Chapter 2

National Policies for Urban Development in Korea

This chapter analyses Korean urban policy and provides recommendations to address urban policy challenges. The chapter begins with a brief examination of the trajectory of urban policy in Korea, which shifted from a polarised growth pole strategy in the 1960s into promoting strategies emphasising qualitative urban management and urban competitiveness. Four policy priorities are recommendations for strengthening the co-ordination and coherence of Korean urban policy: i) *address the current policy fragmentation across ministries and among local governments through a comprehensive, multi-sectoral approach to urban development and increased co-operation among sub-national administrations;* ii) *adapt urban policy to future demographic trends, such as ageing and an increasing immigrant population;* iii) *advance a more tailored urban policy to address the different needs of Korean cities; and* iv) *close the gaps between expected and actual outcomes in urban planning, through more widespread use of urban modelling and greater* ex post *evaluation and monitoring.*

Korea is currently faced with a range of urban challenges that hinder the competitiveness of many of its cities. Rapidly growing medium-sized cities are facing increasing urbanisation pressure, especially those adjacent to larger cities such as Busan and Seoul, and suburbanisation, urban sprawl and unmanaged urban growth are increasing threats. Changing demographic trends also pose a challenge to policy makers: Korea will look quite different in 2020, with the elderly accounting for over 15% of the population and immigrants comprising 5% of the population. In addition, due to its energy-intensive economy, rising GHG emissions and deteriorating environmental quality are also increasingly evident in urban areas.[1] The articulation of a national urban policy will be fundamental in addressing these challenges. The trajectory of urban policy in Korea has transitioned from strategies promoting polarised growth poles to decentralisation and balanced quantitative growth, and finally, toward qualitative urban management that seeks to maximise urban competitiveness.

Nevertheless, four policy priorities could help to strengthen the co-ordination and coherence of Korean urban policy. First, a comprehensive, multi-sectoral approach to urban development could help to correct the high level of policy fragmentation among central ministries, whilst co-operation among local governments could be encouraged in light of the current piecemeal approach to local development, with separate plans for economic, spatial and sectoral development. Second, measures could be implemented to adapt the urban environment to an ageing and increasingly ethnoculturally diverse urban population, including modifications to urban design and zoning and land use regulations. Third, Korea could look to better tailor its urban policies to the different needs of cities, including the specific challenges faced by Seoul, other large cities outside the Capital Region and lagging cities or districts. Finally, the gap between the anticipated and actual outcomes of urban plans and policies could be addressed by a more widespread use of urban modelling to predict potential outcomes, as well as enhanced strategies for *ex post* evaluation and monitoring.

2.1. An ongoing reform of Korean national urban policy

Since the 1960s, Korean national urban policy has evolved in response to changing social and economic circumstances. While urban development from the 1960s to 1980s was concentrated in a handful of large, metropolitan cities, structured around a growth pole strategy, balanced territorial development became a policy priority during the 1990s, with measures to limit the excessive centralisation of the Capital Region in favour of the development of other areas. Most recently, the Korean government has emphasised qualitative urban management initiatives in an effort to maximise urban competitiveness.

From a polarised growth-pole strategy and decentralised, balanced quantative growth…

Industrial modernisation (1960s-80s): Growth-pole strategy

The growth-pole[2] strategy was at the centre of Korean urban policy between the 1960s and 1980s. It was considered an effective policy, because there were limited resources to develop the whole country evenly at one time. Under this strategy, metropolitan cities, Seoul in particular, and heavily industrial cities, including Ulsan, Gumi, Pohang, Banwol and Changwon, were developed as Korea's major economic and employment centres. At the same time, large-scale infrastructure projects, such as the Gyeongbu highway to connect Seoul and Busan, were constructed to support national economic development.

The growth-pole strategy also gave more weight to new development in and around some large cities, known as new town development, in addition to urban renovation in rural areas. Along with establishing industrial cities, Hwagok and Yeouido in Seoul and the Gwangju area in Seongnam-si (located in Gyeonggi-do), were planned for providing houses, while Gwacheon-si in Gyeonggi-do was built for administrative functions in the 1980s. Nevertheless, the growth-pole strategy, despite its effectiveness, entailed an over-concentration of population and industry in a few large cities, notably Seoul, which in turn lead to urban problems like a shortage of housing[3] and infrastructure, along with the encouragement of urban sprawl, as discussed in Chapter 1 (see Figure 1.37).

Decentralisation and balanced quantitative growth strategy (1980s-90s)

From the 1980s onward, with a growing demand for balanced national development policy, Korean policy makers pursued a decentralisation policy to restrain the population and concentration of industry in the Seoul Capital Area. The government relocated public administration services, public corporation offices and university branches outside Seoul, offered financial incentives to firms to relocate, and enacted regulations to curb the expansion of industrial establishments within Seoul (OECD, 2005a). In particular, the *Capital Region Readjustment Planning Act* (1994) divided the Capital Region into three categories,[4] in which the construction of new factories, buildings and universities was strictly limited and over-concentration taxes could be levied (OECD, 2005a). Along with relocation of the main urban functions outside Seoul, the Korean government took on a sweeping reform for decentralisation. The revision of the Local Autonomy Act in 1988 provided the legal foundations for the re-establishment of local assemblies in 1991 and direct elections of local chief executives in 1995, along with empowering central government's mission to local government. This decentralisation process has been pushed further by the succeeding governments.[5]

Decentralisation efforts have nevertheless been criticised, on the one hand for curbing the growth of Seoul and undermining Korea's competitiveness on the international stage, and, on the other, for being ineffective in fostering dynamism and creative capabilities outside the Capital Region. For example, despite policies to achieve more balanced territorial development, as seen in Chapter 1, the Capital Area has still dominated the national economy. Furthermore, according to a 2008 survey conducted by the Korea Chamber of Commerce and Industry, nearly 67% of surveyed companies indicated that they would delay or abandon investment in the Capital Region if the existing regulations in the Capital Region continued. Firms also expressed concerns about the significant shortage of available land in the Capital Region, which compels investors to look for available land

overseas. For example, annual overseas investment was USD 1 908 million in 1995, but increased to USD 7 628 million in 2007.

Further, decentralisation in Korea has not been completely achieved. A significant portion of local governments' work is still executed by the central government. According to a survey of the Korean Institute for Public Administration (KIPA), only 27% of total government operations were directly performed by local governments in 2001, whilst only 55% (6 306 units) of local government operations were purely local in 2005 (OECD, 2009c). Further, as will be discussed in Chapter 3, despite continuous efforts at fiscal decentralisation, many local governments still depend largely on earmarked and discretionary funds from the central government. For example, the average fiscal autonomy of local governments registered 52.2% in 2010 (Korea Statistics Office, 2011). At the same time, the central government has developed numerous special agencies to carry out its key functions at the local level. Many ministries have established affiliated administrations or regional branches to implement their core regional policies, while delegating many insignificant functions to local governments. For instance, the Small and Medium Business Administration (SMBA), an affiliated central government authority under the supervision of the Ministry of Knowledge and Economy, directly provides funds for SME and start-ups. There have been continuous requests from local governments to reduce the roles of special agencies and to transfer their key functions to sub-national governments in order for decentralisation to fully materialise. As a response, in 2006, the Jeju Province Special Autonomous Act was established to integrate branches of the central government into the Jeju province government. And in July 2008, the Korean government announced a mid-term plan to divest considerable powers from special agencies to local governments.

Specific challenges in the Capital Area remain, including soaring real estate prices due to an acute housing shortage, and increased concerns over urban quality. This has compelled the government to respond with the construction of five additional new cities around Seoul: Bundang, Ilsan, Pyeongchon, Sanbon and Jungdong, all of which were built between 1989 and 1996, with a minimum of 165 000 residents. The construction of these new cities generated controversy among national policy makers. Although the provision of large quantities of new housing has helped to stabilise housing prices, the five new cities have led to an acceleration of the population concentration in the Capital Area and to real estate speculation.

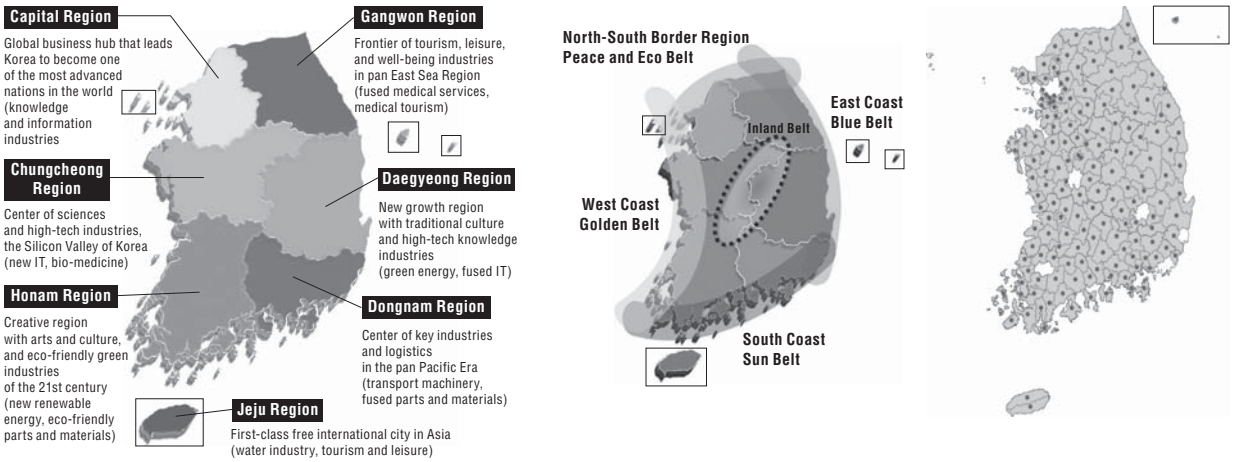
… toward qualitative urban management and maximising competitiveness (2000-)

Most recently, national policy makers have shifted their focus to stimulating competitiveness among regions and urban areas, with a new interscalar paradigm to structure territorial development. The second revision of the *Fourth Comprehensive National Land Plan* proposes a new, three-layer structure for urban and regional development that centres on maximising regional development potential, dividing the country into seven (5+2) mega-regional economic zones, which are linked with and complemented by supra-economic regions (belts) and 161 basic residential zones[6] (Kim and Koo, 2009) (Figure 2.1) :

- *Supra-economic regions (belts)(SER)* are intended to secure international competitiveness through economies of scale in industry, research and development (R&D) and infrastructure. The concept is based on the idea that a city in the narrow sense is a less viable unit of spatial organisation than city/regions or regional networks of cities, an analysis confirmed by the OECD (2006a). A supra-economic region (SER) is characterised

Figure 2.1. **Regional development strategy in the second revision of the *Fourth Comprehensive National Land Plan***

Seven mega-economic regions (left), four supra-economic belts (middle), 161 daily living spheres (right)



Note: This map is for illustrative purposes and is without prejudice to the status of or sovereignty over any territory covered by this map.

Source: Presidential Committee on Regional Development, "Regional Development Policy", Presidential Committee on Regional Development, Seoul, *http://eng.region.go.kr*.

by commonalities in economic, social, cultural and political aspects and functions as a single economic entity. A SER satisfies conditions based on population and agglomeration, among other characteristics[7] (Box 2.1).

- *Seven mega-economic regional zones (MER)* are designed to improve regional competitiveness through interconnection and co-operation among metropolitan cities and provinces. The seven metropolitan cities and nine provinces are grouped into five-plus-two economic regions.[8] Each region is composed of one to three large cities and 5 million to 8 million people, with the exception of the Capital Region (23 million), Gangwon and Jeju (1% to 3% of total population). These cities and their hinterlands account for more than 50% of the gross regional product (GRP) on average. Each MER has an *Economic Regional Development Plan* (ERDP) and an Economic Regional Development Committee that supervises the design and implementation of the ERDP. ERDPs have a strong impact on cities in a region because they concern industry, science and technology (S&T), cultural, infrastructural and institutional issues that affect urban areas to a large extent. As a consequence, MER initiatives touch upon the development of cities and could be considered a new element of Korean economic urban policy.
- *Daily Living Spheres (DLS)* are schemes for local areas that correspond to the space of residents' everyday life. The objective of each DLS is to improve living standards through the provision of stable jobs and basic services to cities and counties. A total of 161 cities and counties (*gun*), excluding wards in Seoul and other metropolises, are eligible for the scheme, accounting for 54% of the population in 2010 (Korea Statistics Office, 2011). The plan, which may also be reflected in local urban management plans, calls for local governments to foster growth potential and for the central government to provide support to guarantee minimum living conditions. In particular, each DLS seeks to provide development directions for small and medium-sized provincial cities that have been overlooked in the nation's metropolitan-focused development policies. Although not mandatory, over 90% of the Daily Living Spheres make their own development plans, which include strategies to mobilise local industries using local endowments, to leverage

Box 2.1. **Supra-Economic Regions Outlined in Korea's second revision of the Fourth Comprehensive National Land Plan (CNLP), 2011-20**

- *East Coast Supra-Economic Regions (Energy and Tourism Industry Belt):* The Comprehensive National Land Plan, or CNLP (2011-20) aims to develop a hub of new and renewable energy space (new materials and bio-technology, nuclear energy cluster), tourism and leisure
- *West Coast Supra-Economic Regions (New Industry Belt):* The CNLP (2011-20) plans to foster state-of-the-art information technology (IT), automobiles and logistics, and develop a centre for international business
- *South Coast Supra-Economic Regions (Sun Belt):* The CNLP (2011-20) aims to support a hub for infrastructure, logistics and coastal tourism.
- *North-South Border Belt (Peace–Eco Belt):* The CNLP (2011-20) will foster a central zone for intra-Korean trade, preserve environmental resources in the De-militarised Zone (DMZ), and develop green tourism.

Source: Ministry of Land, Transport, and Maritime affairs (2011a), "Second Revision of the Fourth National Comprehensive Plan" (in Korean), Ministry of Land, Transport, and Maritime affairs, Gyeonggi-do.

cultural and historical assets and to establish a collaborative system by networking local communities and organisations. These plans should aim at improving public services and cultural facilities and programs for residents, at strengthening educational competitiveness and at improving housing, job opportunities and water services. The Presidential Committee on Regional Development outlines ten major tasks for local areas.[9]

This three-tiered approach to decentralised economic development is supported by *Korea's Urban Vision for 2020*, the vision document drafted by MLTM in 2008, which sets out to resolve current urban problems and propose ways to solicit administrative and financial support. The vision also acknowledges a raft of changing circumstances that necessitate a change in urban policy, *i.e.* population decrease, an ageing society, climate change, democratisation and decentralisation. To establish a target and strategies for future urban policies, a survey was conducted among experts and municipal government officials.[10] As a result, four urban policy goals were created, *i)* nurturing the growth engine, *ii)* improving urban living conditions, *iii)* establishing urban identity and *iv)* restoring the natural environment and ten strategies (Table 2.1).

At the same time, urban policy makers are shifting toward more localised, flexible spatial planning designed to foster competitiveness at the local level. Some spatial planning responsibilities have been transferred to sub-national governments. For example, the 2003 and 2009 *National Land Planning and Utilisation Acts* (NLPUA) have successively reformed urban policy decision-making procedures, transferring urban planning authority to local governments to promote land use that benefits local interests. As a result, urban master plans and urban management plans that demonstrate the vision and direction of urban development and manage urban areas to protect them from uncontrolled development are established under the responsibilities of city mayor and county (*gun*) governor. In order to provide the local cities with guidelines, the central government (notably MLTM) developed the Comprehensive National Land Plan to outline the national long-term land development strategy. MLTM is also responsible for approving metropolitan area plans and ensuring that any change is in line with national legislation. Further, the

Table 2.1. **National urban policy goals and strategies suggested by the MLTM**

Policy goal	Strategy
Nurturing the growth engine	1. Renew the city for vitality.
	2. Lay the foundation to raise the competence of future industries.
Improving urban living conditions	3. Improve living standards and make cities pleasant and convenient.
	4. Make the city friendly to the socially vulnerable.
	5. Develop a convenient and safe public transport system.
Establishing urban identity	6. Create a cultural city where all can participate.
	7. Develop unique and beautiful scenery.
Restoring the natural environment	8. Enable a low-carbon lifestyle.
	9. Raise water quality and preserve forests.
	10. Make a city free of crime and disasters.

Source: Ministry of Land, Transport and Maritime Affairs (MLTM) (2008), Korea's Urban Vision for 2020, Ministry of Land, Transport and Maritime Affairs, Gyeonggi-do.

land use zoning system, designed at the national level, has also been simplified and made more flexible, with the emphasis shifting from imposing restrictions to promoting development. Zoning reform, undertaken in 2008 by MLTM, thus revised the zoning categories to encourage mixed-use and transit-oriented development.

Urban policy makers have also sought to stimulate urban competitiveness by promoting qualitative urban management through urban regeneration policies, inner-city improvements and liveable cities initiatives, and maximising urban growth, notably by greenbelt policy reform. The highly urbanised nature of most cities has led the government to focus on redevelopment, densification, mixed-use and transport-oriented development. However, as MLTM has noted, urban redevelopment projects, which have been largely undertaken by the private sector, could be improved with increased public involvement (MLTM, 2009a). Many past urban regeneration projects have been criticised for placing too much focus on housing construction for profit, with little concern for investment in the surrounding urban area. For example, on average, urban environmental improvements were implemented in just 3% of the total redevelopment area, while housing redevelopment and rebuilding reached 97% (MLTM, 2009a). A desire to maximise urban growth has led to a series of recent reforms of the national greenbelt policy.[11] Since 1999, the government has been gradually lifting the Development Restriction Area. The Whole Development Restriction Areas designated around small and medium cities have been cleared, while restrictive zones around large cities have been partially removed to make way for national development projects, such as large-scale public housing complexes. As a result, the size of the restricted area has decreased from 5 397 km^2 to 3 895 km^2 as of 2009, with the majority of the Development Restriction Area concentrated in the Seoul Capital Area. Nevertheless, following the deregulation, Korean urban policy makers seem to have been torn between the two policy goals: to restrict urban sprawl and to manage urban growth. In order to address this policy dilemma, the Korean national government may need to develop a more systematic and comprehensive urban management approach, for instance, through the urban modelling method.

Finally, economic and industrial policy has taken on a more explicit urban dimension. One key strategy to promote the competitiveness of local cities has been to reinforce regional innovation networks through programmes like the New University for Regional Innovation (NURI) (2004-08),[12] the development of Regional Innovation Councils in each of the metropolitan cities and provinces composed of 845 industry, university and local

government representatives,[13] and the creation of 50 Regional Innovation Centres (RICs) and 57 Localised Industry Development Centres (LIDCs), as of 2010, with a mission to upgrade university research facilities and promote local industry[14] (MKE, 2010). Of note is the Daedeok Special R&D zone, which was established in the 1970s to improve scientific capabilities outside of the Seoul Metropolitan Area and has grown from a science education centre to an innovation hub (Box 2.2).

Box 2.2. **Daedeok Innopolis: From science-education centre to innovation hub**

Daedeok Special R&D Zone was built within the Daedeok Science Town, created in Daejeon in the 1970s. Daedeok Science Town expanded with the relocation to Daedeok of the Korea Advanced Institute of Science and Technology (KAIST), one of Korea's leading S&T universities, and several leading government research institutes. By 2009, 81 research institutes from the public and private sectors and 1 006 companies employing 45 526 staff. Daedeok includes nearly 10% of all Korean PhDs and produced 32 000 patents in 2009. A recent important development is the shift towards a more innovation-led strategy, with the 2005 rebranding of the R&D Zone as the Daedeok Innopolis. Innovation is being promoted by tax incentives and targeted R&D programmes. A key issue was whether these government interventions could catalyse the development of a Korean Silicon Valley. Detractors point to the emergence of "natural" clusters and argue that these cannot be manufactured by public policy. In response, defenders point to the contribution that policy can make to encourage the conditions for technology transfer and the formation of high-technology spin-offs. It is still too early to judge the success of the Daedeok Innopolis, but continuing growth in the number of venture companies housed in the complex is probably cause for some optimism.

Source: Adapted from OECD (2009a), *OECD Reviews of Innovation Policy: Korea 2009*, OECD Publishing, Paris.

Another strategy has been to develop new cities, or districts within cities, known as enterprise cities and innovative cities, to provide urban areas with new growth foundations and maximise innovation capacity. Expanding on previous efforts to develop industrial complexes and with the support of the Federation of Korean Industries, enterprise cities are designed to accommodate a range of functions, including production, R&D centres, distribution facilities and housing. Access to building permits is facilitated, as well as investment tax payments. The government grants various funding privileges to enable the participation of private corporations (Table 2.2). Innovative cities aim to attract public corporations and public research institutes and promote networking and collaboration among regional industries, universities, research institutes and local governments. In these cities, a central innovation district is organised as a space for knowledge exchange and reciprocal education. Notably, the innovative city policy attempts to identify the brand of cities and to enhance the image of each city in conformity with its characteristics: *e.g.* a specialty city with a regional theme, an eco-green city, an education/culture city that enables creative educational exchange, etc. As of 2011, ten innovative cities have been created throughout Korea (Table 2.3).

Nevertheless, Korea lacks a coherent innovation policy. A number of ministries have initiated parallel and sometimes competing programmes to target innovation, and more specifically, innovation in urban areas. Evidence suggests that firms can find the process of locating suppliers time consuming (OECD, 2009a). What is more, spatial inequalities

Table 2.2. **Enterprise cities in Korea**

City	Period for planning and development	Planned population	Planned size (hectares)	Purpose and main features
Wonju	2007-12	25 000	531	– Knowledge-based city
				– Advanced medical complex, health and bio-industry, media
Chungju	2007-11	20 200	701	– Knowledge-based city
				– Life science and engineering centre, English town, golf academy
Muan	2007-11	120 000	3 300	– Trade-based city
				– Airport logistics, health and well-being industries
Taean	2006-20	15 000	1 464	– Tourism and leisure-oriented
				– Theme park, eco-park, golf courses
Muju	2007-17	10 000	767	– Tourism and leisure-oriented
				– Golf courses, condominiums, water parks, wineries
Haenam, Yeongam	2008-12	35 000	3 107	– Tourism and leisure-oriented
				– Theme park, marina, hotels, golf courses, casino

Source: Ministry of Land, Transport and Maritime Affairs (2011b), "Enterprise Cities", *http://enterprisecity.moct.go.kr/eng/index.jsp*, accessed 5 May 2011.

Table 2.3. **Innovative cities in Korea**

Region(s)	City/urban districts	Population	Main concept
Gangwon-do	Wonju-si	30 000	Vitality City realising harmony of health, life and tourism
Chungcheongbuk-do	Jincheon-gun and Umsung-gun	42 000	Inno-valley of education and culture
Jeollabuk-do	Jeonju-si	29 000	Bio-industry hub connecting traditional culture with state-of-the-art technology
Gwangju, Jeollanam-do	Naju-si	50 000	Capital of high-tech futuristic industrial cluster
Gyeongsangbuk-do	Gimcheon-si	26 000	Hub for state-of-the-art science technology and transportation
Gyeongsangnam-do	Jinju-si	38 000	Hub for leading mechatronics industry
Jeju	Seogwipo-si	5 000	Leading international exchange and educational training
Busan	Yeongdo-gu, Nam-gu	7 200	Hub for maritime affairs and fisheries, film and finance connecting land and sea
Daegu	Dong-gu	23 000	Hub of educational and academic industries; centre of Southeast Asia's industrial cluster
Ulsan	Jung-gu	20 000	Environmentally friendly high-tech energy hub

Source: Ministry of Land, Transport and Maritime Affairs (2011c), "Innovative Cities", *http://innocity.mltm.go.kr/eng/city/city01.jsp*, accessed 5 May 2011.

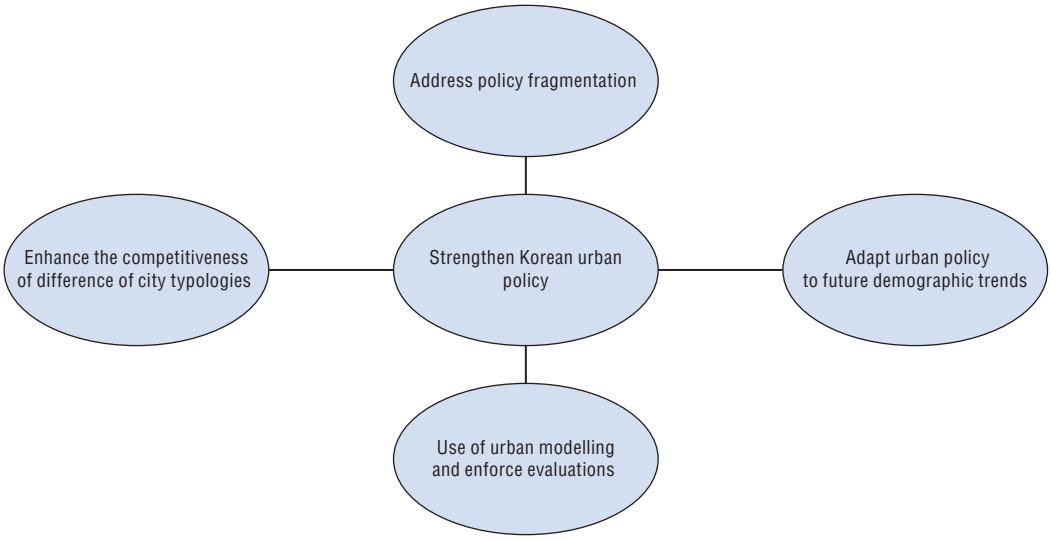
persist, with large metropolitan regions better equipped than the rest of the country. The hierarchical nature of the higher educational system, with a strong concentration of top universities in the Capital Region, has hindered regional economic development opportunities in peripheral regions. Regions outside the Capital Area tend to suffer heavily from a "brain drain", exacerbating the mismatch between demand and supply of highly qualified people.

2.2. Strengthening the co-ordination and coherence of Korean urban policy: four policy priorities

Several opportunities could be seized to *i)* address the fragmentation of urban policy mandates across multiple ministries and at the sub-national level, *ii)* adapt urban policy to future demographic trends, *iii)* enhance the competitiveness of different city typologies in Korea, including lagging cities, and *iv)* close the gap between anticipated and actual

outcomes of urban plans and policies through a more widespread use of urban modelling, prior to plan implementation and an improved culture of *ex post* evaluation and monitoring (Figure 2.2).

Figure 2.2. **Four policy direction suggestions for Korean national urban policy**



Source: OECD elaboration.

Addressing policy fragmentation

Toward a comprehensive, multi-sectoral approach to urban development

On the whole, co-operation among the central and local governments could be enhanced in Korea. Despite the wealth of initiatives to foster greater competitiveness in urban areas, Korean urban policy is characterised by strong fragmentation at both the ministerial and local levels and would benefit from the development of a more comprehensive, multi-sectoral approach to urban development. Whilst MLTM takes the national lead on urban issues and has framed its interventions in *Korea's Urban Vision for 2020*, the plan is more of an internal ministerial work plan than a national strategy; as such, in developing ministerial agendas, there is no legal or policy requirement for other ministries to take into consideration the objectives outlined in the vision. Further, as in many OECD countries, an integrated approach to urban development has typically been stymied, due in large part to the fact that urban policy mandates are fragmented across many ministries. The Presidential Committee for Regional Development (PCRD) emerged in 2008 as the main national body for resolving inter-ministerial issues[15] and has played a key role in setting the strategic direction and prioritising investment in nationally significant regional development projects (OECD, 2010b). The PCRD is not, however, an executive agency but an advisory committee that lacks the tools or authority to enforce policies and also the statutory powers to make policy and determine priorities among matters administered by a range of independent ministries. This atomisation of administrative mandates across a wide range of central ministries with jurisdiction over urban issues is not always compatible with an effective, coherent, multi-sectoral approach to urban development.

Korea's new three-tiered territorial framework could be limited unless the government assists in building co-operative programmes that are significant in terms of budget and economic impact. In this context, it is necessary to induce new collaborative behaviour among different ministries, sub-national authorities and the emergence of bottom-up initiatives that take advantage of the complementarities between cities and regions.[16] To foster the development of a co-ordinated national strategy, Korea could consider establishing an interministerial regional development agency at the national level, similar to the *Délégation Interministérielle à l'Aménagement du Territoire et à l'Attractivité Régionale* (DATAR) in France. Its task would be to implement the regional policy of the government, while the PCRD would be in charge of strategic matters. A specific directorate of the agency would be responsible for urban policy. It would make an effort to promote the internationalisation of Seoul and the other large cities, and it would also receive guidance from the PCRD to put in place a policy for the globalisation of metropolises.

Enhancing policy co-ordination among local governments

Co-ordinated spatial planning at the sub-national level is also a challenge in Korea, given the proliferation of plans to guide spatial planning, economic development and sectoral development, in addition to a history of weak co-operative relationships among local governments. Spatial plans are developed at each administrative echelon: the *National Comprehensive Development Plan*, spearheaded by the Minister of Land, Transport and Maritime Affairs (MLTM), followed by provincial plans, metropolitan area plans and, at the local level, urban master plans and urban management plans (Table 2.4). It should be noted that these spatial plans are developed separately from economic development and sectoral plans, leading to further fragmentation of objectives and implementation strategies. In addition, at the regional level, provinces and metropolitan city governments have tended to see each other as competitors rather than as potential partners in development, concerned with how to use their newly devolved responsibilities and position themselves to attract businesses and national financial support (OECD, 2004).

To increase policy coherence across the city-region area, Korea could develop city networks and develop delivery agreements at the metropolitan or micropolitan levels. Along with its supra-regional and regional scale, a micropolitan scale could be helpful for

Table 2.4. **Ministries and levels of government engaged in regional and urban policy in Korea**

Type of plan	Purpose of plan	Lead(s) for implementation	Lead(s) for approval of plans
Comprehensive National Land Plan	– Direction for long-term national development – Strategies for improving industry and balanced development	Minister of Land, Transport and Maritime Affairs (MLTM)	President
Province comprehensive plan	– Direction for long-term development at regional level	Provincial governor	Minister of MLTM
Metropolitan area plan	– Common interest in spatial development and inter-regional infrastructures with adjacent local authorities	City mayor, provincial governor (minister of MLTM)	Minister of MLTM
Urban master plan	– Direction of spatial development of each local authority for the long term	City mayor, county governor Metropolitan city mayor	Provincial governor Metropolitan city mayor
Urban management plan	– Practical measures of urban policy	City mayor, county governor	Provincial governor

Source: Framework Act on National Land.

organising intermunicipal partnerships among Korea's 161 Daily Living Spheres. Currently, Korean urban policy seems to lack such an interscalar level between the seven economic regions and the 161 Daily Living Spheres. The concept of a micropolitan area closely parallels that of the metropolitan statistical area, as in the US, for example, but a micropolitan statistical area features a smaller nucleus.[17]

In general, the various experiments in OECD countries, including voluntary inter-municipal co-operation governance agreements, demonstrate the dominant role of the central state in initiating such processes, often through the use of fiscal or legal instruments (OECD, 2010a). There are a number of cases where partnerships and contracts have been concluded with recently created metropolitan authorities, though largely as *ad hoc* sectoral partnerships. Some countries have begun to introduce or contemplate the introduction of contractual procedures at metropolitan level based on a more multi-sectoral approach. France created agglomeration contracts that involve the central state, the region and the inter-municipal body of either the Agglomeration Communities or the Urban Communities focusing on human capital improvement and economic development initiatives (Box 2.3). The introduction of metropolitan contracts in 2007 was a major step towards recognising functional economic areas by fostering collaboration among municipalities around a commonly defined project for economic development, without creating a formal metropolitan body. The Swiss Confederation has also introduced an agglomeration policy that would better integrate the problems faced by large cities within each sector by encouraging project implementation through policy incentives. Canada's experience to enhance inter-municipal co-operation for infrastructure funding is also notable. In 2005, the government instituted a Gas Tax Fund (GTF) to share half the revenue from the federal excise on gasoline with 3 600 municipalities across the country, in order to fund sustainable municipal infrastructure, including transit and waste. To access the funds, municipalities must apply jointly. The programme has resulted in the construction of regional water filtration plants, community co-generation systems and community transit systems (OECD, 2011a).

Adapting urban policy to changing demographics

Urban policy in Korea will also have to adapt to two changing demographic trends, as discussed in Chapter 1: ageing and immigration. The built environment could be adapted to better accommodate seniors, through changes in urban design and transportation policy, while other strategies could also be pursued, such as encouraging greater involvement of voluntary organisations and providing information and communication technologies to the elderly population to bring services closer to home. Further, the government could also adopt measures that encourage immigrant entrepreneurship and cultural promotion to accommodate the growing immigrant population in Korea.

Adapting the urban environment to an ageing population

Changes to urban policy include transforming public urban spaces, including buildings, parks, squares and sidewalks, and public transportation to adapt to an ageing society. Currently, Korea's *Basic Plan to Address Low Fertility and Ageing* seeks to provide jobs, expand health insurance coverage, adapt public transit and, notably, adapt housing to the needs of the elderly through the Act to Support Elderly Housing (Box 2.4).

Supplying independent housing specifically equipped for senior citizens is one strategy, as demonstrated by Japan's Silver Housing Project. The project provides

Box 2.3. **Contractual tools at the metropolitan functional level in France**

The agglomeration contract in France is a bottom-up method based on "one territory – one project – one contract". The strategy is proving increasingly successful and contributing to co-operative governance, bringing together the central government, the region and the Agglomeration Community or the Urban Community. The county council (the *conseil général* of the *département*) can be associated with the signature of the contract, in particular for questions related to social policies. This procedure involves four main stages.

1. The agglomeration project, the basic document, contains a diagnosis of the functioning of the agglomeration. It identifies the issues, provides development policy options and an indication of the support areas for these choices as well as the policies and measures to implement these choices, with a phased timetable and identification of priorities. The project must focus on regional development (economic, social and human development) rather than infrastructure development and improvement. The project must be based on dialogue with the municipalities and the main actors in the area by mobilising non-public actors for implementation.
2. The development board represents a variety of economic, social, cultural and association groups that must be consulted during the preparation of the project and on final delivery of the project prior to signature of the contract. This board can also be associated with the drafting of the contract.
3. The agglomeration contract is the financial and programme document governing the implementation of the project, which identifies the partners, projects, multi-year financing and contractors.
4. The regional coherence plan (SCOT) is a spatial projection document of the agglomeration project, which translates the project decisions into urban planning law.

The metropolitan contracts in France focus on actions that encourage and expand the development of the metropolitan areas: economic development, access to infrastructure, research, higher education, cultural development, etc. Particular attention is paid to poles of competitiveness, especially on actions that allow the development of synergies between the private sector, research and universities. The metropolitan contract is supposed to unfold in three phases: *i)* a government call for proposals for engineering stronger metropolitan co-operation; *ii)* a metropolitan plan, prepared by governments; and *iii)* the introduction of a metropolitan contract, based on specified activities.

Source: OECD (2006a), *Competitive Cities in the Global Economy*, OECD Publishing, Paris.

independent public rental housing for people aged 60 or over and is designed for the needs of the elderly, with services from life support advisors who help with everyday situations, check in on the well-being and health of residents, and who can be contacted in cases of emergency. The project started in 1987 in co-operation with the Ministry of Health, Labour and Welfare, and by March 2007 included 21 994 housing units on 821 housing estates (OECD 2011a, Building Centre of Japan, 2008).

Alternatively, Korea could consider modifying zoning regulations to benefit the elderly. First, policy makers could consider making exemptions to common planning rules that could help serve the needs of the ageing, such as the use of small, vacant spaces for construction projects for the elderly. For instance, Denmark favours the injection of small groups of dwellings into spaces between blocks of apartments. Elderly people from the neighbourhood move into these dwellings, thus preserving their social and family networks while using existing amenities and surrounding services. In Sweden, an exemption allows the use of the normally mandatory communal open space for the construction of small community centres rented by the municipality and used to provide hot lunches, medical care and social and cultural activities to elderly residents (OECD, 2003). These solutions can sometimes be preferable to planned, purpose-built apartments.

Box 2.4. **Korea's plans for addressing low fertility and ageing**

In 2010, Korea's Ministry of Health and Welfare, in co-operation with several relevant ministries, established the *Basic Plan to Address Low Fertility and Ageing*. This action plan covers a wide range of policies over the period 2011-15, specifically targeting the ageing "baby boom" population. The plan also proposes parallel strategies for improving the quality of life of the elderly, such as providing jobs, improving incomes and health and supporting housing. Its objectives include:

- Provide 0.2 million jobs to the elderly by 2011.
  - Support business start-ups for the elderly, by developing an affordable model and reinforcing education.
- Expand health insurance coverage for the elderly.
- Enact the Act to Support Elderly Housing, including the establishment of safety standards.
- Provide rental housing for the elderly.
  - Provide 5% of total public rental housing in the Bogeumjari housing area to seniors.
- Develop a driving education programme for the elderly.
- Distribute a "silver mark" label for vehicles driven by the elderly.
- Expand low-floor/non-step bus service.

Source: Ministry of Health and Welfare (2010), "Basic Plan to Address Low Fertility and Ageing", Ministry of Health and Welfare, Seoul.

The zoning of accessory dwelling units (ADUs) could be used to increase the supply of smaller units, which are more appropriate to elderly housing needs. The use of second dwelling dual-occupancy provisions, known as accessory dwelling units, "granny flats", "mother-in-law units" or "garage-over" units, can provide affordable rental housing, especially for students and the retired. Cities like Portland in the US have developed models for ADUs based on different designs and neighbourhoods.[18] In Korea, the central government could consider providing pre-approved, architect-designed prototypes for ADUs so that homeowners can avoid design costs and begin construction. Such a programme could also offer online tutorials on permitting and building an ADU unit, such as the Accessory Dwelling Unit Development Program in Santa Cruz, California.[19]

Allowing density bonuses for developers who provide elderly housing in central districts, near transit and other urban services, is another possible strategy. In the US, a "bonus zoning" ordinance was enacted in Newcastle, New York, which allows for 50% more dwellings to be built on expensive, centrally located parcels of land, provided that the apartments are occupied exclusively by elderly residents. Such an incentive permits developers to launch construction projects at higher density in areas that might not otherwise be financially viable. Such policies can also contribute to reducing urban sprawl and, if carefully designed, to improving the urban environment (*e.g.* through reduced transport demand).

More progressive zoning techniques beyond density thresholds could also help engender a denser form more appropriate for seniors. For example, the city of Kalamazoo, Michigan, in the US adopted a dynamic height control for areas surrounding its downtown core, in which the maximum height on an individual parcel corresponds to the height of the tallest building on an adjacent parcel plus one floor. In India, Delhi makes maximum heights in some areas of the city a function of surrounding street widths. If streets are widened, maximum heights are allowed to increase automatically (Elliott, 2008).

The government could also provide fiscal incentives to support the private housing market for the elderly with the introduction of a VAT or of income tax cuts for homeowners renting serviced apartments to elderly people, following the model of the Student Housing Programme in France. In the context of limited state funds for satisfying the housing needs of the growing number of students in cities, the government opted to stimulate the private supply by offering substantial tax breaks for homeowners who rented apartments to students (OECD, 2003).

Transportation policy could be further improved to accommodate Korea's ageing population by taking into account the tendency of the elderly to travel shorter distances, by providing more sidewalks and other urban amenities (OECD, 2011a). A national urban policy framework should also take into account urban areas' budgetary needs for proper provision of public transportation and urban spaces adapted for the elderly, as Japan's national government has done (Box 2.5).

Box 2.5. **Japan's policies for enhancing accessibility to public areas for the elderly**

In order to allow citizens to freely travel from one place to another in urban areas, Japan's Ministry of Land, Infrastructure, Transport and Tourism (MLIT) is systematically incorporating more barrier-free features into railway facilities, hospitals, welfare facilities and other buildings, as well as into the routes connecting them and in buses and taxis. Key policy measures include:

- **The Act on Making Buildings Accessible and Usable for the Elderly and Physically Disabled (Heart Building Law).** Enacted in September 1994 and revised in April 2003, this act introduced various measures to make public buildings more accessible, including building standards to reduce barriers to movement in buildings used by large numbers of people or that serve an older or mobility-impaired population. Incentives were provided for those who intend to construct specific buildings that meet the requirements for a barrier-free environment, including: floor-area-ratio bonus, exclusive right to indicate the certification, additional 10% depreciation of income tax/corporate tax for five years, low-interest loans and government subsidies for the construction cost, as well as a simplified process for building permits.
- **The transportation "Barrier-Free" Act.** Enacted in 2000, this act promotes the accessibility of the elderly and the disabled in public transportation facilities, including stations, trains and buses, as well as in public areas including streets and squares. It introduced the standard that transportation companies must conform to in constructing new public transportation facilities, including installation of elevators, escalators and guided blocks and installation of low-floor/non-step buses.
- **New "Barrier-Free" Act of 2006.** Enacted in December 2006, this act (Act on Promotion of Smooth Transportation, etc. of Elderly Persons, Disabled Persons, etc.) integrated the two acts and promotes accessibility in public areas in a more comprehensive fashion. The standards for accessibility were enlarged to include certain streets, parks and parking facilities, with more attention to pedestrian space linking different public facilities and buildings. The act also encourages the participation of elderly and disabled people in the planning phase. The ministry is encouraging municipalities to prepare local strategies and providing financial support for their projects.

Through these comprehensive efforts, the accessibility of public areas has substantially improved. For instance, 77.2% of all the passenger facilities with traffic of more than 5 000 passengers per day (2 876 facilities in total) are now equipped with barrier-free features (as of March 2010).

Source: Ministry of Land, Infrastructure, Transport and Tourism (MLIT) (2008), "White Paper on Land, Infrastructure, Transport and Tourism in Japan (Outline)", Warsaw; Ministry of Land, Infrastructure, Transport and Tourism (MLIT) (2010), "Current Situation of Barrier-Free Improvement Based on the New Barrier-Free Act", press release on 1 October 2011 (*in Japanese*); Ministry of Regional Development (2006), "National Development Strategy 2007-2015", Ministry of Regional Development, Warsaw.

Promoting citizens' participation in the decision-making processes relating to elderly housing could improve efficiency and ensure that housing designs meet the needs of the elderly. Denmark has experimented with active participation in senior development projects with the Gronbo Senior Co-operation, a co-housing initiative that emphasis the role that older people can play in designing their future homes and environment. Future residents work with contractors and architects to select the site and develop plans for the general composition and layout of the housing schemes. The houses are designed with the assistance of professionals to adapt to ageing residents, and are located near shops and other facilities with good transport links. Other countries, such as the Netherlands, Finland and Switzerland, have favoured the active involvement of elderly groups in the planning and organisation of public services through questionnaires, which help to improve the organisation and management of service delivery at the local level (OECD, 2003).

The government could also consider incorporating voluntary organisations in the provision of some public services to the elderly. The participation of voluntary organisations in policy for older citizens is currently rather limited in Korea, as most social welfare services are provided by central and local governments or social welfare corporations that receive financial transfers from government. Nevertheless, voluntary organisations including charities, community groups and social enterprises, could be effective in reaching communities that the government has had difficulties in approaching (OECD, 2008). A number of OECD countries have implemented policies and programmes to strengthen and encourage the participation of voluntary organisations in public service provision at multiple levels of government (Box 2.6).

Box 2.6. **Facilitating participation of voluntary organisations in public service provision to the elderly**

- Finland's *Seniorpolis Initiative* in the municipality of Ristijärvi provides an example of how private and non-profit organisations may be involved in the provision of public services for the elderly. *Seniorpolis*, in co-operation with universities, research institutes and technical high schools, promotes know-how, technology, product development and business concepts within different services for the elderly, providing a large variety of services and products. This initiative covers four main areas: housing solutions for older citizens; lifelong learning through interactive and distant learning systems; care services emphasising self-help; and relaxation services.
- Italy's regional and local governments runs the *Estate Serena* programme, which focuses on maintaining elderly people's independence and provides them with multi-functional services, integrating services already available in the area and ensuring continuity of services. In the province of Salerno, the *Area Development Plan* aims to integrate social and welfare services, institutional services, the local community, and public, private and non-profit organisations.
- The UK has created the Office for the Third Sector, which aims to increase the involvement of the voluntary sector in public service delivery. For the British government, the participation of the third sector is a crucial part of the strategy to build more cohesive, empowered and active communities. The government's action plan for third-sector involvement includes four areas of engagement: commissioning, procurement, capacity improvement, and accountability.

Source: OECD (2008), "Ageing and Changes in Public Service Delivery and Conclusion", paper presented at the Public Employment and Management Working Party, OECD, Paris, 4-5 December 2008.

Finally, information and communication technologies (ICT) can also help integrate elderly groups in Korea and bring key services closer to a growing number of the disabled and elderly. If housing planning includes a place for ICT, services can be become more accessible to the elderly. Requests for public services and payments can be carried out using ICT, reducing the need for the elderly to leave their home. It can also help to bring together the community, delivering cultural and social services (OECD, 2003). E-health strategies can be used to increase health services delivered at home; these include not only increasing Internet access, but also launching Internet services for health users, as in Portugal and Greece; fostering e-commerce in medicine, as in Germany; enacting regulation that requires general practitioners (GPs) to offer services online, as in Denmark, and developing national strategies for e-health, as in Sweden. ICT should not, however, be considered a replacement for social care and interaction (OECD, 2003). It is important that policy recognise that the introduction of ICT can exacerbate the digital divide between those who have access to the Internet and those who do not.

Accommodating an ethnoculturally diverse community

Korean urban policy could also seek to better integrate an increasing ethnoculturally diverse population resulting from immigration. Despite the influx of immigrants to Korea and their role in helping to balance Korea's depopulation and low fertility rates, immigrants are relatively absent from Korea's national urban policy considerations. In large cities such as Seoul and Incheon in particular, where some of the country's 900 000[20] migrant workers continue to live (Korea Statistics Office, 2011), the demand for migrant workers has become structurally embedded in the economy. Measures can include the numbers of residents in households to be sensitive to different cultural practices and adjusting public participation processes to accommodate different languages and cultures (Frisken and Wallace, 2002). City governments could better prioritise this, as has been the case for such initiatives as the U-City and the Green City initiatives. Seoul could envision itself as a diverse and inclusive city, a true characteristic of a globally competitive city.

Korean ministries could assist municipalities in providing urban design improvements that accommodate the needs of the migrant labour population. Several cities in the OECD with large immigrant populations explicitly encourage immigrant entrepreneurship and cultural promotion. The City of Sydney introduced design guidelines that incorporate ethno-cultural elements, such as porticos, lanterns and trash bins with traditional Chinese symbols in Chinatown, in addition to the planting of Chinese trees and the funding of a Chinese garden. Sydney's Little Italy neighbourhood also received a makeover that included Italian signage and wider footpaths, to reproduce the feel of the *al fresco* (outdoor) Italian eating experience. Little Turkey and Vietnamese neighbourhoods have also received government support for cultural festivals.[21]

At the same time, labour policies can be modified to include an urban dimension to avoid the spatial segregation of immigrant groups and foster improved social cohesion. Some OECD countries have targeted large cities in the integration of ethnic minorities, such as the Dutch government's *Grotestedenbeleid* policy from 2004-08 (Van der Berg *et al.*, 2004). The Swedish government has also focused on integrating the immigrant labour force into the regional economy (OECD, 2010b) (Box 2.7).

Box 2.7. **The regional dimension of the integration of immigrants into the labour market in Sweden**

To avoid a large concentration of immigrants in the three metropolitan regions (Stockholm, Göteborg and Skåne), Swedish authorities implemented a placement policy in 1985 that assigned newly arrived refugees and asylum seekers to specific municipalities throughout the country. As the number of newcomers increased and housing became a limiting factor, immigrants tended to be placed in municipalities with available housing, and less attention was paid to the characteristics of the local labour market. The migrants were free to move if they found housing elsewhere, but were required to participate in an 18-month introduction programme in the municipality in which they were originally placed and received social assistance. The dispersal policy was later abandoned in the face of large increases in the number of asylum seekers. From 1994, municipalities have been encouraged to grant individuals participating in an introduction programme an "introduction allowance" rather than social assistance. The objective is to emphasise the exceptional nature of the allowance granted during the early stage of the migrants' stay in Sweden. The amount of the introduction allowance varies widely across municipalities (between EUR 350 and EUR 800 per person per month). Some municipalities grant the same amount as regular social assistance, whereas others use the level of the minimum wage. Currently, about 60 municipalities use the introduction allowance and two-thirds of refugees reside in such municipalities. Most metropolitan municipalities have chosen to introduce an allowance that is higher than normal social assistance and is means-tested. The municipality also decides whether the allowance can be combined with income from work without being reduced.

In 1998, the Swedish Integration Board was established and took over responsibility for the integration of newly arrived immigrants. The Integration Board was responsible for disbursing the introduction allowance to municipalities and issuing general guidelines on integration, while implementation and responsibility for newly arrived immigrants was left in the hands of the municipalities. However, the Swedish Integration Board was abolished in 2007.

Since 2000, a number of programmes have been introduced at the national level to improve immigrants' integration into the labour market. Currently, the Public Employment Service works on strengthening personnel at job centres in regions where the number of job seekers of foreign origin is large or where local or regional labour market conditions are difficult. While no specific labour market measures are targeted at immigrants *per se*, labour board staff can address the problems of unemployed immigrants.

Source: Adapted from OECD (2007a), *Jobs for Immigrants: Labour Market Integration in Australia, Denmark, Germany and Sweden*, OECD Publishing, Paris.

Tailoring urban policies to the different needs of cities and metropolitan areas

National urban policy in Korea will have to be flexible and tailored to the specific aspects of different cities. For example, urban policies should be developed in consideration of the differences in city size, geographical characteristics and economic performance. Issues faced by Seoul and other metropolitan cities and those faced by lagging cities, particularly small- and medium-sized industrial cities, are distinct. In this context, the government's current three-tiered economic development strategy, which treats large cities with high growth potential as the economic engines of Korea and focuses efforts in other cities, particularly lagging cities, on enhancing liveability, is on the right track. In the Netherlands, for instance, an inter-ministerial steering committee for large

cities was established to provide more cross-sectoral policies for large urban areas. This committee, consisting of the most relevant ministers, was one of the obligatory steps for government proposals before proceeding to the Council of Ministers (OECD, 2011a).

Developing a specific urban strategy for Seoul

De-concentration of the Seoul metropolitan region has been a core strategy for addressing regional disparities in Korea since the late 1970s, relying largely on regulatory measures targeting the Capital Region. These policies have nevertheless encountered criticism for curbing the growth of Seoul and undermining Korea's competitiveness on the international stage (OECD, 2005a). Further, they have not been successful in diminishing the dominance of the Capital Area. Many OECD countries that had implemented policies to restrict the development of large metropolitan areas are now also increasingly taking into account the role of their champion cities (OECD, 2010c). According to the experiences of several OECD countries, policies designed to create more balanced regional development, often at the expense of the largest cities, including the relocation of firms to lagging areas or restrictions on housing supply in large metropolitan regions, often failed to produce the expected outcome. In London, for instance, the result of highly restrictive urban containment policies has been for urban development to jump across greenbelts, thereby increasing average commuting distance. In France, decentralisation efforts have resulted in the decline of the competitive position of the Paris metro-region relative to major competitors in the European Union in terms of innovation capacity (OECD, 2006a). In response, the French Ministry for the Capital Region was mandated in 2008 to devise a strategy to enhance the region's international competitiveness, resulting in the *Grand Paris* project. In the same manner, the Randstad-Holland region has been endowed with a national ministry, while the national government focuses mainly on sustaining other regions (OECD, 2010c). Enhancing the competitiveness of champion cities should not, however, be interpreted as neglecting other cities. It is important to engage in a clear and systematic analysis of the cities' economy and assets before any potential action is taken.

As the economic engine of Korea, Seoul plays a critical role in the country's global competitiveness. As the OECD has noted previously (OECD, 2005a), however, Seoul's competitiveness might well be undermined by significant challenges including *i)* negative externalities of agglomeration (*e.g.* extremely high density and heavy congestion costs), and *ii)* intense competition both in low-tech and high-tech industries from other countries with lower labour costs. Policy intervention at both the state and metropolitan level can help Seoul to increase its international competitiveness. First, urban transport policy could be enhanced to benefit from more efficient and low-cost public transport.[22] The national government, in particular, will have to contribute financially by investing more in the subway system to connect the core of the Seoul to the ring. Second, improving urban and environmental quality will be critical for Seoul, since these qualities have become key competitive assets. Large cities in a global economy must compete to attract and retain high value-added economic activity in a world in which capital is hyper-mobile and skilled labour and knowledge-intensive businesses are increasingly mobile. The central government, in co-operation with Seoul, could review the quality of building design and urban places to help enhance the city's signature as a world city. This should include looking at the city's residential offer to mobile skilled labour over the longer term by providing the type and quality of housing sought by those working in the knowledge and creative sectors in order to ensure that new housing developments support economic

competitiveness. Providing attractive public spaces including parks, green open spaces and landscaping within the city should be part of this strategy, as well as tackling some of the disparities in community service provision between different localities within the city.

Fostering competitiveness of large cities outside the Capital Region by improving innovation capacity

The competitiveness of large cities outside the Capital Region could be enhanced by improving their capacity to innovate. Over the decades, innovation policy programmes in Korea have had an insufficient focus on central cities, which are nevertheless the main innovation hubs and the main contributors to regional competitiveness. For example, most of the large cities outside the Capital Region (*e.g.* Busan, Daegu, Gwangju and Ulsan) do not spend more than 2% of gross domestic expenditures on research and development (GERD) each, while regional disparities in R&D remain large, with only 25% of national R&D executed in the non-capital regions. While focusing on large cities, Korean national urban policy makers need to avoid the pitfalls of a one-size-fits-all approach toward innovation policy. For example, recent policy interventions failed to effectively target the mismatch between the strong industrial base in Ulsan, Busan and Daegu and their poor capacities in R&D. Busan and Daegu, in particular, are locked into old industrial structures and strategies. There is a need to learn new strategies and to depart from path dependency in these regions. The reframing of the policy could benefit from an analysis of the OECD countries' experience. The Competitiveness Poles project in France and the development of the eight largest city-regions outside Helsinki in Finland provide interesting models (Boxes 2.8 and 2.9).

In addition to focusing on large cities, Korea could consider the integration of innovation policies between central cities and their hinterland (the functional region or city-region), as well as exchanges among cities. Innovation policy in Korea currently tends to be superimposed on the provincial administrative boundaries. For example, innovative cities and enterprise cities in Korea are being developed within existing administrative boundaries. Value chain analysis could better underpin the decisions of "innovation cities" and "enterprise cities" and produce a heightened understanding of the interconnections in Korea's spatial economy. When a large number of networks of individuals and firms belonging to different supply chains are spatially concentrated, positive externalities or "urbanisation economies" can emerge (Jacobs, 1969). It is likely that economic activities within innovation cities are highly interconnected with different sectors. This can be measured through backward linkages, which illustrate inter-industry linkages between a sector, such as manufacturing, and those sectors from which it demands inputs. It has often been found that manufacturing output will generate varying degrees of demand from different sectors' inputs, for use in their production processes. In the case of Gauteng, South Africa, for example, value chain analysis suggests that a 1% increase in manufacturing's final demand for inputs stimulates the tertiary sector's intermediate output by 16%. Likewise, a 1% increase in manufacturing's final demand for inputs is correlated with a 36% increase in the intermediate output of the manufacturing sector itself and a 13% increase in intermediate output from the mining sector (OECD, 2011b).

Finally, a holistic, localised approach could be helpful for Korean urban policy makers to improve innovation capacity in urban areas. As the OECD has pointed out (OECD, 2009a), many problems pertaining to innovation capacity stem from the fact that regional programmes tend to be centrally administered by national agencies rather than by the

Box 2.8. **The characteristics of the "poles of competitiveness" programme in France**

Poles are made up of all economic agents: businesses, research and testing centres, basic and continuing training organisations that contribute, through their activities, to making sure that there is a satisfactory range of products and services available on the market, and to implementing joint projects. The goal within a variable geographical area is to achieve a critical economic, scientific and technical mass, in order to maintain and develop the dynamism and the attractiveness of the areas in question.

In order to identify these poles, a tender for projects was put out that closed in February 2005. In July 2005, 67 poles were designated, of which six were worldwide poles, nine poles with high international visibility, and 52 were regional or national poles. The number of poles subsequently designated was 71. For 2006/08, the state earmarked EUR 1.5 billion to be used in launching and supporting poles of competitiveness. The 15 labelled international or destined for international clusters received approximately 80% of central government funding.

Partners associated with designated poles have the benefit of three types of non-exclusive incentive measures: public subsidies, tax exemptions and reductions in social charges, financing systems and specific guarantees. Businesses situated within an R&D zone of the pole recognised by order of the *Conseil d'Etat* can benefit from exemption from charges and reductions in employers' contributions (50% for SMEs, 25% for others) when they take part in the pole's projects. To complement the credits intended to co-finance projects in the poles, loans for amenities, collective action and engineering are provided for (up to a total of EUR 36 million). The interministerial committee for national planning and development (CIADT) has also decided to support the expansion of broadband in the poles. It has allocated EUR 1 million for appropriation by SMEs in the digital technology field. The government has, in addition, devoted EUR 2 million to developing a system for monitoring and providing economic intelligence for the poles of competitiveness.

Given the success of the programme, the central government decided to extend its time frame. As for the initial programme, EUR 1.5 billion was planned to be allocated to this second phase (2009- 2011), of which EUR 850 billion was supposed to be provided by the research agency ANR, the SME Agency OSEO and the *Caisse des dépôts et consignations* (CDC). In addition to providing continuous support to R&D projects, funds were expected to be used for:

- strengthening leadership and strategic management of the poles (by means of performance contracts);
- promoting innovation platforms (EUR 105 million will be allocated to this task); and
- developing growth and innovation ecosystems in each pole to enhance synergies and attract private investment (EUR 495 million is devoted to R&D projects).

In addition, a set of initiatives at the international level aims to *i)* integrate national poles policies in a Europe-wide effort to build world-class clusters; *ii)* encourage poles' members to embark on partnerships with global players; and *iii)* make France more attractive to international investors.

Approximately 6 000 companies (85% of which were SMEs) participated in the poles in 2007, and 2 097 projects received agency support (from ANR and OSEO) in 2006, 2007 and 2008. So far, 14 000 researchers have taken part in supported R&D projects. The total cumulated amount of these projects now totals EUR 3.95 billion, with 54% of the funds attributed to SMEs.

Source: OECD (2006b), *OECD Territorial Reviews: France*, OECD Publishing, Paris.; OECD (2009b), *OECD Reviews of Regional Innovation: Piedmont, Italy 2009*, OECD Publishing, Paris; and the French Ministry for the Economy, Industry and Employment (2009), France's Ministry for the Economy, Industry and Employment (2009), booklet on *Poles of Competitiveness*, Ministry for the Economy, Industry and Employment, Paris.

Box 2.9. **Developing regional growth poles by promoting innovation: the case of Finland**

Finland introduced a specific urban policy to foster innovation and the growth of its eight largest city-regions (excluding Helsinki) in 1994. Initially called the centre of expertise programme (CoE), it was restructured under the designation *Regional Centre Programmes* (RCP) in 2001.

Three main rationales have driven Finnish urban policy: *i)* cities as nodal points for the creation of new jobs and the spread of economic growth; *ii)* promotion of innovation to enhance its cities' competitiveness; and *iii)* sustaining a large network of cities, including small and medium-sized, to ensure balanced territorial development. The main instruments to reach these objectives are the *Centres of Expertise* (CoE) programme launched in 1994 and the Regional Centre Programme, introduced in 2001.

The CoE programme represents one of the main tools of Finnish regional innovation policy. The objective is to increase co-operation between universities and enterprises, develop top-level expertise, attract investments and talent to the region and improve regions' ability to raise R&D funding. The programme is implemented by local development companies based on the Triple Helix model, *i.e.* a partnership between *i)* universities and related institutions (research institutes); *ii)* the local business community (companies and science parks); and *iii)* public authorities (municipalities, regional councils, national government). The responsibility for the management of the Centres of Expertise is often assumed by the local science and technology park company. The CoE programme administered by the Ministry of the Interior functions efficiently as a programme that crosses administrative boundaries. It is based on competition, and only the best local programmes are awarded centre of expertise status. These must also compete for basic state funds annually. In 2003, the ministry's basic funds for the programme amounted to EUR 8 million and EUR 9.5 million in 2004. These funds are matching grants, as local actors, mainly cities, are also required to invest in the programme an equal amount of funding (the so called 50/50 principle). In 2003, the total funding of the CoE projects was EUR 40 million, including various sources such as the EU (from the European Social Fund), private companies and national innovation organisations. The CoE, aiming to develop and consolidate international top-level knowledge within firms, in particular by fostering connections with academia and research, is widely considered a success story (Ministry of the Interior, 2003). A 2003 mid-term evaluation of the programme reported that modest public funding had successfully mobilised private resources in most cities involved. In 1998 and 2002, the national government decided to extend it to new regions, The programme, which initially targeted large urban areas, is thus progressively being extended to medium-sized city regions in conformity with the national objective to develop a polycentric urban structure.

The principal objective of the Regional Centre Programme (2000-06) is to ensure balanced territorial development, by establishing cities of different sizes as strong regional or local centres, with the aim of boosting the competitiveness of the regions concerned. The programme also specifically emphasises the development of sub-regional co-operation, by bringing together in a joint network municipalities, universities, research units and enterprises. On the basis of an agreement between municipalities, responsibility for the programme lies with the urban centres or the joint regional organisation of the municipalities, such as regional business development companies. The assumption is that urban regions are considered functional entities, on whose development the core city and surrounding municipalities must co-operate closely. The 34 cities that qualified for the RCP belong to the different categories identified in the typology of the Urban Network Study, with the exception of urban regions in Uusimaa, which were originally excluded from the programme. They represent a total of 264 municipalities, *i.e.* three-fifths of total Finnish municipalities and 63% of the total population. Ministry of the Interior funding for the programme was EUR 10 million per year in 2001-03, and the total expense EUR 20 million per year (2004-06). In terms of policy actions, the main emphasis of the programme is on competence and development, driven by technological innovation within the functional regional centre area. Quality of the environment and culture are also emphasised, as important factors in competitiveness.

Source: OECD (2005b), *OECD Territorial Reviews: Finland*, OECD Publishing, Paris.

regions, causing co-ordination challenges at the regional level and isolation from regional economic development strategies. The Korean government could consider adopting comprehensive economic development policies incorporating clusters, R&D, innovation and education. These could be targeted especially to large cities, delegating greater responsibility on metropolises and provincial cities in the area of economic policy. The success of Economic Region Development Plans (ERDP) could be enhanced if metropolitan and provincial city representatives in the ER Committee truly have a voice in the planning process. Because the ERDP is meant to consist of interprovincial programmes or projects, prepared by metropolitan, city and provincial delegates, inter-metropolis and city/province collaboration should be promoted. The possibility of establishing voluntary associations of upper levels of local government could be used not only to take advantage of economies of scale, but also as a vehicle for strategic partnerships. Special training programmes for city and provincial representatives could be developed to promote co-operation and mutual learning among regional and local staff.

Regenerating economic functions in lagging cities or districts

Korea urban policy could also benefit from developing specific policies to support small- and medium-sized lagging cities and districts. Recently, growth rates in many medium- and small-sized cities have been lower than the national average,[23] combined with depopulation due to declining manufacturing and mining industries.[24] These trends could be further accelerated due to the rapid ageing of the Korean population.

Korea is addressing this challenge through a comprehensive urban revitalisation plan, in which outdated and underdeveloped city hubs will be transformed into vibrant urban spaces. Measures include the creation of car-free streets with small urban streams or traditional cultural streets. The urban revitalisation programme will subsume the existing Liveable City programme, with KRW 104.2 billion in financial support to local governments (2010 MLTM Budget Plan).[25] However, as previously discussed, policy makers should take care to avoid some of the pitfalls of past urban regeneration initiatives, which have tended to focus solely on the construction of residential areas. An integrated strategy that includes reviving economic functions, improving the living environment and constructing new housing should be pursued. In this context, restoring economic value, improving public and community services, including transportation, and assisting local residents in business creation should all be critical elements of urban regeneration projects. Further, policy makers will need to ensure that programme funding is sufficient to make a difference. In the past, legislation to support the regeneration of inner-city and older housing areas, namely the *Act for the Management and Improvement of Urban Areas and Dwelling Conditions for Residents* and the *Special Act for the Promotion of Urban Renewal*, these initiatives have not been supported by sufficient public financial support (Lee, 2010). In order to attract economic activities to lagging cities or the inner city, France's "urban free zone" policy is one tool designed to enhance the competitiveness of local cities (Box 2.10).

Beyond regeneration initiatives, policy makers could also seek to improve labour skills in lagging cities. When policy makers in Newcastle, a relatively depressed economy in northeast England, recognised that its lagging economy could be due to a shortage of skilled workers, they devised a strategy to attract and retain more skilled and talented people, in addition to younger people (OECD, 2006a).

Box 2.10. **The "Urban free zone project" in France**

The 1996 Urban Revival Pact (1996-98), introduced Urban Free Zones (ZFUs) as part of a programme of affirmative action on behalf of specific urban areas in difficulty, to tackle their disadvantages from an economic perspective. The 44 ZFUs (0.8 million inhabitants in 1999) were designated by decree by the *Conseil État*, "taking account of the factors that will attract enterprises or foster the development of economic activity". The principle is to offer reductions in taxes and social contributions to businesses that set up in these zones and recruit at least 20% of their personnel from those living in the ZFU. Several reports give a favorable assessment of this policy, in terms of enterprise and job creation and of achievements in terms of investment. The generally favourable assessment of the first generation of ZFUs prompted the government in 2003 to give the current list of 44 free zones a five-year extension and to broaden the scheme further. As of 1 January 2004, a regime of tax and social exemptions for 41 new free zones was created under the framework law of 1 August 2003 on urban renewal. It grants five-year tax exemptions to small enterprises with fewer than 50 employees that set up business in ZFU districts, provided that one-third of the jobs created go to people living in problem neighbourhoods in the larger urban area.

Source: OECD (2007b), *OECD Territorial Reviews: Randstad Holland, Netherlands 2007*, OECD Publishing, Paris.

Encouraging cross-border co-operation at the urban level

Finally, Korea could consider encouraging cross-border co-operation at the urban level on a more formal basis. Efficient networking and seamless flows of people and goods across the existing border are a fundamental factor for enhancing cities' competitiveness (Box 2.11). In Korea, the *Comprehensive National Land Plan* supports more active trans-border co-operation through the "open territory"[26] strategy, which aims to promote economic integration among cities in neighbouring countries. However, specific policy instruments to achieve this goal at the city level do not seem to be in place, even though several cities, like Incheon, Busan and Ulsan, have benefited from trans-border co-operation in the Pan Yellow Sea Area.[27] Busan, for instance, in consideration of weakening economic growth and rising pressure from developing Asian countries, has sought to restructure its economic base from labour-intensive manufacturing such as shoe-making to knowledge-intensive services. In recent years, as a way of enhancing its international competitiveness and also based on its conventional ties, Busan has promoted active exchanges with the Fukuoka region. One of the most notable achievements in this regard is the Busan-Fukuoka Forum, which was formed in 2006 and is driven by the private sectors of two regions. Further to this effort, an Economic Co-operation Council (ECC) has been formed, led by the heads of local governments and economic organisations from both cities.

Currently, the state of trans-border co-operation in Korea is largely on an informal and *ad hoc* basis, featuring "sister city" agreements. Of Korea's 246 local governments (including 16 provinces and 230 municipalities), 75.6% (186 local governments, 16 provinces and 170 municipalities) were engaged in 547 sister city relationships with 532 cities in 51 countries as of 2008 (KLAFIR, 2007). Of these, more than 80% of the exchanges (461 cities) were established after the 1990s (OECD, 2009c). The sister-city programmes nevertheless remain in the early stages of building trans-border networking, and the lack of a coherent strategy may lead to rivalry rather than alliances, resulting in overlapping public investment and fruitless competition among cities (OECD, 2009c). For instance,

Box 2.11. **Trans-border co-operation between Copenhagen and Mälmo**

Integrated management of the ports of Copenhagen (in Denmark) and Mälmo (in Sweden) is one of the best examples of successful trans-border co-operation. The Copenhagen Mälmo Port Authority (CMP) is funded by the Copenhagen Port Authority and the City of Copenhagen, which have managed the port authority since 2001. Through a strategy of integrated management, Copenhagen and Mälmo have tried to capture international recognition through the port's expanded operations, and to secure efficient investment. In particular, the Mälmo Port specialises in freight, while the Port of Copenhagen promotes the cruise industry. The integrated port aims to become the hub port for the Nordic and Baltic Regions, taking advantage of its location as an access point between Scandinavia and Western Europe. A number of international firms, including Toyota, Sony and Roland, have already located their main distribution centres at the port.

Source: OECD (2009c), *OECD Territorial Reviews: Trans-Border Urban Co-Operation in the Pan Yellow Sea Region*, OECD Publishing, Paris.

Tianjin (China), Qingdao (China) and Busan (Korea) have simultaneously committed mega-scale capital investments to enlarge their port capacities (OECD, 2009c).

In order to facilitate cross-border co-operation, the central government will need to play a stronger role. Experiences in OECD countries suggest that successful collaborations have worked mainly where public agencies have been strongly involved and had a direct say in project definition and implementation (Table 2.5). Several policy recommendations could be considered. First, conducting a joint project to integrate sister-city agreements into the region's long-term common strategic goals would be helpful. Practical projects include the joint operation of maritime logistics information system and the creation of a regional tourism website. Second, building a stronger legal framework for co-operation at the sub-national level is important. This effort would be helpful given the different institutional systems across borders. To date, inter-city networks have relied heavily on voluntary agreements between cities, which are not legally binding. These spontaneous inter-local economic interactions can be undermined by the informal nature of transactions, which are subject to political change at both the domestic and international level. Improved legal frameworks could reinforce mutual trust and trans-border co-operation. Third, securing financial resources would be helpful for cities to build trans-

Table 2.5. **Thematic categories of trans-border co-operation in OECD countries**

	A sense of common destiny	A sense of common values	Economic interdependency (factor price)	Economic interdependency (deeper production integration)
Example	TriRhena, Öresund	Baltic Region, US-Canada	San Diego-Tijuana	US-Canada
Leader	Public sector (especially local government)	Public sector	Strong private-sector involvement	Strong private-sector involvement
Scope	Multi-faceted (place-based integrative approach)	Narrow (function-based approach)	Narrow (function-based approach)	Narrow (function-based approach)
Institution	Monocentric Multi-faceted	Polycentric Network	Polycentric Network	Polycentric Network
Geographic scale	Clear-cut	Fuzzy	Fuzzy	Fuzzy
Temporal stability	Stable	–	Unstable in the long run	Stable

Source: OECD (2009c), *OECD Territorial Reviews: Trans-Border Urban Co-Operation in the Pan Yellow Sea Region*, OECD Publishing, Paris.

border collaboration. Lack of funds is challenging the sustainability of inter-city linkages. Currently, small projects such as simple human resources exchange and training are financed by local governments. Yet, most projects for building trans-national communities surely require much larger-scale funding from both external and internal sources. One possible solution to address insufficient funds could be the use of *Official Development Assistance* (ODA) programmes, such as the *Korean International Co-operation Agency* (KOICA) programme, which actively promotes environmental collaboration with developing countries (OECD, 2009c).

Improving urban modelling and ex post evaluation to inform policy making

In Korea, as in many OECD countries, an apparent disconnect exists between the highly advanced planning concepts presented in the various framework documents and the current state of spatial planning and territorial governance on the ground. Key gaps between the expected and actual outcomes of strategic planning decisions have surfaced at Korea's local level of planning, particularly the over-estimation of target populations to secure additional budget resources from the central government. These discrepancies have been particularly acute in areas where development pressure is high. For example, in Gyeonggi-do, there was a recorded difference between the targeted population suggested by local authorities and the targeted population registered in 31 cities (Table 2.6).[28] Overall, according to a parliamentary inspection of administration in 2010, the total targeted population in 2020 urban master plans exceeded the population estimated by the National Statistics Office by over 13 million persons.[29] This has caused overdevelopment and investment in particular areas.

Further, it is often not known whether the lengthy strategic plans in Korea have their intended impact. Part of this can be explained by the traditional lack of attention to monitoring and implementation. The Korean planning system is characterised by a weak linkage on the implementation front. No explicit statements are made about the timing and sequencing of development and public facility provisions. Apart from large-scale urban developments, there is no mandatory requirement for development to take place concurrently with providing appropriate facilities. As a result, most developments tend to be permitted as long as they conform to zoning regulations (Suh and Healey, 2003). This situation is not confined to Korea. International experience suggests that the actual effects of planning are often over-estimated. In Melbourne, for instance, it was found that the city's strategic planning had unintended effects, given a "lack of understanding of the dynamics of urban change (especially by the professional public service) and a lack of attention to forecasting, monitoring, research and review associated with actual land-use policies" (McLoughlin, 1992).

Relatively few countries have a culture of evaluating in spatial planning. Traditionally, planning systems are not efficient at measuring their impact on development patterns against targets and indicators. Impact analyses are considered difficult to use because they tend to be medium- and long-term endeavours. The criteria for evaluating the effectiveness of spatial planning are mostly sectoral, at least when it comes to short-term evaluations (for example concerning regional economic development, transports and communications). These evaluations are mostly process-oriented, while their actual effectiveness can only be assessed after some years. Performance measurement is further complicated by the fact that planning systems is only one among many influences on regional development. In Korea, evaluation is delegated to the Presidential Committee on

Table 2.6. **Deviation rate between proposed and approved population of the urban master plan in 31 cities**

Si or *gun*	Targeted population (thousand persons)		Deviation rate (%)
	Proposed (A)	Approved (B)	
Paju-si	874	520	168
Hwasung-si	1 350	920	146
Yeoncheon-gun	120	85	141
Gwangju-si	450	320	140
Pocheon-si	350	260	134
Siheung-si	720	535	134
Hanam-si	280	180	133
Euiwang-si	250	190	131
Yangpyeong-gun	210	170	123
Dongducheon-si	164	133	123
Gimpo-si	720	590	122
Osan-si	320	270	118
Gapyoung-gun	150	130	115
Namyangju-si	720	630	114
Gwangmyeong-si	435	385	113
Yeoju-gun	200	180	111
Uijeongbu-si	550	500	110
Yongin-si	1 300	1 200	108
Anseong-si	300	280	107
Icheon-si	350	330	106
Gunpo-si	350	330	106
Seongnam-si	1 200	1 140	105
Bucheon-si	980	930	105
Suwon-si	1 350	1 290	104
Goyang-si	1 100	1 060	103
Guri-si	240	240	0
Anyang-si	700	700	0
Gwacheon-si	112	112	0
Yangju-si	660	660	0
Ansan-si	1 000	1 000	0
Total	**18 505**	**16 070**	**115**

Source: Kim, Y.W. and Y.K. Moon (2008), "A Critical Review on the Population Forecast in Comprehensive Plan and Alternative Approaches" (in Korean), *Journal of Land Planning*, Vol. 43, No. 4, Korea Planners Association, Seoul.

Regional Development. A regional development project evaluation team was formed in 2009 to conduct integrated evaluation of the ministries' plans and regional plans. Its work is too recent to be assessed.

In order to close the gap between the expected and actual outcomes of urban plans and policies, Korea could consider increasing the use of modelling as a means of testing potential policy outcomes prior to policy implementation, and providing greater support for *ex post* evaluation and monitoring to measure the extent to which planning policies have had their intended effects.

Applying urban modelling to simulate land use changes: the example of the Seoul Metropolitan Area

The greater use of urban modelling in Korea could increase the awareness of future consequences and support long-term strategic decision making. Essentially, urban modelling would offer two key benefits. Firstly, urban models provide logical means to

understand complex urban systems. To do so, models are typically built around appropriate theoretical framework to capture the very nature of system under study and then tested against real world data to examine their validity. Well-established models are then applied for predicting future. Secondly, urban models provide computer based virtual laboratory to examine the effects of various policy options and alternative futures. Urban models, which involve various data analysis and computation work, are essentially implemented in computer environments. Combined with varying assumptions and data inputs, urban models support the use of land development scenarios in support of planning policy making. Korean policy makers and stakeholders can learn from possible outcome states in future without doing experiments in real world.

Korea could also consider expanding its spatial data infrastructure to improve urban simulation, monitoring and forecasting. More sophisticated use of urban modelling in Korea will require a fair amount of geospatial data, which could be made publicly accessible to reduce the time and cost needed for modelling. Contemporary urban models tend not to require extensive data sets that are hard to obtain or prepare. Although different styles of urban models require different geospatial information, there are commonly used data such as land use, land cover, transportation network, and so on. If spatial databases could be developed and made accessible in Korea, a wider range of users and organisations including local governments, could better conduct strategic planning exercises.

Korean governments have recognised the importance of framework data, *i.e.* a set of widely and commonly used geospatial data. However, additional improvements could be made in updating spatial data and making historical data available. Currently the Ministry of Land, Transport and Maritime Affairs (MLTM) is in charge of Korea's National Spatial Data Infrastructure policy.[30] Currently, the main concern for framework data is to assure the accuracy and timeliness of geospatial data. Less attention is paid to recording historical changes in spatial features. However, in order to analyse the evolution of the urban system and forecast future changes, it is essential to have longitudinal data in order to build and use dynamic urban models. For this reason, the development of historical Geographic Information System (GIS) is increasing in a number of countries. Examples include the National Historical GIS in the US and Great Britain Historical GIS in the UK. If it is well documented, historical geospatial data can benefit diverse spatial policy making in Korea.

Does planning have its intended effects? Supporting ex post evaluation and monitoring

To improve the relevancy of Korea's municipal urban plans, the Korean national government could provide technical assistance in measuring plan implementation and compliance. To date, despite the enormous planning initiatives under way, there has not been a serious evaluation of the extent to which these regulations have been implemented and/or followed. In several OECD countries, legislation has been introduced to require local authorities to carry out impact analyses as well as subsequent monitoring of their strategic-level plans.[31] In some cases, the findings of these analyses are made public, thus ensuring a higher degree of transparency and accountability. This practice is still relatively limited in Korea. Korean planners have difficulty in knowing the extent to which the plans they have created have actually been implemented. To measure the implementation of plans, methods could include conformance-based approaches, such as the application of a "planning monitor" to measure the extent to which the goals and the objectives of the plan have been met (Calkins, 1979) (Annex 2.A1). Performance-based methods could also be

considered to better understand the conditions under which land use and housing plans were consulted for subsequent decisions. More sophisticated analysis using Geographic Information Systems (GIS) could also be employed to map permits and compare regulations, as in the Brody *et al.* (2006) study on compliance to environmental protection regulations in Florida.

Developing indicators to measure the effectiveness and relevance of municipal urban plans could be useful. Such indicators may be necessary for Korean urban policy makers to understand the change of current urban spatial structure, and assess the policy impacts on urban competitiveness. The United Nations *Human Settlements Programme* is encouraging stricter evaluations of urban planning and has established evaluation guidelines (Box 2.12). Portland's Metro government and Portland State University collaborated with a range of partners[32] to draft a framework for regional indicators, which cover nine categories: *i)* education, *ii)* quality housing and communities, *iii)* economic opportunity, *iv)* healthy people, *v)* safe people, *vi)* a healthy, natural environment, *vii)* arts, culture and creativity, *viii)* access and mobility, and *ix)* civic engagement and connections (OECD, 2012, forthcoming). More importantly, Korean policy makers should clarify the intent of such indicators and differences between outputs and outcomes (OECD, 2012, forthcoming). For instance, to measure performances of infrastructure investment in transit, output indicators assess the number of construction jobs created during the life of the project, or the number of kilometres of transit built, and on the other hand, outcomes indicators measure impact on GHG emissions by examining change in modal share.

Box 2.12. **Guidelines on evaluations of urban planning**

Urban planning systems should integrate monitoring and evaluation as permanent features. This should include clear indicators that are aligned with plan goals, objectives and policies. Urban plans should also explicitly explain their monitoring and evaluation philosophies, strategies and procedures. Use of too many indicators should be avoided, and focus should be on those indicators for which information is easy to collect.

Traditional evaluation tools such as cost-benefit analysis, cost-effectiveness analysis and fiscal impact assessment are still relevant, given the realities of local government's resource constraints. There has been recent interest in performance measurement, return on investment and results-based management principles, and the use of these quantitative tools in urban planning practice should be encouraged.

All *evaluations should involve extensive consultation with, and contributions from, all stakeholders*. This can be achieved through, for example, participatory urban appraisal methods. Experience has shown that this can enhance plan quality and effectiveness through insights and perspectives that might otherwise not have been captured by the formal plan-making process.

Most routine monitoring and evaluation should focus on the implementation of site, subdivision and neighbourhood plans. The outcomes and impacts of many large-scale plans are difficult to evaluate because of the myriad of influences and factors at play in communities. It makes more sense for monitoring and evaluation to focus on plans at lower spatial levels, i.e. site, subdivision and neighbourhood plans.

Source: United Nations Human Settlements Programme (2009), *Planning Sustainable Cities: Global Report on Human Settlements 2009*, Earthscan Publications, London.

Given the Korean government's key role in land use policies and strategic planning, it could evaluate the effects of municipal planning on meeting national land demands. Land market assessments can determine how much land and infrastructure are currently available and project how much additional land and infrastructure need to be developed to accommodate urban growth. A variety of techniques have been employed in OECD countries to conduct a land market assessment and monitor land supply. Effective land analysis has allowed policy makers to identify areas that are growing the fastest and given them accurate projections to inform infrastructure development. Through a systematic land assessment, planning can help illuminate the effects of several land policies. These policies may include:

- increases in the permitted density of existing residential land and in the intensity of existing commercial and industrial lands in a zoning ordinance;
- financial incentives for higher-density housing;
- reduction of on-site parking requirements in a zoning ordinance;
- reduction of space requirements in a zoning ordinance;
- provisions permitting additional density or intensity beyond that generally allowed in the particular zoning district(s), in exchange for amenities and features provided by the developer;
- minimum density or intensity requirements in a zoning ordinance;
- redevelopment, infill or brownfield strategies;
- authorisation of housing types or site-planning techniques in a zoning ordinance that were not previously allowed by the local comprehensive plan or zoning ordinance;
- authorisation of changes in the zoning use classification, including the employment of mixed-use zones;
- and changes in standards for public and community facilities or services, including transportation, that require the use of less land.

An analysis of the effects of municipal land policies could inform the Korean government of the effects of the new zoning categories introduced in the *National Land Planning and Utilisation Act* (2003). This merits attention, given the limited amount of land in Korea and its importance in supporting economic activity and safeguarding environmental resources.

Notes

1. Managing resource consumption and environmental pressure are part of Korea's *National Strategy for Low-Carbon, Green Growth*, and will be discussed in Chapter 3.
2. A growth pole is a dynamic and highly integrated set of industries organised around a propulsive leading sector or industry (*industrie motrice*). A growth pole is capable of rapid growth and of generating growth through spill-over and multiplier effects in the rest of the economy. According to this concept, the set of industries forming the growth pole (*pôle de croissance*) might be clustered spatially and linked to an existing urban area.
3. Housing shortages have been one of the reasons for the sharp rise in housing prices. In 2010, the apartment purchase price index in Seoul was 495, while the national average was 398 (the basis was set at 100 in 1986) (Kookmin Bank, 2011).
4. The three categories are an over-growth restriction zone, growth control zone and nature conservation zone.

5. In 2003, the Korean government shifted about 1 000 of the central government's competencies to local government. In 2004, the *Five-Year Comprehensive Plan for Decentralisation* was established, creating 47 strategic goals to prop up the local autonomy. In 2006, the Jeju Province Special Autonomous Province was built to integrate all central government branches into the Jeju provincial government. In 2008, superintendents of local educational authorities were also directly elected by residents to secure educational autonomy.

6. The number dropped from 163 to 161 in 2010, after the merger of three *si* (Masan-si, Jinhae-si and Changwon-si).

7. First, the population size and economies exceed a certain level and thus have various industrial, economic and human resources. Second, there is a significant level of urban agglomeration supported by industrial clusters and an educational and cultural foundation. Third, they operate modern infrastructure necessary for international exchange, such as a hub airport and container port. Fourth, they exhibit a certain homogeneity, sharing natural, economic, social and cultural characteristics (Lee, 2006).

8. The provinces and large cities integrated in each MER include: *a)* the Capital Region: Seoul, Incheon, Gyeonggi; *b)* the Chungcheong region: Daejon, Chungcheongnam-do, Chungcheongbuk-do; *c)* the Honam region: Gwangju, Jeollanam-do, Jeollabuk-do; *d)* the Daegyeong region: Daegu, Gyeongsangbuk-do; *e)* the Dongnam region: Busan, Ulsan, Gyeongsangnam-do. The Gangwon and Jeju regions are grouped with the current administrative units of Gangwon-do and Jeju.

9. The ten missions are: 1) improve basic living conditions, including housing, job opportunities and water services, 2) implement voluntary integration of administrative divisions and collaborate with each other on a regional scale, 3) improve public services in health and welfare, especially in underdeveloped communities and among disadvantaged families, 4) strengthen educational competitiveness in the non-Capital regions, 5) improve cultural facilities and programmes for local residents, 6) make new growth engines by using locally endowed resources, 7) conduct pro-active place marketing based on historical and cultural heritage, 8) build a collaborative system by networking existing community leaders and organisations and using the trained creative class, 9) produce high value-added goods by developing local industries, and 10) implement local green growth programmes (MLTM, 2009).

10. Key urban problems raised from municipal government officials are 1. urban sprawl and unplanned development, 2. the decline of existing city centres, 3. unbalanced public services among cities, 4. degradation of the landscape, 5. lack of basic industry and weak foundations of the local economy, 6. a shortage of developable land in cities, 7. lack of interregional co-operation, 8. poor management of cultural heritage and 9. excessive energy consumption, including a transport system oriented toward private cars.

11. The Development Restriction Area (greenbelt) was demarcated in 1971 around the main Korean cities, with the aim of preventing urban sprawl and conserving the natural environment. Development within these zones, which accounted for 5 397 km^2, 5.4% of the national territory, was highly restricted. Critics contend that the greenbelt policy has generated "leap-frogging" urban development, while aggravating underdevelopment within the greenbelt area.

12. The programme was developed to strengthen the innovative capacity of provincial universities by reinforcing networks between local universities, government and industry; it was discontinued by the Ministry of Education, Science and Technology, however, in 2009.

13. There are two integrated Regional Innovation Councils, those of Gwangju and Jeollanam-do along with those of Daegu and Gyungsangbuk-do. Councils have promoted innovation cafés and facilitated network hubs to intensify interactions and meetings between regional specialists and experts. Inno-cafe users reached 130 000 and 66 000 consultations and co-operative interactions were registered. Conventions, fairs, forums and innovation festivals have also been organised to enhance innovation awareness with professionals and the public. Most of the tacit knowledge exchanges take place within short distances, *i.e.* within the framework of the main provincial cities. These initiatives therefore indirectly target main provincial cities and metropolises. In addition, there are 81 mini-clusters created in order to create networks between universities and industries. The aim is to encourage co-operation, to exchange knowledge and contribute to new technologies. The mini-clusters consist of small-scale industrial units (4 208 firms), research (210 centres) and universities (781 units) in each complex in 2010.

14. RICs and LIDCs include centres for state-of-the-art medical devices (Wonju-si, Gangwon-do), automotive parts (Jeonju-si, Jeollabuk-do) and electronic parts (Suwon-si, located in Gyeonggi-do). They offer SMEs, mainly in urban areas, technology advice, seminars, training courses and the use of scientific equipment for testing and experiments.

15. The Presidential Committee is in charge of comprehensive co-ordination and evaluation of regional development policy including basic direction, five-year regional development plans and measures for regional development, project management and evaluation. The committee is composed of nine ministers (Ministry of Knowledge Economy; Ministry of Strategy and Finance; Ministry of Education, Science and Technology; Ministry of Public Administration and Security; Ministry for Food, Agriculture, Forestry and Fisheries; Ministry of Land, Transport and Maritime Affairs; Ministry of Environment; Ministry of Culture, Sports and Tourism; Ministry of Health; and Ministry of Welfare and Family Affairs) and 17 external experts.

16. Since 2008, the Framework Act on National Land has authorised the MLTM to request that provincial comprehensive plans, *si/gun* comprehensive plans, regional plans and sectoral plans be adjusted when they conflict or are not in conformity with the comprehensive national plan. In addition, the 2011 *Framework Act on National Land* mandates that public authorities that develop territorial development plans submit a territorial evaluation form to the minister of Land, Transport and Maritime Affairs to demonstrate how the plans will contribute to sustainable territorial development.

17. In the US, a Micropolitan Statistical Area is defined on a functional basis, primarily through community data, and associated with at least one urban cluster that has a population of at least 10 000 but less than 50 000. As of 2006, there are 582 micropolitan statistical areas in the US and Puerto Rico. The majority (83.5%) of micropolitan areas are confined to one county, 13.2% cover two counties, 3.0% encompass three counties and two micropolitan areas span four counties (Office of Management and Budget, 2010).

18. Likewise, the state of Washington in the US has aggressively supported ADUs by requiring jurisdictions with over 20 000 residents to adopt ADU ordinances (Nelson, 2003). For model state and local ordinances for accessory dwelling units, see Cobb and Dvorak (2000). For housing design information about accessory dwelling units, see *www.mass.gov/envir/smart_growth_toolkit/pages/mod-adu.html*.

19. For additional information, see *www.cityofsantacruz.com/index.aspx?page=1150*.

20. Figure as of 2010 (Korea Statistics Office).

21. See *www.toronto.ca/metropolis/metropolistoronto2005/pdf/Immigrant_Entrepreneu_DBF47.pdf* for more information.

22. The share of public transportation in Seoul is roughly 60%, which is the highest among large metropolitan cities in the OECD countries. But average speed inside the city as well as on the outskirts of the city ranked the lowest in 2007 (Korea Statistics Office, 2011).

23. For instance, between 2000 and 2009 the growth rate in Gangwon-do (5.5%), where most of the mining industries are located, was below the national average (6.5%).

24. Notably, the population of Taebaek-si (located in Gangwon-do) declined by 43%, and that of Gwangyang-si also declined by 8% from 1990 to 2010.

25. Under the past administration, the Presidential Committee on Balanced National Development co-ordinated programmes from different ministries (including Ministry of Construction and Transportation, Ministry of Government Administration and Home Affairs, and so on) to improve living conditions in cities and rural communities. These ministries then selected target communities and cities to perform individual projects to enhance liveability and urban quality. The focus of the current administration has been on outdated and underdeveloped city hubs.

26. The open territory concept seeks to create an open territorial axis across Korea's three coastal areas. According to this plan, the western coastal axis will be developed as a new economic centre, responding in particular to China's growth; the eastern coast will retain its conventional manufacturing sector as a driving force of the region's economy, while the southern coast will become a centre of international logistics.

27. The Pan Yellow Sea Region (PYSR) covers the coasts of northern China (Bohai Rim), southwestern Japan (the Kyushu area) and western and southern Korea.

28. Although the right of approval of urban master plans has been delegated to Provincial governor or Metropolitan city mayor since 2005, the first urban master plan formed after the change of the delegation system had to be approved by the minister of MLTM. That is why there is a gap between the proposed and the approved number of targeted population.

29. Whereas the National Statistics Office estimates that the Korean population will be 49 324 000 in 2020, the total targeted population in urban master plans is 62 457 000.

30. The notion of a National Spatial Data Infrastructure was first introduced by the Executive Order 12906 in the US in 1994. It contained a set of measures to promote the efficient sharing of geographic information among public and private sector users. The practice quickly gained acceptance internationally. In Korea, a set of framework data was defined in the *Spatial Data Infrastructure Act* 2009. This includes topography, coastline, administrative boundary, road and railway, cadastral, building and structure, hydrography, place names, digital ortho-imagery and Digital Elevation Model (DEM).

31. In the UK, local authorities have statutory duties for local transport, the impact assessment of local economic development or for regeneration projects. In France, public or private project leaders are mandated to implement environmental impact analysis. Requirements have been made more stringent with the recent Grenelle agreements.

32. Including Washington, Clackamas, Clark and Multnomah counties, the Portland Development Commission, Greenlight Greater Portland, the City of Portland, and Portland-Oregon Sustainability Institute (POSI).

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ANNEX 2.A1

Methods to Monitor the Effectiveness of Planning

At the end of the 1970s, Calkins (1979) presented the planning monitor, a mechanism to measure the achievement of plan objectives and to explain eventual differences between planning and urban development. There are two separate components of the planning monitor: *i*) a set of rational planning procedures; and *ii*) a supporting information system. A planning monitor would provide information that is needed for modification of a plan and for the evaluation of planning as an effective means of controlling development. When fully operational, a planning monitor would introduce accountability into the planning process through the evaluation of plan implementation actions. The planning monitor is a system where I is a vector of inventory attributes; subscript $t + n$ is the final-state inventory and subscript t is the inventory at the beginning of the planning period; superscripts g and a are used to differentiate between planned inventory vectors and actual inventory vectors, respectively; P is a vector of the rate of the change that is expected as a result of public policies; and R is a vector of the rate of forecast change, or change that is expected as a result of exogenous factors.

$$I_{t+n}^{g} = I_{t}^{a} + \sum_{n=1}^{n} (P_{t+n} + R_{t+n})$$

The Plan Implementation Evaluation (PIE) Methodology developed by Laurian *et al*. (2004) offers another evaluation framework. It conceptualises implementation as the extent to which a plan achieves its policies through adoption of the relevant management techniques in development permits. For PIE, the permitting process provides the locus of observation of the linkages between policies and their implementation. This link most strongly reflects implementation as decision makers operationalise the plan objectives (and related policies) through permits on a regular basis. Thus, permits are intended to manage land development and thereby implement the plan. A well-implemented plan is defined as one in which a high proportion of policies for achieving an objective in the plan are implemented by the development permits. The evaluation method focuses on the strength of the linkages between policies and permits, measured through the adoption of relevant management techniques. For each permit, implementation is measured as the proportion of plan polices that are implemented by the permit (as a proportion of all relevant policies). PIE has been applied to six New Zealand plans and to almost 400 land development permits and has focused on storm water and urban amenity management.