for harmonious and effective agreements on sustainable development and climate change cooperation.

In this vein, the Korean government, would like to champion green growth as a key actionable solution to sustainable development, as well as to contribute to the evolution of an effective global architecture for green growth in the preparatory process for the UN Rio+20 Summit and beyond. And we will be pleased to be engaged in constructive and explorative dialogue with any other countries which are interested in discussing green growth, sustainable development or climate change cooperation, with us for possible partnership.

Thank you very much for your attention.