

# Daejeon's Green Growth Forum Inspiring the Next Generation of Korean Environmental Policy

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## The Challenges Facing Korea

Americans can discuss the environment in Asia with great detachment because Asia is not that close. The water pollution generated by coastal factories, the "yellow dust" storms generated by desertification in northern China, the assault on ecosystems in Asia is something of an abstraction for many Americans. But in Korea the fallout from these phenomena is real. The Yellow dust turns the skies dark and makes it difficult to breathe. The quality of the water Koreans drink, the fish they eat, the cities they inhabit are directly impacted.

Korea remains one of the top ten emitters of carbon dioxide and is low on the Yale Environmental Performance Index. This state of affairs is in part a result of the rapid industrialization Korea undertook which favored steel, petrochemical and automobiles. But although many Koreans understand the problem, Korea's direction has not been that easy. Many Koreans have a relatively simple concept of progress in which electric lights, automobiles, high-rise apartment buildings and large meals signify success. Such a vision has been incompatible with Korea's relatively limited resources and has hindered efforts to promote a new vision, a "Green" vision, for Korea.

But if Koreans may be slow to understand the seriousness of a problem, they are quite quick to respond once they have fully comprehended its significance. Korea's technology policy previously required focus on a few fields for rapid industrial growth, so institutions do not have the breadth of a nation like the United States. But Koreans are constantly changing their conceptions of the world and modifying their habits; they are known internationally as quick adopters. That is the hope that Korea offers: an ability to reinvent its culture and habits rapidly to meet new challenges. The rapidity with which Koreans have embraced the concept of "low-carbon growth" has been remarkable.

That ability to change quickly is perhaps one of the reasons that the idea of a "Green New

Deal" caught on so easily here in Korea and why we find a new conception of development best known as "green growth" taking root across Korea. Everywhere you look, you see signs advocating green growth. Yet large problems remain. There is a gap between the imperative to address environmental issues and the concrete steps that should be taken locally. For that reason, activism at the local level is imperative.

## The Growing International Consensus

The battle for green growth comes down to a new vision of what the future of our economic development should be. How can we change our entire value system to clear a view of growth that accounts for environmental preservation, energy conservation, and CO<sub>2</sub> emissions reductions. We are far away from such a general agreement in Korea, but the progress in raising the questions has been quite rapid. Still, Korea is hobbled by simplistic concepts of economic progress that blind policy makers to the advantages of green growth. So also the legendary confrontational practices of Korean environmental groups have slowed things down. Many of these organizations, like the Korean Federation for the Environmental Movement, have strong anti-establishment cultures which makes it hard for them to address issues in any other format than protest and confrontation. They have kept their distance from the scientists at major research institutes, perceiving such specialists as compromised. Therefore many Korean environmentalists are experts at protests and candle vigils, but have no training themselves, and few ties to experts.

But now at the highest levels of government in Korea, and East Asia, there is a growing consensus that cuts across ideological lines in favor of a high commitment to the environment and a reassessment of developmental models. The Ministry of the Environment of Korea proposed the "Seoul Initiative" at the fifth Ministerial Conference on Environment and Development in Asia and the Pacific (March, 2005). This initiative was

intended to "create a synergy between economic growth and environmental sustainability" among the nations of the Asia-Pacific region, and set out specific guidelines.

Such themes were carried on two years later at the Bali *United Nations Climate Change Conference* (December 3 -15, 2007). That conference produced the Bali Road Map, including a summary of steps essential to reaching a secure climate future. Included in the road map was the Bali Action Plan, a negotiating process for addressing climate change (by 2009!). EU proposals called for global emissions to peak in 10 to 15 years and decline "well below half" of the 2000 level by 2050 for developing countries and for developed countries to achieve emissions levels 20-40% below 1990 levels by 2020.

More recently, at the G8 Toyako Summit (July 7-9, 2008) alarm bells were sounded again by G8 leaders for a cut in carbon emissions by at least 50 percent by 2050. Although this gesture was seen by many as insufficient, the meeting represented the emergence of environmental issues as a primary issue for governments and global institutions to discuss, and from that moment, the environment moved from the writings of environmental activists to the mainstream press. The stage was set for Korea to make environmental issues national policy in a manner that had no ideological orientation.

But if there was any lesson learned from these international efforts since the signing of the Kyoto Protocol (1997) it is that firm roots at the local level will be essential to any international effort to address climate change. It is not sufficient to hold meetings between environmental ministers. In a real sense the actions of organizations at the local level like the Daejeon Green Growth Forum are not minor variations on the international conferences, but rather form the front line.

#### The Daejeon Green Growth Forum

It was within this context that the Daejeon Green Growth Forum came into being. Daejeon is famous for the R&D cluster around KAIST known as the Daedeok Valley. Daedeok Valley dates back to the 1970s. Among the many fields of research represented in Daedeok Valley, telecommunications, nuclear power, fuel cells and biotechnology have reached a world-class level of sophistication.

In July 2006, Dr. Nampyo Suh of MIT took the reins of KAIST (Korea Advanced Institute of Science and Technology: Korea's premiere

technical university) and along with a small group of dedicated scholars started to transform the university along a new axis: EEWS (Energy, Environment, Water and Sustainability). For a university that had seen memory chips, display panels, ship building and the automotive sector as the driving forces of the economy, this was a radical shift in direction. This group of like-minded people made EEWS into a powerful overarching metaphor that ties together all the fields of knowledge at KAIST.

By 2008, 72 professors had joined the activities of EEWS, and 19 research projects were launched on such topics as Hydrogen Energy, Solar Energy, CO<sub>2</sub> Sequestration, Fuel Cell, Super Insulation, Clean Automobile, Biological Environment Recovery, Recycle Waste and Water Desalination. EEWS, with an office dedicated to it, runs international collaborative efforts.

KAIST has made great strides in coordinating research efforts to develop next-generation electric cars. When President Lee Myungbak visited KAIST for commencement on Friday, February 27, 2009 he was introduced to the debut of a new generation of electric cars developed at KAIST that utilize a lightweight battery whose charge can be supplemented by an underground electric cable, thus making it both light and electric: a hybrid between an electric car and an electric train. This OLEV (on-line electric vehicle) system is cheaper than a battery-operated car and has the advantage of not requiring recharging stations.

Suddenly, after years of devoting attention to consumer goods and electronics, Korea is making the environment a central concern for scholars. Although Korea is still having trouble making the hard decisions about what Green Growth strategies to adopt, the rate at which priorities have shifted over the last two years is remarkable.

It also happens that Daejeon has more green than most cities in Korea its size and is blessed by the three rivers that flow through its center, and green mountains that surround it. In a sense, Daejeon is a very typical Asian city in its size and its habits, similar to many cities in China, Russia, Southeast Asia and elsewhere that wrestle with the problems of air pollution, global warming and waste water. For this reason Daejeon has the remarkable potential to become a world-class eco-city, one that could be a model for similar cities. Such an eco-city as Daejeon is all too necessary to combat climate change as most of the famed eco-cities like Freiburg in Germany, are so different in their history and

their institutions from cities in Asia. They may be attractive, but they offer little to a city like Xian.

The Daejeon Green Growth Forum started in January of 2008 as an informal meeting of individuals from the leading research institutes and universities in Daejeon who felt strongly about environmental issues, and were frustrated with the slow pace at which new technologies developed in the labs are implemented at the local level. These experts came from very different fields of study, but all of them advocated the application of the technologies they had developed to real-life issues.

The group started small. Researchers stole away from their laboratories in the evenings to meet in the conference rooms at assorted research institutes in Daejeon and to discuss how the expertise available in Daejeon could be put to work to transform the city. The excited, and sometimes heated, debates began over dinner, followed by a member's presentation, followed by a roundtable discussion. On one such occasion in March 2008, Junghoon Han of the National Fusion Research Institute presented his plans for the construction of new bicycle paths in Daejeon. Dr. Young Choi of the Korea Institute of Machinery and Materials, gave his input as an engineer and everyone joined in the debate.

Within four months, the forum had gained such a reputation that it hosted Daejeon's Mayor Seong-hyo Park and convinced him of the importance of their efforts. Many elements of the discussion on bicycle paths from Dr. Han's presentation are being implemented today. On February 23 of 2009, the Daedeok Innopolis (Daedeok Special District in Daejeon) brought together 50 university and industry experts to create a special Daedeok bicycle zone for developing the domestic bicycle industry.

The membership grew of the Daejeon Green Growth Forum. By July of 2008, there were 20 members in the Daejeon Green Growth Forum from such institutions as the Korea Electric Power Research Institute, Chungnam National University, the Korea Basic Sciences Research Institute and the Korean Research Institute for Bioscience and Biotechnology. The forum is uniquely successful because it is neither a confrontational environmental group nor a sleepy government bureaucracy. The Daejeon Green Growth Forum is made up of concerned citizens, but citizens who work within universities and government institutions.

#### The Lee Myung Bak's New Green Growth Formula

The discussions on policy carried out at the Daejeon Green Growth Forum did not take place in a vacuum; its members were also active participants in a larger debate on Korea's future. Those themes were encapsulated in President Lee Myung-bak's address commemorating the 60th anniversary of the founding of the Korean Republic delivered on Aug. 15, 2008. In this speech President Lee honed in on the importance of green growth for the Korean economy in the twenty-first century in this speech, stating that "Low carbon green growth ... is a new national development paradigm that creates new growth engines and jobs with green technology and clean energy. The world has gone through the stages of the agricultural, industrial and information revolutions. Now, it is entering the age of an environmental revolution."

This speech took the environmental movement from the periphery to the center of the policy debate in Korea, with the crisis of climate change and environmental degradation receiving new attention from a conservative administration that few would have expected to focus on the environment.

A "Green Growth Forum" was established in Seoul on Sept. 9 under the aegis of the Ministry of the Environment. This government-sponsored forum brings together members from academia, business, the research institutes, and media. More recently, Cheongwadae (the Presidential offices) have established a "Green Growth Committee" to promote environmental policies.

Complementing these developments at home, in December of 2008, UN Secretary-General Ban Ki-moon spoke in Poznan, Poland about a "Global Green New Deal" as the best chance for securing a sound and solid international climate agreement in Copenhagen in next December. His speech was followed by a new flurry of activity around the world, but particularly in the United States, Korea and Japan—opening the door for possible collaboration at a new level of intensity.

But all the enthusiasm surrounding this new paradigm was soon tempered by panoply of challenges. Korean businesses resisted the effort to implement far-reaching "green growth standards" without the proper preparations. And the media, citizens groups and NGOs criticized the government's proposals for being too focused on the revitalization of rivers and the building of nuclear power plants (efforts that remain controversial) and not enough on implementing the necessary policy changes at the

local level. Thus the administration found itself struggling with both those who felt that the "Green New Deal" went too far and not far enough.

Implications of national policy shift for the Daejeon Green Growth Forum

The ideas promoted by the Daejeon Green Growth Forum found interested parties within the Korean government and moved from discussion to implementation at the local level. Daejeon Metropolitan City announced its vision of a "Green City Daejeon" on Oct. 6. Mayor Park increasingly spoke of the importance of leadership in environmental issues and embraced the vision of tapping into Daejeon's research capability to rejuvenate the city in coordination with the central government. He asserted that the perceived conflict between growth and environment could be overcome and a new synergy developed from the marriage of the two concerns.

It was a natural that the first Green Growth Forum at the local level start in Daejeon. This forum was charge with coordinating the policies required to implement President Lee's vision. The Daejeon forum was the natural choice. The group, formally known as "The Daejeon Environment Forum," was renamed as the "Daejeon Green Growth Forum" in a formal ceremony held at the Yusung Hotel in Daejeon on Nov. 27, 2008.

The forum's character was transformed, moving from an ad hoc gathering of like minds to a formal institution directly tied to local and central government. The forum gained new members from industry, government, the media, NGOs and religious groups, and established an executive office and advisory board. Three working groups were inaugurated: climate change technologies (reducing greenhouse gases, energy independence), green industries (environmental technology development), and the green society (the revolution in daily life, education about the environment). Vice President Yang continues in his role as chairman, assisted by Ho Kang, director of the Daejeon Environmental Technology Development Center at Chungnam University.

The Daejeon Green Growth Forum plans to develop into a think-tank for environmental technology and policy that will have impact throughout Asia because of the stature in research of the institutions in Daejeon, with the goal of inspiring other communities to employ locally the technologies available in their research institutions.

The revitalization of bike paths, a system for offering free bicycles to citizens, and the building of a series of extensive bike paths have followed from the initial suggestions of the forum. Moreover, the concrete surrounding the rivers running through Daejeon has been removed to restore the original ecosystem. Signs indicating the level of carbon dioxide in the air have been installed at major intersections.

#### Daejeon Green Growth Forum Reaches out to the World

The next step for the Daejeon Green Growth Forum was to reach out to the rest of the world. The leadership saw that one of the most effective means of inspiring local government to take action was to form links outside of Korea and set Daejeon up as a model for other cities (or a learner interested in benchmarking other cities). That was a bit easier for the Green Growth Forum than is the case for most local NGOs in Korea because it has three foreign members: Nakamura Toraaki from Japan, Neeru Biswas from India and Emanuel Pastreich from the United States. The forum imagined that it would reach beyond Daejeon to form part of an international coalition of "eco-cities," or "environmental cities." This coalition is imagined as a group of local governments around the world that are interested in close cooperation on environmental issues and cost sharing.

There already exists an "Ecocity World **Summit**" organized by Ecocity Builders ([ecocitybuilders.org](http://ecocitybuilders.org)) that meets once a year. But that summit, although it is a valuable gathering of experts from around the world to discuss ecocities in general, contains no mechanism for long-term cooperation at the working level between cities trying to become ecologically sustainable. So also Local Governments for Sustainability (ICLEI) has launched various important programs, but it remains overly focused on the United States and not particularly engaged in East Asia. Most of the material on ICLEI's Korean website is years old and there is no evidence of recent activity. There have been efforts in the city of Kitakyushu to work closely with Dalian China, but in fact that relationship has been dormant over the last five years.

It was in the context of this larger vision of a true working relationship between cities that members of the Daejeon Green Growth Forum visited Japan in January, 2009. Three members of the Daejeon Green Growth Forum, Ji-won Yang, Vice President of KAIST and Chairman of the Green Growth Forum, Sanghyuk Yoo, Woo

song University Professor and former director for the environment for the city of Daejeon, and Emanuel Pastreich, Director of the Asia Institute, visited Tsukuba, Japan to discuss future collaboration (January 17-22, 2009).

Tsukuba is a research cluster, like Daejeon, with institutes working on basic and applied sciences related to Japanese industry. Tsukuba is also the home of the National Institute for Environmental Studies and has recently made significant efforts to become an ecocity in its own right. The hope of the Daejeon Green Growth Forum was that close cooperative relations with the City of Tsukuba and major research institutes could be established to help transform both cities into eco-cities.

The three representatives first met with Dr. Inouye Isao, Special Assistant to the President of Tsukuba University and Chairman of the Tsukuba 3E Forum. The 3E (energy, environment, economy) Forum is a group of experts in the Tsukuba research cluster who meet for regular conferences to discuss their research work concerning the environment. The 3E Forum focuses on low-carbon urban strategies and has a similar imperative to that of the Daejeon Green Growth Forum: transforming Tsukuba into a low-carbon emissions eco-city. The 3E Forum is a bit more technical in content and less concerned with policy and culture. It was founded just a few months before the Daejeon Green Growth Forum, although neither group was aware of the other.

Professor Inouye expressed strong support for the efforts of the Daejeon Green Growth Forum and promised close cooperation. Both sides have continued to communicate concerning their future plans.

The following day, the team visited Tsukuba City hall where they met with Honiden Taku, the chief of staff for Mayor Ichihara Kenichi's office. Mr. Honiden expressed great interest in the proposal for cooperation on environmental issues between the cities and drew attention to a previous agreement of October 16, 1999 for economic, cultural and scientific cooperation that had been signed between Daejeon and Tsukuba. He relayed the general enthusiasm of the Mayor's office for the proposal. The presence of Professor Yoo, former director for the environment of Daejeon, made a deep impression on the members of the city hall: Here was a peer from a local government in Korea who had traveled far to advocate cooperation.

The following day, the team visited Japan's National Institute for Environmental Studies for a meeting with Dr. Yasuko Kameyama, Senior

Researcher of the Center for Global Environmental Research. The discussion concerned shared concerns about environmental issues in Asia and global strategies for responding to global warming. The Daejeon Green Growth Forum agreed to pursue a closer relationship with the National Institute for Environmental Studies as part of its larger international strategy.

Daedeok Innopolis also expressed considerable interest in engagement with Tsukuba on environmental issues. After a few months of discussions involving the Daedeok Innopolis, the Green Growth Forum and the Tsukuba 3E Forum agreed to hold an "Asian 3E Forum" in Daejeon in May, 2009—the first time this local effort has become an international player. This Asian 3E Forum will be attended by representatives from Daejeon, Tsukuba and Zhongguancun, the technology cluster around Tsinghua University in Beijing. It will be the first such effort in East Asia.

The next step for the Daejeon Green Growth Forum was to enquire as to whether a consortium of eco-cities might extend beyond Asia to include the United States. There was some reason to believe this might be the case. After all, the Obama administration has put a high priority on environmental issues and a "Green New Deal," identifying global warming as a central concern. In December, 2008, The United States Department of Energy agreed to conduct an "Ecocity Policy Study" with the Ministry of Housing and Urban-Rural Construction of China and to design an ecocity demonstration project. Such a move suggested that the United States could be included in future efforts in Asia.

Yang and Pastreich traveled to Washington D.C. and Palo Alto, California in February, 2009 to seek possible partners for the ecocity project. First they spoke about the activities of the Daejeon Green Growth Forum at the Center for Strategic and International Studies (CSIS) on February 17th stressing the potential for trans-Pacific cooperation. This event at a leading think tank was well attended by policy-makers, including many in industry. Because the talk corresponded exactly with Secretary of State Hillary Clinton's meetings in Tokyo and Seoul, much interest was generated.

In addition, Yang and Pastreich met with Mr. Kyle Danish of VanNess Feldman, an individual deeply involved in current energy and environmental policy in the United States with a deep interest in international exchange. Danish is the author of such important articles as "Glob-

al Climate Change" included in the *Clean Air Handbook*.

The Yang and Pastreich visited Palo Alto where they met with Mayor Peter Drekmeier to discuss cooperation with the city of Daejeon. Drekmeier is the rare example of an environmental activist who has been elected the mayor of an American city. He expressed deep interest in close cooperation and pledged his support. That meeting was followed by meetings with faculty members at Stanford University, including Professors Barton Thompson and Jeffrey Koseff, co-directors of Stanford University's Woods Institute for the Environment. Interest was considerable, especially in the field of environmental technology. Interestingly enough, the city of Palo Alto and Stanford University have not worked closely together, but gave some consideration to this possibility as a result of this approach from abroad. The value of the international component to environmental advocacy at the local level was reconfirmed.

The city of Daejeon achieved considerable recognition as a result of these and other efforts. Daejeon was selected as the location for the 2009 Tunza International Children's Conference on the Environment (August 17-20). This event brings together youth from around the world to discuss their role in responding to global warm-

ing and the Daejeon Green Growth Forum will play a central role.

#### Conclusion: Imagining a Coalition of Ecocities

Addressing global warming and pollution is an international effort. Meetings between presidents and CEOs, however, are not sufficient to address an effective solution because so many of the problems are issues for local government and not central government. The Daejeon Green Growth Forum offers the hope for cooperation between experts in environmental fields of study, local government and citizens. The recent proposal for a working alliance of eco-cities offers up the possibility that local governments around the world can share resources and work together to achieve their goals.

The next step for the forum and its allies in Japan and the United States, and more recently India and Mongolia, will be to try to set up a mechanism that can maintain close cooperation over distance and linguistic gaps. The extent to which such relations can be established through a coalition of ecocities will be essential to developing an effective international response that can do what meetings of world leaders and ministers cannot: implement reforms at the local level.

## **Вопросы совершенствования управления муниципальными финансами в современных условиях**

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Развитие муниципального управления в целом и управления муниципальными финансами, в частности, является одной из приоритетных задач государства. Так, постановлением Правительства Российской Федерации от 22 мая 2004 г. N 249 была одобрена концепция реформирования бюджетного процесса в Российской Федерации в 2004 - 2006 годах, направленная на повышение ре-

зультативности бюджетных расходов и оптимизацию управления бюджетными средствами на всех уровнях бюджетной системы страны. Обоснованные в названной концепции необходимость и предпосылки реформирования бюджетного процесса, обострившиеся в период экономического кризиса, до настоящего времени продолжают оставаться актуальными.