Critical Review and Evaluation of Greenbelt Policy: The Case of South Korea

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I. Introduction

Around the world greenbelt/urban containment policies have been created in order to prevent the ever-increasing problems associated with sprawl and the protection of our natural capital. The role of such policy is also expect to generate significant social and environmental benefits, including amenity and recreational value, bequest value, and protection of open space, agricultural land, natural resources, and life supporting ecosystem services. However, greenbelts have long been a controversial public policy instrument because of their purported negative consequences, including increased land and housing prices in the urban area contained by the greenbelt, decreased greenbelt land prices, loss or restriction of development rights for greenbelt landowners, increased urban congestion, and other undesirable consequences (Bengston and Youn 2006). In some cases, greenbelts have been blamed for increased sprawl and higher commuting costs as development goes beyond the greenbelt.

In the case of Korea, urban containment and greenbelt policy were enacted for the purpose of preventing an overly disorderly expansion of cities while preserving the remaining green space for future development and preserving the existing natural environment (Jin 2001). The greenbelt policy has been seen as a both a positive and negative legislation decision. The debate about greenbelt policy is part of a broader debate among urban planners about the desirability and sustainability of compact cities (e.g., Jenks et al. 1996, Gordon and Richardson 1997). The issue at hand is whether or not the greenbelt policy has created a net

increase in social benefit due to the protection of open space and environment in around the cities of Korea.

This paper will identify and evaluate greenbelt policy and its reform, prevention of urban sprawl, the conflict between the environmental preservation value and private property rights, the need for housing as well as a series of criticism and recommendations based on the existing related literature.

II. Background of Greenbelt Policy in Korea

Growth management in Korea can be traced back to the early 1960s when the concentration of population into the Seoul Metropolitan Region, which is called the 'Capital Region', was felt to be a serious problem.¹ Throughout the 1970s, a variety of policy measures have been initiated to reduce the excessive growth of Seoul, including relocation of central-government agencies to outside of the Capital Region, introduction of head tax, delegation of central-governmental functions to local governments, and so on. In addition, several laws were enacted to facilitate the 1977 Population Redistribution Plan for the Capital Region. However, various growth-mitigation measures initiated throughout the 1970s have obviously failed to achieve their claimed objective. The pace of population growth in Seoul did not fall, but rather explosive growth spread over the Capital Region. (Cho 2002)

The same period also saw the initiation of two innovative laws: the National Land Use and Management Law (NLML), and the City Planning Law (CPL). The CPL, applied to 'city planning areas' was introduced in 1971 and the legal foundation for Korea's urban growth management policies, including Greenbelts. It was later shaped by relevant policies in the

¹ Seoul and the Capital Region have witnessed a tremendous increase in population over the past three or four decades. In 1970, the population of the capital region (including Seoul) was 8,930 thousands, taking up about 28% of the nation's total population 32,241 thousands. In 2000, the capital region's population grew to 21,354 thousands or 46.3 % of the total population, 46,136 thousand people (National Statistics Office, 2004).

1972-1981 National Comprehensive Physical Plan (NCPP) drafted in 1973. The NLML, initially enacted in 1972, was the general framework for the nation's land use, focusing more on rural areas (Lee 2004). In 2003, however, the NLML and the CPL were incorporated into one, National Land Use and Planning Law.

Greenbelts, formally referred to as Restricted Development Zones (RDZs) in Korea, were designated around Seoul and 13 other cities between 1971 and 1973. The greenbelt areas in the Capital Region, including Seoul, is one of the largest which totals about 1,500 km² (shown in Figure 1) and represents about 27 % of the nation's total greenbelt area. The total greenbelt areas designated since the 1970's cover more than 5,000 km², or about 5% of the nation's land. These designations have directly affected more than 700,000 residents within over 100 different local jurisdictions including seven metropolitan cities. There is no metropolitan city or province that does not have greenbelt areas within its jurisdiction. In most cases, the widths of greenbelts are over 4 km and, in some areas, more than 20 km. Approximately 80 % of the Green Belt land is privately owned (Ministry of Construction and Transportation [MOCT], 1999). (Lee 2004)



Figure 1: (Left) RDZ of Korea and (Right) Seoul's Greenbelt

Source: KRIHS Gazette (2001) "Greenbelt zone regulations are relaxed across the country". vol. 16

The Green Belt policy entails five primary objectives: preventing over-concentration of the population in the Capital Region and other big cities, addressing national security concerns, curbing urban sprawl, controlling land speculation, and protecting the natural environment. One of the most important early objectives was to reduce the concentration of the Korean population in Seoul (Lee 2004).

III. Greenbelt Policy Reform²

South Korea's greenbelt policy has remained essentially unchanged for almost 30 yr. Public discussion of the problems associated with the greenbelt was prohibited during the Park regime (Lee and Linneman 1998), which lasted until 1979. Subsequent military governments adhered to the greenbelt policy. Hence, expressions of opposition to the greenbelt policy were rarely heard in its early years. However, opposition from the greenbelt landowners was voiced after the current civilian republic was established in 1988 (Park 2001). During the presidential election of 1997, opposition party candidate Kim Dae Jung made a campaign promise to review and reform the greenbelt policy (Choe 2004). After winning the election, the National Committee for Green Belt Policy Reform was established in early 1998. After an arduous, yearlong process of meetings and deliberations, the Committee submitted a draft report to the Ministry of Construction and Transportation (MOCT) on 24 November 1998 (Choe 2004).³

² Main parts of this section is a summary of Bengston and Youn (2006) paper.

³ The report recommended the following reforms: (1) The greenbelt policy should be maintained as a growth management tool, but greenbelt zones should be lifted around small- and medium-sized cities that have little development pressure, and they should be replaced by conventional zoning regulations; (2) In large cities that retain greenbelts, the boundaries should be redelineated, based on environmental assessments and other local

While conflict among greenbelt stakeholders raged, a committee of delegates from the MOCT, the Korea Research Institute for Human Settlements, and other research institutes was established to work out practical and legal details of greenbelt reform (Choe 2004). However, because they were unable to reach an agreement among stakeholders, the MOCT unilaterally announced a new RDZ policy on 22 July 1999. The committee recommended that greenbelts be eliminated around seven small- and medium sized cities, and that the land be rezoned as either conservation- or natural-green areas, using the zoning categories from Korea's City Planning Law. Greenbelts in the seven larger cities were to be maintained, but redrawn based on environmental assessments that included factors such as topography, land suitability, ecological sensitivity, and environmental vulnerability (Choe 2004).

Redrawing of the greenbelt boundaries was to be accomplished using metropolitan areawide planning, but an agreement between the many municipal governments in the Capital Region proved to be contentious. An effort to develop a metropolitan area plan for the Capital Region began in 2002 and nearly 113 km² of Seoul's greenbelt has been proposed to be released. The land is to be made available for development according to the 15-yr metropolitan plan, rather than all at once (Bae and Jun 2003).

Current administration lead by President Lee also decided to remove development bans on nearly 310 km² of greenbelt, an area half the size of Seoul, by 2020. The government proposed a plan in 2008 to build a large number of homes in this area to provide affordable housing (known as "Bogeumjari") for low income families. In particular, 320,000 units will be available at low prices in greenbelt zones close to downtown areas and easy access to public transportation. The government pledged that it would construct a Bogeumjari

factors; (3) A scheme to recoup windfall benefits due to abolishing or relaxing greenbelts should be introduced to prevent land speculation; (4) In areas that are to remain greenbelts, landowners should be compensated for their loss of development rights, or offered the option of having their land purchased by the government at a fair price; and (5) Villages above a certain size, within greenbelts, should be given special permission for developments needed to improve their communities.

apartment complex on a site with a low designated preservation value.

In May of 2009, four greenbelt zones - Segok and Umyeon in Seoul; Misa and Weonheung in Gyeonggi - were selected for the first round of buildings, and four additional sites were chosen for the second batch of bogeumjari public apartments (shown in Figure 2). These sites are chosen because of their proximity to the capital. They are all within 15 to 21 kilometers from central Seoul.



Figure 2: Sites for bogeumjari apartments. (source: JoongAng Daily Oct. 20, 2009)

IV. Critical Review and Evaluation

1) Urban Sprawl and Greenbelt Policy

Many different definitions of sprawl exist in related literature and all follow a similar theme. Sprawl (urban or rural) is a process of growth in which the fringes of a city growth and change encroaching upon normally undeveloped green space. Sprawl is a result of growth pressure on a region going beyond the fringes of an urban area. In many cases sprawl is the result of leap frog style development where growth leaps over protected areas, such as greenbelts, into undeveloped open space unprotected by such policy. Sprawl is the cause of high commute times, decentralization of housing and employment, associated socioeconomic effects on people dealing with it. Sprawl is a growth phenomenon that is a cause of concern for many. Urban containment and growth management policies have emerged as policy and land use tools used to contain, control and prevent sprawl.

In the case of Korea, the greenbelt policy of 1971 was envisioned to prevent outward growth in order to preserve natural environments and open space outside of a city's limits. As time passes growth has pushed the boundaries of cities in Korea to their fringes causing leap frog development and sprawl into areas not protected by the greenbelt policy. According to Bae (1998) and Cho (2002) the greenbelt policy has failed to control sprawl. The natural behavior of growth was stymied due to the presence of the greenbelts causing sprawl. The increasing emergence of small to mid level developments in previously exurban areas has shown that growth is going beyond the greenbelt areas. Kang (1994) also argues that Urban sprawl was not prevented, but merely pushed farther out beyond the Greenbelt boundaries. The natural environmental preservation strategy for Greenbelt lands, the use of the Greenbelt as a dumping ground for locally undesirable land uses (LULUs), and the construction of public agency facilities.

In the minds of most, urban sprawl is forever connected with the image of the suburban developments spread far and wide with house after house. The situation for Korea is more along the lines with the leap frog development and the associated sprawl. With the restricted development zones (RDZ), greenbelts and other land use policy in place, growth pressure have found a way to have development go beyond the control of in place urban containment policy.

2) Public Opinion, Environmental Preservation and Private Property

Public opinion and support for greenbelt policy has evolved over time as development pressures increased since the 1970s. The pressure to grow continues to intensify as urban centers such as Seoul are forced to grow up, not grow out. In a country where parks and open space are at a premium, the detractors of relaxing greenbelt policy rally together in order to save and preserve greenbelt areas citing the uniquely high recreational benefits gained by Koreans. According to Bae (1998), many groups have expressed a concern about developing greenbelts citing the environmental benefits they provide while those private citizens living within the greenbelts feel that greenbelt policy deprives them of land value appreciation and other property rights.

The significant benefits gained from the greenbelt policy extend beyond the obvious environmental benefits of protecting natural open spaces. The benefits gained from the recreational and social aspects of that protected open space is considered by many scholars as the most significant factor in the cry for the continued preservation of Korea's natural environment. Lee and Linneman (1998) measured the dynamics of the amenity effect of Seoul's greenbelt. They found that, during 1971, the amenity effect of the Seoul greenbelt was not perceived as acutely as in 1998. Many lived far from the greenbelt areas and were many benefits gained from the greenbelt were limited by the distance and accessibility to the areas.

As the years went by and urban development crept closer and closer to the urban fringes, the net benefits of increased proximity to the greenbelt areas increased as private citizens enjoyed the increased accessibility to natural open spaces. Urban development continued reaching and leaping over the greenbelt boundaries. According to Lee and Linneman (1998) despite the benefits gained from the greenbelt and the accompanying policies, the scarcity of open space within the urban zones increases. The greenbelt policy forces developers to either leap frog beyond the boundaries or grow within them. Therefore urban open space is subject to infill development disappearing all together as growth pressures increase. Had the greenbelt policy been relaxed or lifted, that open space within cities may or may not have remained providing an additional recreation benefit within large urban areas. Lee and Linneman (1998) concluded that the total value of the services provided by greenbelts peak as the pressures of congestion grow. As a result, congestion costs would increase as housing costs increase above their optimal levels, losses of green space which would have remained without the greenbelt policy and the increased traffic congestion due to leap frog development.

Bengston and Youn (2006) considered the many different benefits and costs of the greenbelt policy. The benefits of greenbelts were put into three categories: amenity value (scenic beauty and recreation), fiscal savings (service delivery efficiency and infrastructure) and ecosystem services (air purification, habitat and biodiversity). The benefits ranged from both the economic to the environmental as the many different environmental benefits have yet to be fully observed. Also the fiscal savings based on the density due to policy have yet to be fully understood. Bengston and Youn (2006) have stated there is a high degree of possibility of great savings due to the greenbelt policy's effect on density and the resultant efficient service delivery through infrastructure. The costs due to greenbelt policy were seen as increases mostly economic in nature as the policy was stated as a supply side constraint to housing and land prices and ever increasing commute times. The demand side factors such as the many above listed benefits also showed to put upward pressure on land and housing prices as well.

Public support and interest in the greenbelts have manifested in various ways. Many past administrations have been directly involved in greenbelt policy and public supports or lack thereof has always been a very politically charged issue. Lee (2004) conducted a multivariate analysis of public support of greenbelt policy. Lee (2004) found that greenbelt policy is seen as necessary and beneficial in controlling growth while preserving the natural assets of Korea. The negative impacts as mentioned by Bengston and Youn (2006) and many other scholars have agreed that the policy has caused undue stress to those landowners living within the protection zones. Greenbelt policy has been an ever present impediment to local urban development and the marked differences in land and housing costs have served to be the rallying point for those for dismantling greenbelt policy. Lee (2004) recognized some unexplainable factors in his findings. Civic engagement, status and education levels did impact the amount of support for greenbelt policy. Growth pressure was determined to be a cause for either support or resistance to greenbelt policy. Lee (2004) has surmised that despite the support or lack thereof, growth and development pressures will ultimately define the amount of support and continued existence of the greenbelt policy currently in place. He also recognized that the support depends upon the local and regional growth pressure in place. Greenbelt policy will not likely survive with such continued growth and development pressures. Public support for or against greenbelt policy is indelibly linked to the amount of growth and development pressure experienced by a region.

"Greenbelts have long been a controversial public policy because of their purported negative consequences, including increased land and housing prices in the urban area contained by the greenbelt, decreased greenbelt land prices, loss or restriction of development rights for greenbelt landowners, increased urban congestion, and other undesirable consequences. Greenbelts also have been accused of causing sprawl and higher commuting costs as development jumps over the greenbelt. But greenbelts also generate significant social and environmental benefits, including amenity and recreational value, bequest value, and protection of open space, agricultural land, natural resources, and lifesupporting ecosystem services." (Bengston and Youn, 2006)

V. Summary

The greenbelt policy has been in effect since 1972 and has been seen as both a positive and negative legislative decision. By the 1980s, Korea and especially Seoul have grown and begun to push against the greenbelt boundaries causing growth pressure to arise and thus create a call for relaxation of greenbelt policy. Many proponents of the policy say that the policy protects the natural environment ensuring continued enjoyment and use by the public. The detractors of the policy say that the strict development regulations cause inconveniences and a number of economic and social problems for those living in villages within the greenbelt protection zones. Many cite the increased density and congestion within large cities such as Seoul due to the greenbelt policy. Despite the greenbelt policy, urban growth continues outward leap frogging the protected zones creating a form of accelerated sprawl. This is a direct result of the natural behavior of population growth and development due to the strict regulations.

The issue at hand is whether or not the greenbelt policy has created a net increase in benefit due to the protection of open space and environment in around the cities of Korea. The debate of the costs and benefits of the greenbelts has raged on and continue to intensify as congestion and density plague large urban centers such as Seoul. Bae and Jun (2003) put forward an alternative view of the costs and benefits of greenbelt policy based on the concept of "counterfactual planning". They examined how different a place might have been given a different policy decision and found that the greenbelt policy of the Seoul Metropolitan Area has had some adverse effects due to the interruption of natural urban growth patterns resulting in accelerated sprawl and higher social costs in terms of transportation (commute times and the decentralization of housing and jobs).

Had the current greenbelt policy never occurred in the early 70s, growth and development could have been more focused in current protected areas, density reduced in Seoul, a more equal distribution of jobs and housing and lower commute times? Korean greenbelt policy has served to act as a land use planning policy tool for the past few decades based on the very unique and strict demands and restrictions placed on the private citizens and the government. Geographic, economic and social constraints unique to Korea have all played a role in the continued criticism and support for the national greenbelt policy.

VI. Criticism and Recommendation

Despite the government efforts to reform the greenbelt system to enhance the social welfare, it seems the government has not consider (or underestimate) seriously the possible impact of the adjustment. The government has not attempted to systematically investigate the effects by its policy change. There are continual arguments about the possibilities of considerable increase in population and air pollution if the greenbelts of the capital region were released, which may contradict with the policy of balanced regional development as well as the green growth. If main goal of current administration is to adopt low carbon growth, releasing greenbelt area for the development contradicting their strategies by reducing the vital function of greenbelt to absorb carbon dioxide within the capital region. The government should adopt more systematic simulation to investigate the population impact as well as the environmental impact of the greenbelt adjustment.

Additionally, the government underestimated the possibility of land price increase and land speculation due to the greenbelt readjustment. Generally, land prices of greenbelt are between 1/2 to 1/3 of land prices of non-greenbelt area with similar grade and condition. Therefore, there is possibility of speculative investments if the greenbelt areas are to be

released. If this speculative investment becomes prevalent, there will be invigorating criticism on the greenbelt policy reform in spite of its necessity. The government needs to implement more stringent investigation on land transaction and price trend within the greenbelt area.

It is also unwise to lifting the greenbelt as a part of the housing problem. It seems viable of government's arguments by providing new housing (especially for low-income families) in greenbelt area is better than creating "new towns" in distant locations with respect to social welfare, existing infrastructure and costs. However, increasing housing supply near the capital and supplying large numbers of building sites by lifting the greenbelt should be discussed more carefully. Even with higher cost, the government should consider energizing reconstruction and redevelopment of the inner city a priority as a means of increasing housing supply near the capital. Redeveloping areas that are deteriorating within the city and redeveloping buildings that are outdated should increase the supply of housing.

"The government should have more convincing plans to use the land to improve the lives of future generations, rather than just providing a few more apartments. The capital gains tax system can be revised after a year's implementation; policies on land use should look a hundred years ahead." (Korea Herald 2009)

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