

CASE STUDY

Taking the Green Growth Path to Development



The transition to a new growth paradigm includes the development of renewable energy. Photo exclusively licensed to ADB until 2021.

Environment-friendly development policies helped the Republic of Korea reduce carbon emissions while sustaining high economic growth.

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Overview

The high economic growth that the Republic of Korea has achieved since the 1960s is attributed to its successful transitions in industrial structure—from the primary industry in the 1960s to the heavy and chemical industries in the 1970s and 1980s and then to digitization in the 1990s. However, the development strategies based on fossil fuel energy-intensive heavy and chemical industries led to increases in energy consumption and hence greenhouse gas (GHG) emissions.

There were efforts to protect the environment, but infrastructure investments that did not take into account environmental impact became too costly to be fixed later. This prompted the creation and implementation of a new paradigm for national economic growth that would result in significant yet sustainable development. Based on a low-carbon, green growth model, this strategy promotes the greening of businesses and communities in particular.

Challenges

The Republic of Korea has not been completely indifferent to the environment while it has been implementing high-growth strategies. Even in the process of economic growth, efforts to address environmental problems were made, such as reforestation and rehabilitation of rivers that were contaminated by industries. But more than simply being responsive to adverse environmental effects, green growth strategies are needed to transition to environment-friendly development policies from conventional development policies that may have caused environmental deterioration unintentionally.

Sustainable economic growth would be almost impossible to achieve with the traditional growth paradigm based on fossil fuels. Along with population growth, energy demand has been increasing rapidly, yet natural resources are finite. Global warming and climate change caused by the increase in GHG emissions required a transition to a new growth paradigm.

Context

In 2005, the green economy as a new development strategy was discussed during the Fifth Ministerial Conference on Environment and Development in Asia and Pacific, and the Republic of Korea was among those who took part in the discourse. In 2008, green growth policies were established as the Republic of Korea's new paradigm for economic growth, and the country became an active participant in the international movement. In the same year, President Lee Myung-bak's commemorative address for the 60th anniversary of the Korean War proclaimed "Low Carbon, Green Growth" as the axis of a new vision that will achieve sustainable growth while reducing emissions and pollution.

Using its experience with implementing long- and mid-term plans to achieve high growth in short periods of time, the government created the National Strategy for Green Growth (2009–2050) as a comprehensive plan for green growth and the Five-Year Plan for Green Growth (2009–2013) as a mid-term strategic plan. The latter was established by the Presidential Committee on Green Growth, together with various departments and specialized civilian institutes.

Solutions

The "Five-Year Plan for Green Growth" proposed 10 policy directions across three strategies. "Effective Mitigation of Greenhouse Gas Emissions" is included in the first policy direction, and it is the most common green growth policy. The Five-Year Plan for Green Growth set four tasks related to GHG reduction, namely: 1) manage the GHG emissions statistics and achieve the efficiency of the reduction targets set by establishing a national comprehensive system for greenhouse gas; 2) improve energy efficiency and energy-saving practices; 3) recycle resources and expand carbon sinks, and 4) achieve low-carbon targets in the country.

In order to provide a legal basis to achieve the GHG reduction targets, the "Framework Act on Low Carbon, Green Growth" and its enforcement decree took effect in 2010. The "New Energy and Renewable Energy Development and Use and Dissemination Promotion Law" and "Act on the Allocation

and Trading of Greenhouse Gas Emission Permits” were also introduced.

In addition to policies for GHG emissions reduction, various policies were implemented to reduce the use of fossil fuels, strengthen energy independence, develop green technologies, implement green changes to the manufacturing industry, transform the land into environment-friendly spaces, and promote the green lifestyle.

Reduction of the use of fossil fuels and the enhancement of energy independence referred to building a high energy-efficient and low-consumption community, expanding clean energy supply and nuclear power production capacity, and enhancing the capacity of overseas resource development.

The green growth policies were intended not only to create low-carbon and high value-added industries but also to pursue greening of existing industries. It included fostering green small and medium-sized enterprises and business ventures. Greening of existing industries involved the development of low-carbon technologies and smart grids in the areas of secondary batteries, steel and iron, and power generation.

Meanwhile, in the land and transportation sector, the government identified key indicators for action plans, such as low-carbon green urban development, expansion of the ecological space, expanding green buildings, building a green transportation system, and promoting the use of bicycles.

The “green revolution of life” was another policy direction. It identified five practical aspects of sustainability. These are 1) green growth education and green citizen values cultivation; 2) diffusion of green life practices; 3) green consumption; 4) green village formation and development of movements; and 5) ecological tourism.

Results

Greenhouse gas reduction

Performance indicators associated with the GHG that were compiled by Statistics Korea showed that the GHG per unit of gross domestic product (GDP) increased from 0.617 kilogram of carbon dioxide (CO₂) per thousand Korean won (KRW) in 2007 to 0.641Kg CO₂/thousand KRW in 2010. GHG increased to 668.8 million tons of CO₂ in 2010 from 590 million tons in 2007.

Meanwhile, forestry greenhouse gas absorption improved, reaching 39.6 million tons of CO₂ in 2010 from 36.2 million tons CO₂ in 2007. Policies to increase the carbon sinks were effective.

Reduction in fossil fuel-dependence

The main outcomes indicated that energy consumption per GDP increased to 0.251 total energy consumption (TOE) per million KRW in 2012 from 0.248 TOE/million KRW in 2009. On the other hand, oil and gas development rate rose to 13.8% in 2012 from 9.0% in 2009. Also, the renewable energy supply rate reached 3.17% from 2.50% during the same period.

Promotion of green industries

The number of companies that participated in green partnership construction more than doubled to 1,500 in 2013 from only 685 in 2009. Also, 10 ecological industrial clusters and 10 low-carbon industrial complexes were built in 2013.

Shift to low-carbon development

Based on the data released by Statistics Korea, the per-capita urban forest area in living zones increased to 7.95 square meters per capita in 2011 from 7.76m² per capita in 2009. The rate of passenger transport and subway share rose to 25.9% in 2011 from 24.3% in 2008. In contrast, environmental protection expenditures for GDP decreased slightly to 2.73% in 2011 from 2.94% in 2008.

Adoption of a green lifestyle

Household energy consumption per capita was almost unchanged to 0.434 TOE per person in 2011 from 0.432 TOE/person in 2008. During the same period, domestic water consumption per capita decreased to 335 liters per person per day from 337 liters. Domestic waste per capita similarly declined to 0.95 kg per person per day from 1.04 kg.

Lessons

The purpose of green growth policies being implemented in the Republic of Korea and the international community is to get citizens to think beyond themselves. Several lessons can be learned from the Republic of Korea's adoption and implementation of its green growth strategy.

First, green growth can be a strategy for achieving sustainable development. In order to achieve sustainable development, however, the government needs to consider not only economic and environmental priorities but also social integration or social development concerns.

Second, development projects should take into account their environmental impact as well as achieve social consensus. From the planning stage, various opinions need to be gathered and governance needs to be established to incorporate these opinions.

Third, increased investments in green industries can boost the economy as these result in higher export volumes than when investments are made in non-green businesses. This is due to the implementation by developed countries of various environment-friendly policies and the increase in imports of environment-friendly products.

Fourth, legal and institutional foundations must be established to promote green growth policies. The core organization behind the country's green growth policies was the Presidential Committee on Green Growth that established the Five-Year Plan for Green Growth. Under its leadership, related departments cooperated to establish legal foundations for green growth policies.

Fifth, the government and private sector have specific roles to perform toward economic growth. For developing nations at the beginning stage of economic development, the international competitiveness of the private sector is weak, and investment resources are not sufficient, thus requiring government-led economic policies. However, as development progresses, the economy shifts to a market-led economy, and the government needs to support this transition.

Sixth, in order to support developing nations in promoting green growth policies, international cooperation from the leaders of green growth and international organizations is necessary. This would require mitigation of climate change impacts and adaptation, increased productivity of economic infrastructure, the greening of industries, and technological and human resource capacity building.

Resources

Kang, Sung Jin, et. al. 2014. *Modularization of Korea's Development Experience: Experiences and Lessons of Green Growth*. KDI School of Public Policy and Management. Seoul.

K-Developedia. *Experiences and Lessons of Green Growth*.



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