

Abstract

National  
Human  
Resources  
Development

Creative Korea

# Second Basic Plan for National \* Human Resource Development

# NHRD



Government of Republic  
of Korea

## Preface

In the early years of any knowledge-based society, people and knowledge are critical factors that determine the competitiveness and fate of a nation as well as the growth of individuals and corporations. And a new strategy of national development based on the two pillars of "human capital" and "technology innovation" is required if Korea is to cope with the limitations of growth driven by labor and capital inputs, with decreasing growth due to low birth rates and population aging, and with deepening income inequality caused by disproportionate investment in human capital. In response to these changes in the policy environment, many advanced nations are striving to develop knowledge and human resources at the national level. The Korean government implemented the First Basic Plan for National Human Resource Development, formulated in December 2001, and completed in 2005.

Upon completion of the First Basic Plan, the government developed the Second Basic Plan for National Human Resource Development (2006–2010), bringing together policy tasks for human resource development to be carried out by some 20 government ministries and offices from 2006 to 2010.

A statutory master plan for human resource development drawn up under Article 5 of the Basic Human Resource Development Act, the new plan sets as its policy vision: "building a learning society with strong human resources." The aim is to develop Korea into one of the top ten world leaders in human resources based on growth driven by people and knowledge.

The plan will implement 200 policy tasks, including 67 key tasks in 4 policy areas—the development of a globally competitive core workforce, the empowerment of all individuals for lifelong learning, the facilitation of social integration and educational and cultural welfare, and the expansion of the human resource development infrastructure—and 20 policy sectors. The policy tasks included in the new plan specifically state performance goals, measures to be taken, time frames, and financial investment schemes, rendering the execution of such policies more effective.

Over the next five years, the government will develop and implement specific action plans each year for the policy tasks presented in the Second Plan while focusing on delivering measurable results to the public by encouraging the broad-based engagement of local governments and private actors such as universities and corporations. It will also examine, analyze, and assess budget programs related to human resource development to help ensure the successful implementation of the Plans, contributing to raising Korea's competitiveness on the strength of its human resource development.

## Past Developments

◊ An **advisory committee was formed** to set the agenda for the Second Basic Plan for National Human Resource Development in Feb., 2005.

- The committee is comprised of representatives from the Federation of Korean Industries and other business associations, university presidents, and heads of relevant research agencies such as KRIVET, the Korea Labor Institute, and the Korea Development Institute.

◊ The guidelines for the formulation of the Second Basic Plan for National Human Resource Development were **finalized and notified to the relevant government ministries and offices.**

- The Ministerial Committee on Human Resource Development met for its first deliberation of 2005 on March 3, 2005.

◊ **Opinions were heard** and **ministries were consulted** on the direction and policy tasks of the Basic Plans.

- Inter-ministerial meetings and workshops on the Basic Plan: April–July, 2005

- A planning group, a committee of area experts, and a joint ministry meeting were organized in **March 2005** to form the wider Basic Plans Development Board.

◊ Plans were **prepared** for the areas under the jurisdiction of each ministry and consolidated in May to Aug. 2005.

- Additional ministry plans were submitted in June to Aug. 2005.

◊ An **interim report** was produced on the direction and Policy Tasks of the Second Basic Plan.

- The Ministerial Committee on Human Resource Development met for its fourth deliberation of 2005 on Aug. 18, 2005.

◊ **The financial investment plans** of each ministry under the Second Basic Plan were refined.

◊ The Working-Level Coordination Meeting for Human Resource Development was held on Oct. 14, 2005 and Nov. 28, 2005.

◊ A public hearing on the Basic Plans was held on Oct. 20, 2005.

- Public opinions were received over the web site and from a survey taken from Oct. 25, 2005 through Nov. 7, 2005.

◊ The Ministerial Committee on Human Resource Development discussed and finalized the Second Basic Plan on Dec. 28, 2005.

◊ The Plans were reported to a cabinet meeting on Jan. 10, 2006.

## Achievements and Reflections

1st

Policy Landscape During the Development of the Basic Plans  
(2001-2005)

In January 2001, the government declared knowledge and people to be the critical factors of national competitiveness in a knowledge-based society, started devising a national vision and strategy for human resource development, and established a new deputy-prime minister's office responsible for human resources.

- ◊ **There exists a strong labor supply but its quality is non-competitive.**
  - The quality of higher education has failed to keep up with its quantitative growth and the level of collaboration between universities and local industries is low.
    - Four-year university enrollment: 146,000 (1970) → 1,931,000 (2001)
    - Number of students per professor: Korea 30.7, the United States 14.6, Japan 11.8 (2000)
    - Suitability of university education for the needs of a competitive economy: 43rd out of 47 countries surveyed (2000 IMD)
- ◊ There has been a loss of labor due to the inefficient development, allocation, and exploitation of human resources.
  - There exists a mismatch in the supply and demand of jobs and skills.
  - Women and youth remain largely under-utilized resources, a significant labor loss.

- Labor force participation of women ('00): 48.8 percent; of young people (ages 15–29): 47.2 percent
  - The low involvement of adults in continuing education has made them more vulnerable to changes in the labor market.
- ◊ There exists a strong need for a coordination mechanism for human resource development that connects education, employment, and welfare.
- Plans on human resource development were developed and implemented by individual ministries and offices without coordination, undermining the effectiveness of related policies and the efficiency of financial investments.
  - A total of 225 HRD-related functions are distributed among 28 ministries, offices, and agencies (2001)
  - The Ministerial Committee on Human Resource Development was formed (Mar. 2000) and a deputy prime-ministerial office, mandated with the development of human resources, was established (Jan. 2001).

### Achievements of the Past Five Years

The scope of Korea's human resource development policies, which have only served the education system, has been expanded to encompass education, the labor market, and industry, and the legal and institutional **foundation have been laid**.

- ◊ **The first ever comprehensive national scheme** since the inception of the government **was drawn up** to promote human resource development.
- Eighteen government ministries joined forces to draw up the Basic Plans for National Human Resource Development, integrating policies previously scattered over individual ministries (Dec. 2001).

- We were able to draw public attention to the importance of our human resource policy by building the necessary legal and institutional infrastructure and a system of collaboration among ministries and offices.
- ◊ The Ministerial Committee on Human Resource Development brings together **14 government ministries to meet every other month** to typically **discuss 4 policy tasks**.
  - The scope of human resource policy services, which was originally directed toward **education** only, has been expanded to include **the labor market and industry**.
    - The Ministerial Committee on Human Resource Development (2000–2005) discussed a total of 202 agenda items, including a master plan for the cultivation of human resources in the so-called 6T areas.
- ◊ Human resource policies, previously handled by individual ministries, are now being implemented in a coordinated way, **eliminating the overlapping of financial investments and enhancing synergy**.
  - The Ministry of Education and Human Resource Development, the Ministry of Commerce, Industry, and Energy, and seven other ministries worked together to develop a comprehensive plan to promote cooperation among industry, academia, and the research community (Jan. 2002), and launched collaboration programs.
    - **Universities are designated and developed as the hub of industry-university collaboration** (23 universities: the Ministry of Education and Human Resource Development, the Ministry of Commerce, Industry, and Energy, and the Ministry of Labor); industry-academia cooperation foundations are established at universities (93 percent of all universities nationwide); and sector councils dedicated to human resource development issues are set up (10 industries).
  - A scheme has been developed to **nurture a top-notch workforce in the 10 future growth-engine industries** (July 2005).
  - **The Best Human Resources Developer accreditation** is granted to organizations that strive to raise the level of individual competencies



through merit-based hiring and offering continuous learning opportunities for employees.

- Ten companies were jointly accredited by the Ministry of Education and Human Resource Development, the Ministry of Commerce, Industry, and Energy, and the Ministry of Labor in 2005 as the best enterprises in promoting the development of employees. Now the accreditation extends to the public sector with the involvement of the Civil Service Commission and the Ministry of Government Administration and Home Affairs starting in 2006.

◊ New policy tasks are identified in areas where human resource development lags.

- To ensure the uninterrupted development of people during their military service, **the Master Plan for Military Human Resource Development** was drawn up with the participation of 11 government ministries and offices (July 2005).

- An amendment to the Higher Education Act and Military Service Act is being pursued to allow military servicemen to earn college/university credits (Dec. 2005).

- **The Educational Welfare Master Plan**, which combines education and culture with welfare, was developed and put in place jointly by seven government ministries with a focus on improving educational welfare in low-income urban communities (Aug. 2002).

- The plan was kicked off at six major cities, including Seoul and Busan (2005), and will cover cities nationwide (2010).

- **A plan to facilitate voluntary services** was also designed collectively by five ministries, including the Ministry of Government Administration and Home Affairs, the Ministry of Education and Human Resource Development, and the Ministry of Health and Welfare (May 2004).

- The Basic Voluntary Services Act was enacted (Aug. 2005).

◊ Policy tasks concerning science and technology personnel are developed in conjunction with the National Science and Technology Commission.

- Eight ministries, including the Ministry of Science and Technology, **devised measures to encourage more young people to enter the fields of science and engineering** (Aug. 2003).
- **The Strategy for the Cultivation of Science and Technology Personnel** was established to transform Korea into a creative, human resource power (July 2005).

### Limitations in the Implementation of the Basic Plans

1st

(2001~2005)

The Basic Plans were developed without either accurate projection of labor demand and supply or performance measures, and tangible results based on the coordination of related policies could not be attained, as the Ministerial Committee on Human Resource Development had no authority to evaluate programs and adjust ministerial budgets.

- ◇ There was a lack of strong institutional support (e.g. the Basic Act was legislated in Aug. 2002 only after the formulation of the Basic Plans in 2001) **as well as inefficiency, as seen in the drawing up of action plans only at each stage of implementation.**
  - The Basic Plans were **little more than a collection and rearrangement of action plans** under the policy tasks developed by **each ministry without cooperation and separation of roles among ministries** based on strategic planning.
    - The Basic Human Resource Development Act (Aug. 2002) and Enforcement Decree were promulgated (Feb. 2003); the Mid- to Long-term Outlook on National Labor Demand and Supply was published (Dec. 2002); and 124 policy tasks were developed under the Basic Plans (Dec. 2004).
- ◇ Coordination in policies across all ministries and efficiency in financial investments had not sufficiently increased, as the **Ministerial**

**Committee on Human Resource Development** was not vested with adequate authority for effective coordination.

- The coordination of the Committee was compromised in the absence of the means to evaluate programs and adjust budgets appropriated for such programs.
- The findings of the Committee deliberations had little more power than recommendations, and the lack of enthusiasm on the part of ministries about the evaluation process also **undermined the effectiveness of performance evaluations and investment analyses.**

<Table I - 1> Financial Investments in the Basic Plans for Human Resource Development (2005)

(Budget figures in hundreds of millions of won)

Policy Area	Policy Task	Action Items	Budget Appropriation			Sub-total
			National Treasury	Local Expenditures	Private Sector	
Capacity building	14	38	10,892	4,121	16	<b>15,029</b>
Development of knowledge and human resources	19	49	16,221	2,717	806	<b>19,744</b>
Exploitation and management of human resources	10	24	8,465	6,521	0	<b>14,986</b>
Human resource development infrastructure	6	13	2,587	0	0	<b>2,587</b>
Total	49	124	<b>38,165</b>	<b>13,359</b>	<b>822</b>	<b>52,346</b>

□ A performance evaluation was conducted for the period of 2003–2005 and investment analysis for 2004 (five unit projects) and 2005 (two projects).

○ The leverage of the Basic Plans faded toward the end **with changes in the policy environment.**

- The relationship between a plan of the Ministry of Science and Technology to build a National Innovation System (NIS) (2004) and the Balanced National Development Plan presented by the Presidential Committee on Balanced National Development under the Ministry of Commerce, Industry, and Energy (2004) was not clearly defined.
  - The linkages and coordination were insufficient in formulating 38 laws and 39 basic plans concerning human resources and employment (Board of Audit and Inspection Nov. 2004).
- Related policy sectors were not incorporated into the Basic Plans through policy tasks aimed at, for example, addressing growing social disparity and falling birth rates.
- The low level of involvement and enthusiasm on the part of government ministries served to discourage **the cooperation and coordination enabled by the Ministerial Committee on Human Resource Development.**
  - Agenda items presented to the Ministerial Committee on Human Resource Development: collectively 34 percent; the Ministry of Education and Human Resource Development 33.5 percent; the Ministry of Labor 10.2 percent; and the Ministry of Science and Technology 6.6 percent
- ◇ The First Basic Plan for Human Resource Development did **highlight the importance of human resource development on a national scale**, but failed to serve as the much-needed government-wide plan of action.
  - The Plans **failed to significantly raise national competitiveness in human resources** as the quality of university education was not significantly improved and education was **not** effectively **addressed** by policies on industry, employment, and welfare.
    - Korea's national competitiveness (IMD) : 28th/47 nations (2000)→ 29/60 (2005)  
Korea's national competitiveness in education (IMD) : 32/47 (2001)→ 40/60 (2005)
  - **The problems at the time the Basic Plans were established still remain**, including the mismatch between the supply and demand of

manpower, low productivity, an untapped female workforce, and poor participation in lifelong learning.

## <Table I - 2> Comparison of Human Resource

### Development Indicators

(Ranking, percent)

Indicator	2000	2005
Labor productivity (as measured by PPP)	32nd / 47 nations	41st / 60 nations
Suitability of university education to meet economic needs	43rd / 47 nations	52nd / 60 nations
Human Development Index (HDI)	31st	28th
Youth unemployment (percent)	8.1 percent	7.4 percent
Labor force participation of youths (ages 15-29, percent)	47.2 percent	48.0 percent
Labor force participation of women (percent)	48.8 percent	50.1 percent
Participation in lifelong learning (percent)	17.2 percent	21.6 percent

\* Source: Data from the IMD and the National Statistical Office of Korea.

## II

# Current Status of Human Resource Development

### Key Strengths

Primary and secondary school education provide a solid foundation for the development of human resources.

- Not only has there been **quantitative growth** in primary and secondary school education (primary and secondary school education is compulsory, and the middle school enrollment rate is 97 percent), but remarkable gains have also been achieved in educational **quality**, as **indicated** in **international comparisons of scholastic achievements**.

- PISA 2003 : First in problem-solving, second in reading, third in math, and fourth in science.

- TIMSS 2003 : Second in math, third in science.

Improved access to university education ensures a reliable supply of a highly-qualified workforce

- A graduation quota was introduced in the 80s when **income growth and a strong zeal for education** among the Korean people drove up the demand for university education, and the demands for democracy and social autonomy since 1994 led to significant gains in post-secondary education opportunities.

- **The average number of years of education has reached global levels.**

- Sixth globally in human capital: the average number of years of education for the population aged 25–64 in the early 1970s was 7 and in 2002 it was 13.
- University enrollment : 33.2 percent (1990) □ 82.1 percent (2005) in Korea; 59.9 percent (1990) □ 61.7 percent (2001) in the United States

◊ **Internationally, human capital building is viewed as the key factor in the economic and democratic development of Korea.**

- A Deutsche Bank research report (Aug. 2005) states that, in the long term, a 10 percent growth in human capital raises per capita GDP by 9 percent and the key to becoming a high-growth country by 2020 is by increasing human capital (presenting the examples of Korea and Spain).
- ◊ A high concentration of highly-educated people holding doctoral degrees in colleges and universities (76 percent) indicates high research potential.
- ◊ Strong enthusiasm for education and the arrival of a knowledge information society has increased the demand for continuous education for adults.

### Key Challenges to Address

□ Rectify the imbalance between the demand and supply of human resources to ensure balanced industrial development

- ◊ It is forecast that the supply of individuals with a bachelor's degree in science and technology will **exceed demand** while the number of **Ph. D. holders** in certain high-tech fields will not keep up with the demand, with an overall **shortfall in the level and quality of skills required**.
- Oversupply of science and technology personnel (2005–2015) : 112,000 university graduates and 176,000 junior college graduates (KISTEP 2005)

◆ **Professionals** represent a relatively **small** proportion **of the high-value-added service industry**, the qualified workforce is not globally competitive, and brain drain is a growing concern.

□ Percentage of professional workers : Korea (19.2 percent, 2002), Germany (39.4 percent, 2000), the United Kingdom (37.2 percent, 1999)

□ Comparison of Koreans studying overseas and foreigners studying in Korea (Ministry of Education and Human Resources Apr. 2005): 192,254 vs. 22,526

◆ **Industrial technicians** are in short supply in the backbone industries and the manufacturing sector.

□ Labor shortages in small and medium enterprises 129,000 (2004): 113,000 workers in manufacturing (5.1 percent) and 15,000 in the service industry (3.4 percent)

□ Foreign workers in Korea: 355,000 (June 2005)

#### □ Improve the quality of university education

◆ Korea has **one of the world's highest college and university enrollment rates**, but **the quality of university education falls short of global standards**, leaving the demand side unsatisfied with the quality of the workforce produced.

□ Number of Korean universities ranked among the global top 200: 3 (The Times 2005)

□ Suitability of universities to fulfill economic needs: 52nd (among 60 countries, IMD 2005)

◆ Universities lack the sufficient educational infrastructure required for the nurturing of a specialized, core workforce.

□ Number of students per professor: Korea 39 (2004), Japan 11 (2002), the United States 14 (2002)

□ Higher education costs as a share of GDP (2005) : Korea 0.3 percent, OECD average 1.1 percent

◆ There has been a steady increase in scientific papers published in international journals and patents registered in the United States, but



**the support to facilitate the commercial application of the outcomes of university research activities** through technology transfer remains inadequate.

□ Papers published in overseas journals (Ministry of Science and Technology 2004) : 13<sup>th</sup> globally, Patent registration in the United States. (U.S. Patent and Trademark Office 2003) : 6<sup>th</sup> globally

□ Technology transfer from the public to the private sector (2003) : universities 4.7 percent, contribution (research institutes) 18.9 percent

□ Promote collaboration among businesses, academia, and the research community to enable education and research to better meet the needs of the industry

◇ **Research capabilities of universities** are left largely unused by enterprises working to develop source technology

□ Corporate R&D investment spent by universities: 2.4 percent (2000) □ 1.7 percent (2003) (KISTEP 2004)

◇ Workers with knowledge and skills required by enterprises are in short supply due to **the scarcity of curricula that is fully in line with the demand of the industry** (skills mismatch).

□ 55 percent of university-graduate employees feel that their jobs do not match their fields of study (National Statistical Office of Korea 2004).

◇ The forecasting system for mid/long-term labor demand and supply is not well-established and human resource policies are not fully responsive to market demands.

□ Facilitate the development of workers' vocational skills and boost adult participation in lifelong learning

◇ The labor productivity of Korean workers is 41<sup>st</sup> globally (IMD 2005) and the significance accorded by corporations to employee training and education is also in the middle (25<sup>th</sup>, IMD 2005).

◊ Despite the need, **the participation of adults in lifelong learning ranks at close to half of the OECD average.**

□ Rate of participation in lifelong learning (2002) : Korea 21.6 percent (2004), OECD average 36 percent

□ Increase the development and exploitation of young people, women, and the middle-aged and elderly population

◊ The unemployment rate among the youth population (ages 15-29) has hovered around 7.2 percent (340,000 persons) as of November 2005, twice as much as that of the overall population at 3.3 percent, **accounting for 39 percent of the total number of unemployed.**

◊ The labor force participation of women falls below the OECD average (approximately 60 percent).

□ France (50.7 percent), United Kingdom (55.6 percent), United States (59.5 percent) (2003)

◊ The middle-aged and elderly population is not participating actively in vocational training programs.

□ Participation of currently employed workers in vocational training (2004) : ages 20-29 46.1 percent, 30-39 25.3 percent, 40-49 5.9 percent, 50 or over 0.1 percent

□ Focus on fostering creativity in elementary and middle school education

◊ The revision of curricula and innovation in teaching methods are required to foster creativity in elementary and middle school classrooms.

### III

## Future Outlook and Implications

### Main Trends from the Perspective of Human Resource Development

#### □ Innovation-driven strategy for national growth gains in importance

◆ **Human resources** and knowledge and information have emerged as the main drivers of national competitiveness.

- The traditional model of input-driven economic growth reached its limit in the 1980s and national GDP has stalled below the \$20,000 mark for a decade.

□ Fall in the potential growth rate: 7.8 percent (1980s) □ 6.0 percent (late 1990s)  
□ 5 percent (2005 projection)

□ New growth theory: In addition to capital and labor, **human resources and knowledge and information** determine **national competitiveness** and **economic growth** (Romer 1986)

□ Sustained economic growth requires policies aimed at enhancing the contribution of total factor productivity (e.g. human resource development, technological innovations).

◆ According to estimated potential growth rates by 2020, the contribution of labor and capital to economic growth will remain weak.

- Achieving a potential growth rate of 5 percent requires an **innovation-driven growth strategy** that boosts the contribution of **total factor productivity** to growth (1.5 percent □ 2.0 percent).

<Table □ - 1> Growth Factor Analysis and Outlook

Period	GDP Growth Rate (Potential)	Contribution to Growth		
		Labor	Capital	TFP
1995-2000	4.75%	1.27%	2.26%	1.22%
2000-2003	4.08%	2.10%	1.51%	0.47%
2003-2010	4.56%	1.45%	1.62%	1.50%
2010-2020	4.82%	0.93%	1.91%	2.00%

\* Source: Reorganized data from a public hearing on the National Financial Management Plan (April 8, 2005)

·TFP : Part of the potential growth that can be achieved by human resource development and technology innovation.

◇ Korea's technological and R&D infrastructure is now on par with that of the industrialized world, with the excellent information technology infrastructure and advances brought on by a knowledge and information society.

- Contribution of the IT industry to the national economy (level of IT specialization) : 1st in OECD countries (2002)
- Global competitiveness in technology infrastructure : 2nd among 60 countries (IMD 2005)
- Global competitiveness in scientific infrastructure : 15th among 60 countries (IMD 2005)

◇ Despite the advent of a knowledge-based society where national wealth depends on **intangible assets** (e.g. **human capital**, social capital), the quality of our human resources still falls short of global standards.

- When the knowledge power of Korea is 1, that of the United States is 17.0, Japan 7.4 and Germany 4.0 (Korea Education and Research Information Service 2005)

□ Total assets per capita (natural resources + product resources + intangible capital) : Korea 25th, Switzerland 1st, United States 4th, Japan 6th (World Bank Sep. 2005)

◇ Korea's university education has yet to attain a global competitive advantage, notwithstanding universal access to higher education that plays a pivotal role in developing the core workforce of a knowledge-based society.

□ Number of universities ranked among the global 500: 8 (Shanghai Jiao Tong University, China 2005)

◇ Knowledge-based industries are expected to represent an increasingly larger share of the manufacturing as well as the service sector, but **"the creative class" is still a minority.**

□ Knowledge-based manufacturing as a share of the overall manufacturing industry: 60 percent (2000) □ 67.1 percent (2010)

Knowledge-based services as a share of the overall service industry: 40 percent (2000) □ 51.3 percent (2010)

□ Proportion of the Creative Class: 38th among 39 countries (Richard Florida, *Creative Class War*, 2004)

◆ The Creative Class is defined as those working in the fields involving new ideas, technology, and content (e.g. scientists, engineers, architects, designers, educators, artists, and musicians).

□ Korea is becoming an aging society with a low fertility rate

◇ The total fertility rate of Korea stood at 1.16 in 2004, a rate lower than Japan's 1.29 and is among the lowest around the world.

- **The working-age population (ages 15–64) is forecast to shrink** after the 2010s, **causing a labor shortage.**

□ The elderly as a proportion of the working-age population : 10 percent (2002) □ 20 percent (2020) □ 36 percent (2030)

- ◊ Korea is expected to become **an aged society by 2018** with the proportion of the population aged 65 or over at 14.4 percent and **a super-aged society in 2026** with the same population growing over 20 percent.
  - Number of years estimated to take to move from an aging society (7 percent) to an aged society (14 percent): Korea 18; Japan 24; United States 71
  
- ◊ With the rapid aging of the population, **supporting the elderly poses a major problem.**
  - Aging index (population aged 65 or over/population aged 0-14 × 100) : 34 (2000) □ 62 (2010)
  - Cost of supporting the elderly : 12.6 (2005) □ 14.9 (2010) □ 21.8 (2020) □ 37.3 (2030) □ 69.4 (2050)
  
- ◊ Without innovation in human resources, economic growth will likely continue to slow down due to the effects of population aging.
  - Economic growth forecast : 3 percent level in 1921-1930 □ 2 percent level in 1931-1940 □ 1 percent level in 1941-1950
  - Assuming that human capital remains at the 2001 level, economic growth rates will decline further to an average of 1.5 percent during the 2006–2050 period.
  - **A quantitative growth strategy** focused on attracting foreign labor, increasing the labor force participation, and raising the retirement age will **prove insufficient to address growth that is** stunted by aging.
  - Responding to the slowing growth requires an **improvement in total factor productivity** based on **gains in human capital** and R&D efforts.
    - Which, then, will boost the growth rate by an annual average of 0.5-1.3 percent points until 2050.

<Table □ - 2> Trend of Average Growth Rates by Period

## As Affected by Aging

(percent)

Assumption	2006	2011	2021	2031	2041	Total Average
	- 2010	- 2020	- 2030	- 2040	- 2050	
Aging forecast	4.12	3.43	3.33	2.64	1.45	2.87
<b>No gains in human capital</b>	<b>3.04</b>	<b>1.90</b>	<b>1.82</b>	<b>1.27</b>	<b>0.34</b>	<b>1.52</b>
3 percent point inflow of foreign labor*	4.13	3.44	3.32	2.62	1.44	2.87
5 percent point rise in labor force participation	4.43	3.75	3.67	3.02	1.86	3.23
3-year rise in the retirement age**	4.10	3.53	3.52	2.75	1.38	2.95
<b>0.5 percent point increase in TFP</b>	<b>4.45</b>	<b>3.87</b>	<b>3.90</b>	<b>3.21</b>	<b>2.04</b>	<b>3.38</b>

\* As of May 2005, foreign workers (360,000) amount to 1.5 percent of the Korean nationals currently employed (23 million).

\*\* Average age of retirement (2002) : 57.1 for clerical and office workers, 56.6 for production and technical workers

<Source : Bank of Korea, "Impact of Aging on Economic Growth," Sep. 2005>

### □ Widening social disparity

◆ Income inequality has worsened when compared to the early 1990s.

□ The Gini coefficient: 0.295 (1990) □ 0.320 (1999) □ 0.306 (2003) □ 0.310 (2004)

□ Income quintile magnification: 4.64 (1990) □ 5.49 (1999) □ 5.22 (2003) □ 5.41 (2004)

◆ The wage level of small and medium enterprise employees against that of those working for larger corporations has dropped while the wage of workers with university or higher degrees relative to that of their high school-graduate counterparts is on the rise.

□ Wage proportion of business operations employing 10-29 workers (relative to enterprises hiring 500 or more) : 67.2 percent (2000) □ 64.4 percent (2002)

□ Monthly salary of university graduates relative to that of high school graduates (assuming the monthly salary of high school graduates at 100) : 147 (1995) □ 152 (1999) □ 152 (2003)

◇ **Investments** in education and **human capital also vary widely according to the income level of families**, and such inequality in human capital investment further broadens income disparity among different income classes.

□ Education expenditure (as a share of consumption expenditure, 2005) : the lowest tenth (lowest income bracket) 8.5 percent, the highest tenth 13.4 percent

□ Monthly average education expenditure by income class (2005) : the lowest tenth 78,000 won, the highest tenth 523,000 won.

□ **Strong and continuing trend toward globalization and regionalization**

◇ There is **more international competition** to attract a highly-qualified, technical workforce due to the greater movement of people across national borders.

□ Average proportion of the foreign-born population in OECD countries : 7.8 percent

Proportion of non-citizens: 4.5 percent (OECD 2005)

Thirty-six million people of the total OECD population live in OECD countries other than their home country.

◇ **Balanced development strengthens the function and role of regions, and the transfer of national affairs to local governments confers more autonomy and responsibilities on each region.**

◇ We need to make it easier for foreigners to live and work in Korea to address labor shortages and find a solution on how to accommodate the training and education needs of foreigners in our education system.



□ Early childhood learning and lifelong learning matter now more than ever

- ◇ It is now easier to understand the mechanisms behind human learning with the advance of cognitive neuroscience on human brains.
  - **The acquisition of a foreign language** is more effective in **the elementary school level** than in the middle school level.
  - **Adults have strong motivation for learning and a great ability to synthesize and judge**, and certain **cognitive abilities** (e.g. vocabulary) **continue through the age of 70**.
  - The stages of literary, mathematical, and emotional development according to the age of children and barriers thereto need to be identified and incorporated into education programs through accurate diagnosis.

◇ Key implications

- **Teaching and learning programs tailored to the needs of each individual** is necessary to ensure an individualized curriculum and learning strategy.
- Given the sensitivity of brain development in early childhood, the currently rigid educational system needs to be revamped **to introduce a more flexible system that will support the learning experience of young children**.
- Efforts should be made to raise **awareness of the importance of and need for lifelong learning for adults** and to deepen understanding of the "school-to-work" system.

□ Mid- and Long-Term Outlook for the Labor Supply and Demand

【 Overall Projection 】

- ◊ The economically-active population has grown by approximately 290,000 persons annually from **23.4 million in 2004** and is expected to reach **26.5 million in 2015** (an increase of 3 million).
  - According to the **age structure** of the economically active population, the proportion of the main age group who are 30-49 years of age is dwindling while that of the elderly (aged 50 or over) is growing.
    - The proportion of the youth (ages 15-29) is in steady decline : 21.3 percent (2004) □ 15.8 percent (2015)
- ◊ There will be an estimated 5.79 million people graduating from a **college or university** against a demand of around 5.24 million during the period from 2005 to 2015, leaving a projected **oversupply of 550,000 people** (approximately 50,000 annually).
  - A surplus of 354,000 junior college graduates, 190,000 university graduates, and 4,000 master's degree holders
  - **Excess supply** is expected in **highly-skilled office jobs** and **excess demand is expected in low-skilled office workers and production workers.**

### Supply/Demand Outlook by Area

- ◊ Overall, there is a projected surplus of college/university graduates, but **there is a shortage of people meeting the requirements of the industry ("skills mismatch")**.
  - **The number of doctoral degree holders in the next-generation telecommunications and digital content and SW solution** are 80 and 560, respectively.
  - A shortage is expected in **R&D personnel, among all IT workers, and those with a master's or doctoral degree** (64,000 persons in 2005–2015).

<Table □ - 3> Forecast of Manpower Supply and Demand

## by Area (2005–2015)

(In thousand persons)

Area	Supply (S)	Demand (D)	Oversupply (S - D)
Science and technology	1,368	1,059	309
Next generation growth engine industry (R&D personnel)	66	38	28
IT (R&D personnel)	1163 (167)	982 (231)	181 ( - 64)
Culture industry	295	274	21

- The forecast for the next-generation growth engine industries is for the period of 2005 to 2010.

### Overseas Trends

Today, world countries strive to strengthen their national strategy in areas connected to human resource development such as education, training, science, and employment, and develop future strategic plans seeking a systematic policy designed to create and leverage knowledge and human resources.

#### □International institutions

- ◆OECD, the World Bank, and other leading international institutions **view human resources as a key element of a knowledge-based economy** with a strong **emphasis on the importance of education and training.**

- Four elements of a knowledge-based economy: macroeconomics and related institutions, human resource development, information technology, and a national system of innovation

#### □Major advanced countries

◊ The advanced nations of the United States, the United Kingdom, and Japan **have adopted** strategies for human resource development, such as **the promotion of lifelong learning and the development of vocational skills as their core national strategy** to better **adapt to being a knowledge-based economy**.

□ The United States stressed the importance of **human resource development** initiatives including research support for undergraduate and graduate students in the fields of science and engineering and the cultivation of innovative future leaders in its strategy Innovate America (2004).

#### □ BRICs (Brazil, Russia, India, and China)

◊ The BRICs economies strive to improve their national competitiveness through **social infrastructure, improved systems, and diversification of growth engines** to better compete in the global market.

□ India has **given the highest priority to employment and education** through its India Vision 2020, in its efforts toward national development.

□ China is stepping up its reform and opening measures, seeking balanced development among regions, and building a more advanced industrial structure with the aim of becoming the world's 3<sup>rd</sup> largest economy in 2020.

#### □ Small yet strong nations

◊ Countries such as Finland, Taiwan, and Singapore are **focusing on strengthening their competitive positions in areas where they have a comparative advantage** through a "select and focus" strategy.

□ Finland is carrying out a 13-point strategy including **the improvement of labor productivity through education and vocational training**.

- Taiwan is focusing on **the development of human resources for the e-Generation** among 10 areas of its national development strategy.
- Singapore is seeking **economic growth through the innovation of human resources** as a key future strategy.

## Overall Analysis and Implications

### □ Explore strategies for national development to sustain growth

- ◇ Korea needs to develop a strategy for national development that combines **the increase in human capital** based on **people and knowledge**, geared toward the knowledge revolution of the 21st century with **technology innovation**.
  - In Europe, a one-year increase in the average years of education contributes a 0.3-0.5 percent point gain to the GDP and a 1 percent increase in R&D investment translates into a 0.25 percent growth of the GDP (European Commission, 2004).
- ◇ For the years to come, growth engine industries should be fostered intensively, such as those that draw on **creative knowledge, and the development of source technologies** to produce world-class products **and a core pool of high-quality human resources** need to be developed to lead these industries.
- ◇ The exchange of advanced knowledge must be facilitated by creating a wide network of talents.

### □ Innovate the system to develop a well-qualified service workforce

- ◇ A professional service workforce needs to be fostered to enhance labor productivity and create high added-value in the service industry that employs over 70 percent of the economically active population.

□ When the labor productivity of the service industry in Korea is 100, **that of the United States is 217 and Japan 193** (2000).

□ The low-productivity, wholesale/retail and food and lodging business accounts for 47.1 percent of the service industry (based on employment, 2001).

◊ **The system of cultivating, allocating, and leveraging highly-educated professionals** (e.g. legal, medical, business, logistical, R&D professionals) requires improvement at the national level (by helping professional graduate schools take root).

□ **Reform university education, which is failing to meet societal demands**

◊ College and university enrollment quotas had been decided by the government based on the estimated supply and demand of manpower until the 1970s, but to address the below-the-standards **quality** of the workforce generated from colleges and universities requires a comprehensive solution affecting the overall **post-secondary education situation**, including the restructuring of colleges and universities.

□ Manpower requirement (demand from business, primarily appropriate for well-educated personnel) approach (1970s) □ Social demand (demand of students) approach (college enrollment has been controlled independently by the schools since the 1980s) : approach of major industrialized countries

◊ The development of industrial technicians must be left **to market demand**, university education must be aligned **with the requirements of the industry**, and a certification of university evaluation should be introduced.

□ A policy should be pursued to indirectly control the maximum enrollment of universities by making information on labor market demands and post-secondary education publicly available.

- ◊ Efforts should be made to reinforce a stronger, more "customized" system to develop and nurture the human resources needed to fulfill social demand, including a revamping of school curricula.

#### □ Restructure the school system to add diversity and flexibility

- ◊ The government should increase support for early childhood learning and lifelong education of adults on the basis of the results from cognitive neuroscience studies.
- ◊ The school system needs **more international compatibility** in response to **a decline in the school-age population** as a result of **low birth rates and population aging** as well as **an accelerated international movement of people**.
  - Koreans enter the labor market at a later age than their counterparts abroad because of the extended period of education and mandatory military service.
    - Employment accession age (men) : OECD average 22, Korea 27.2
- ◊ The school system should also be made more **open and diverse** with **closer connections to the workplace** (school to work, work to school) as demanded by the policy environment.

#### □ Continue to support skill development to boost labor productivity and address income inequality

- ◊ A range of measures are necessary to increase productivity such as supporting the **vocational competency development** of the core working-age population (ages 30–49) whose share of the total population is expected to fall.
- ◊ We also need to provide support for the continuous learning of middle-aged and older people through the development of adult

programs involving higher education institutions and assistance for startup companies.

- ◊ Social integration should be promoted with greater accessibility for the disadvantaged to educational welfare by, among others, supporting education and training programs for low-income families.

#### □ Create more jobs and tap into the female workforce

- ◊ Fostering the growth of social services, which has great potential for job creation, is another area of strategic importance.

- Social services has high relevance to welfare yet a lower industry share in Korea.

- Proportion of social services : Korea 12.6 percent, United States 27.7 percent, United Kingdom 26.9 percent (2003)

- ◊ Employment promotion measures are required for a drastic increase in the female workforce.

- In industrialized countries, the employment of women rose sharply (9 percent on average) while they were in transition from GDPs of \$10,000 to \$20,000.

- Korea : The labor force participation of women grew by 1.1 percent in the past decade.

- Norway : 56.7 percent □ 70.7 percent, Sweden : 69.1 percent □ 80.1 percent, United States : 53.7 percent □ 63 percent

#### □ Address an imbalance between the supply and demand of manpower

- ◊ The employment of higher education recipients has risen steadily enough to absorb the rapid growth of higher education, but there still exist **labor shortages in some industries** and an overall **mismatch in the quality of skills provided and required.**



□ Retraining costs for new university-graduate recruits: 62.18 million won, 20.3 months on average (Korea Employers Federation 2005)

□ Labor shortages in small and medium manufacturing businesses (2004) : 113,000 (5.1 percent); foreign workers : 355,000 (Jun. 2005)

◊ An **oversupply** is expected for **junior college and university graduates** in science and technology while a **shortage** is likely for **doctorate holders** in some high-tech areas.

□ A surplus of workers in science and technology (2005–2015) : university graduates 112,000, junior college graduates 176,000 (KISTEP 2005)

- The government should do more to encourage young people to go into those fields of study that combine science and engineering with humanities and social studies so as to nurture architect-level (combining professional skills, planning capabilities, and marketing expertise) individuals.

□ Number of four-year university graduates from science and engineering courses for every 100,000 people: 2,000 (second among OECD countries after Finland (2,172)) (OECD Education Indicators 2005)

# IV

## National Human Resource Development: Vision and Policy Direction

### 1. Policy Vision, Objectives, and Strategies

#### **Building a learning society and human resources powerhouse**

– Global top 10 in human resources competitiveness –

People and knowledge-driven growth

Society of trust

#### **Innovation of National HRD System**

- Facilitate the involvement of the demand side such as industry and labor as well as local governments
- Increase HRD investments and efficiency
- Build up capabilities to evaluate and coordinate HRD programs

Development of globally-competitive core talent

- Cultivate core workforce in promising industries
- Foster professionals in knowledge-based services
- Enhance the suitability of university education for industry fields

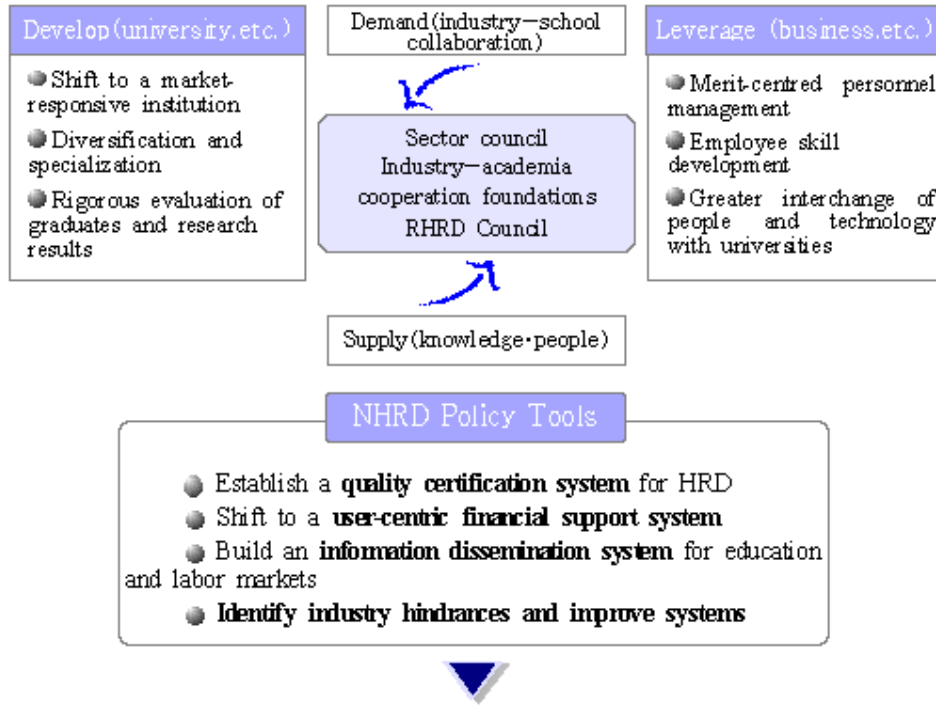
Empowerment of all citizens for life-long learning

- Reorganize the education system for optimal HRD
- Develop basic, core competencies of citizens
- Innovate the system for lifelong vocational education and training

Facilitation of social integration and educational and cultural welfare

- Focus on the development of women, youth, and the older population
- Build a network for social trust and cooperation
- Advance educational and cultural welfare

## 2. Policy Direction: Role of Actors and Performance Indicators



Key Performance Indicators	2000	2005	2010
<b>Development of core talents to lead national growth</b>			
- Number of universities within the global top 200	-	3	10
- SCI ranking of scientific papers	16th	13th	10th
- Number of world-class professional business schools	-	-	10
- Consistency of university education with socioeconomic demand	43rd/47	52nd/60	Top 20
- Number of children in gifted education programs	-	0.9 percent	1 percent
- Number of foreign students studying in Korea (hundred persons)	116	225	500
<b>Cultivation of basic public competencies and lifelong learning abilities</b>			
- Human capital (average years of education)	10.6	11.9	13.5
- Number of students per class in primary	35.8	32.9	30

education			
- Programme for International Student Assessment (PISA)	second in math	3rd in math	Winner in math
- Participation in lifelong learning	17.2 percent	21.6 percent	30 percent
- Lifelong Learning City	3	33	100
- Best HRD Accreditation awarded (enterprises, public organizations)	-	10	500
- Education and training expense as a percentage of the labor costs of private companies	1.4 percent	1.5 percent	2 percent
<b>Greater exploitation of human resources and improved educational and cultural welfare</b>			
- Women's labor force participation rate (aged 15 or over)	48.8 percent	50.1 percent	55 percent
- Education and childcare support for 5-year-old children (percent)	4.5 percent	28.7 percent	80 percent
- Percentage of employees with disabilities	1.01 percent	1.18 percent	2 percent
- Designated localities to give precedence to education and welfare investment over others	-	15	100
- Introduction of after-school classes	-	48 schools	Across the board

## Policy Tasks of the Second Basic Plan

### □ Policy Areas and Tasks

Policy Area	Policy Task
<p style="text-align: center;">□.</p> <p style="text-align: center;"><b>Development of a globally competitive core workforce</b></p>	<ol style="list-style-type: none"> <li>1. Develop core talents to lead future industries</li> <li>2. Foster professionals specialized in knowledge services</li> <li>3. More closely align university education with industry</li> <li>4. Develop and exploit human resources on a global scale</li> <li>5. Further "Excellence in Education"</li> </ol>
<p style="text-align: center;">□.</p> <p style="text-align: center;"><b>Empowerment of all citizens for lifelong learning</b></p>	<ol style="list-style-type: none"> <li>1. Realign the education system for the optimal development of human resources</li> <li>2. Develop basic core competencies in citizens</li> <li>3. Reform vocational education and training and lifelong learning systems</li> <li>4. Promote the regional development of human resources</li> <li>5. Advance HRD in public and military services areas</li> </ol>
<p style="text-align: center;">□.</p>	<ol style="list-style-type: none"> <li>1. Boost the development of female</li> </ol>

**Facilitation of social integration  
and educational and cultural  
welfare**

- human resources
2. Facilitate the development of the youth, middle-aged, and elderly populations
  3. Innovate employment assistance services and employment practices
  4. Build a social network for trust and cooperation
  5. Promote educational and cultural welfare for improved social equity

□.  
**Expansion of a human resource  
development  
infrastructure**

1. Implement a forecast mechanism for labor demand and supply
2. Create and provide information on human resources and technology innovation
3. Establish a safeguard mechanism for knowledge and rights
4. Construct an evaluation and certification system for human resources
5. Lay the foundation for the oversight and coordination of human resource development policies

**Area I** Development of a globally competitive core workforce

**Key Task □ - 1** Develop core talents to lead future industries

- Work with all government ministries and offices to train and develop a new breed of 10,000 core individuals, interlinking initiatives in the areas of national strategic importance,

including the next-generation growth engine industries and six high-technology areas ("6T") (2006–2010)

- ◊ Foster the development of **core talents** versed in both theory and practice by engaging them in research projects for **product and technology development** in the 10 industries designated as the next-generation growth engines.
- ◊ Establish a **multi-disciplinary system to cultivate** well-educated, multi-technology manpower.
- ◊ Bridge and coordinate ministry projects aimed at cultivating qualified workers in future growth engine industries so as to **enhance the effectiveness of financial investments and create synergy**.
- ◊ Cultivate high-quality professionals with expertise in new technology development in **the 6T areas** such as NT and BT.

□ Identify focus areas for R&D and cultivate researchers in source technology development

- ◊ Use **the second phase of the BK21 project (Post-BK21: 2006–2012)** to support **areas that will potentially drive national development** in the coming decade or two under the **select and focus** strategy.
- ◊ Develop **research-oriented regional universities** to support R&D efforts in the **regional fields of specialty**.

□ Advance and reinforce basic disciplines and research, the building block of knowledge creation

- ◊ Develop and support research assistance programs, designed for the **advancement of basic disciplines**, that will help cultivate researchers, facilitate research activities, and reflect the life cycle of researchers.

- ◇ Support research efforts in areas of basic science and technology convergence by **placing greater emphasis on goal-oriented basic research** through, for example, the development of the Centers of Excellence (SRC, ERC, MRC, and NCRC).
- Launch a mechanism that connects industry, academia, and research institutes to spur the convergence of basic, applied, and product development research activities and to attract high-caliber human resources more actively.
- ◇ Funnel more investments in R&D and human resources to clusters involving industry, university, and research institutes in connection with other related initiatives to develop **specialty areas at universities, relocate government agencies away from the capital area, and cultivate national strategic industries.**
- ◇ Implement a coordination mechanism for the fostering and utilization of science and engineering personnel.
- ◇ Offer a training program (fellowship) for Korean and international IT experts at smaller venture companies.
- ◇ Build support infrastructure with a view to enhancing the research capabilities of universities.
- ◇ Secure high-quality science and engineering personnel by strengthening science education in elementary and middle schools and providing science and engineering students with financial assistance.

**Key Task □ - 2** Foster professionals specialized in knowledge services

- Establish a system to train and develop professionals specialized in high value-added knowledge services areas



- ◊ Establish and increase support for professional graduate schools meeting international standards in medicine, dentistry, law, business, finance, logistics, culture, education, design, and commerce.
- **Diversify and specialize education and training programs associated with knowledge services**
  - ◊ Design and apply from early on programs to hone basic vocational skills satisfying the requirements of each area of knowledge-based services.
  - ◊ Develop education and training programs specifically for workers currently in trade or art and culture and provide professionals with more retraining opportunities.
- **Bolster the development of specialists in high-value knowledge-based services with the appropriate support infrastructure**
  - ◊ Increase support for professional graduate schools to foster the development of specialists in the service industry.
  - ◊ **Set up an inter-ministry network** specifically for the cultivation of knowledge services specialists.
  - ◊ Develop specialized service personnel in each area of knowledge services according to the demand of the industry field.
  - ◊ Offer a better qualifications system for service specialists and introduce accreditation for knowledge services education and training programs.

Key Task

□ - 3

Align university education with the industry more closely

- Encourage universities to develop distinctive strengths or specialties that more closely align them with socioeconomic needs
  - ◇ Adjust the enrollment quota of universities based on the reduction of the school-age population, vacancy rates at regional universities, and imbalances in manpower supply and demand **while continuing to allow schools flexibility in determining their maximum enrollment.**
  - ◇ Seek university restructuring to develop them into **specialized schools** for those areas in which they excel.
  - ◇ Devise and implement a government-wide mechanism for cooperation and performance management to spur the specialization of universities.
  
- Facilitate business-university cooperation to enable university education to be more responsive to the needs of the industry
  - ◇ Align university education and industry-university collaboration mechanisms with the role of industrial complexes as centers of R&D and human resource development.
  - ◇ Foster the development of the well-trained workforce demanded by regional industries by bolstering university-business networks and re-adapting the university system toward better industry-academia collaboration
  - ◇ Improve the quality of science and engineering education at universities.
  
- Use industry-academia cooperation foundations as the fulcrum of increasing cooperation between business and university

- ◊ Create a cooperation network of industry, university, research institute, and government centered on industry-academia cooperation foundations established at hub universities designated in each region.
- ◊ Nurture and provide support for university enterprises as a means to facilitate the commercialization of university-developed technology.
- ◊ Make institutional improvements to permit industry-academia cooperation foundations organized at universities to run a business under commercial law (e.g. technology holdings companies, university enterprises).

□ Create infrastructure to support industry-university collaboration

- ◊ Have industry experience more widely recognized and accepted by universities in the process of hiring new faculty members and promote people exchange.
- ◊ Put in place a mechanism in which government and business associations can **work together** to **bolster business-university cooperation**.
- ◊ Lay the legal and institutional groundwork for greater corporate investment in universities.

Key Task

□ - 4

Develop and exploit human resources on a global scale

- Raise the level of foreign language proficiency of the citizens to the level required by the trend of internationalization and openness
- ◊ Ensure that the focus of English education in elementary and middle schools is on the **ability to communicate**.

- ◊ Seek to expand English services within special economic zones and international free cities.
- ◊ Create **an English proficiency testing program** tailored to Koreans and phase in **quality control measures for testing tools**.
- ◊ Expand the reach and scope of language training in university and adult education.

□ **Strategically attract and exploit international human resources**

- ◊ Actively implement the Study Korea initiative designed to attract foreign students to further draw and utilize well-educated international human resources.
- ◊ Provide foreign workers with training assistance and recruit core foreign IT workers in order to **leverage skilled and qualified international personnel more actively**.
- ◊ Improve access to Korean language training programs for foreign nationals residing in Korea and improve their learning conditions.

□ **Sharpen the nation's competitive edge in education through a global approach to education**

- ◊ Achieve global compatibility of Korea's education and training programs, as well as the **degrees and qualifications** offered in Korea.
- ◊ **Facilitate** the entrance of Korean education into **foreign markets** and "internationalize" higher education and research.
- ◊ Ease restrictions on the **faculty** of national universities holding other positions to prevent a brain drain.
- ◊ Bring in a greater number of high-quality foreign education programs and institutions.

- Build a system for the international utilization of human resources
  - ◇ Create an infrastructure to provide Koreans residing overseas with education assistance and tap into international human resources.
  - ◇ **Train and develop "global specialists"** who are well-versed in the language and culture of other parts of the world and provide assistance for globally competitive Korean workers seeking **international employment opportunities**.
  - ◇ Train and develop specialists who will aid Korean companies entering foreign markets.

Key Task □ - 5 Further the Excellence in Education Initiative

- Place greater emphasis on student-centric, "level-differentiated" school programs
  - ◇ Have more schools offer a choice of classes according to the level of achievement and aptitude of each student.
  - ◇ Motivate high-performing students by introducing the Advanced Placement program that allows capable students to earn university credits (2007).
- Improve and expand the early advancement and graduation program
  - ◇ Develop an operational manual for the application of early promotion and graduation programs and offer them at all schools.
  - ◇ Work with gifted education institutions to adopt more diverse evaluation techniques for early advancement and graduation.

- Improve quantitative and qualitative levels of gifted education
  - ◇ **Bring the performance of the top 5 percent of students to the world's highest level** (e.g. PISA) with a focus on creative problem-solving, leadership, and morals.
  - ◇ Also **include** a wider range of **subjects** such as information, art, and language in gifted education in addition to mathematics and science while expanding the **reach** of the program to include **1 percent of all students** (80,000 students).
  - ◇ Build the infrastructure necessary for the discovery and cultivation of high-achieving students with creativity and great potential in a range of areas.
  
- Find and develop creative children gifted in science to build a platform to become a leading nation in science technology
  - ◇ Systematically discover and nurture young students gifted in science so as to produce world-class scientists and develop young, ingenious talents intensively.

Area II Empowerment of all individuals for lifelong learning

Key Task

□ - 1

Realign the education system for the optimal development of human resources

- Innovate the educational system at the primary and secondary education stages
  - ◇ Facilitate the learning of young children and adults with more assistance in order to respond to low birth rates and an aging population while **working to reorganize the overall school system**

**to better cope with the rapid movement of people across national borders.**

- ◊ Develop and implement ways to balance **basic education and occupational education** at the secondary level and link this to higher education institutions.
- ◊ Build hubs of educational, cultural, welfare innovation in connection with the **Innovation City** (relocation of government agencies) **and Enterprise City** initiatives.
- Specialize higher education institutions and enhance adult access to higher education
  - ◊ Encourage **the division of functions and specialization among universities, junior colleges, and industrial colleges and expand the professional graduate school system** as a means to produce a world-class, high-quality, professional workforce.
  - ◊ Offer a **track that links high schools to industry fields and to colleges/universities.**
- Add substance to the support system for lifelong learning to make it accessible to all citizens throughout their lifetime
  - ◊ Design a flexible educational system that enables education and labor markets to interact more closely (a school-to-work and work-to-school system).
  - ◊ Streamline the lifelong education system and improve its effectiveness.
  - ◊ Operate a national support system for career education to help citizens design and plan their lives.

- Change how the national curriculum is revised
  - ◇ Introduce a new system allowing the national curriculum to be revised whenever necessary and back the new system with the formation of a standing curriculum council and the opening of a portal site on curricula and school textbooks.
  - ◇ Improve the textbook system in line with the new system of national curriculum revision.
  
- Ensure the basic scholastic attainment of students and emphasize the aspect of education that fosters the development of a wholesome world view
  - ◇ **Set the minimum level of basic scholastic abilities required of all students** and implement **a program that ensures that every student meets the requirement.**
  - ◇ Boost confidence in school education and lessen the burden of private education costs.
  - ◇ Place more emphasis on forming a wholesome world view as a civilized citizen.
  
- Enhance the system of teacher development and training
  - ◇ Revamp **the mechanism of teacher education and screening.**
  - ◇ Revamp the teacher training system to improve the quality of teachers.
  
- Increase flexibility at the primary and secondary school levels and enhance local autonomy in education
  - ◇ Increase the autonomy and flexibility of schools through a range of actions including a wider adoption of autonomous schools.



- ◊ Increase the government education budget and build and improve education and student welfare facilities through build-transfer-lease contracts as a means of offering better conditions for primary and secondary education.
- ◊ Devise measures to ensure that **educational and administrative autonomy have close connections at the local level** with a view to fostering overall autonomy in education, and ensure that schools make the best use of educational resources available at local communities and are given full administrative support.

#### Key Task

□ - 3

Reform vocational education and training and lifelong learning systems

- Streamline the vocational education system to facilitate the transition from school to work
  - ◊ Provide stronger career guidance and employment assistance services from primary school through to higher education institutions.
  - ◊ Increase the number of "specialized schools" and "integrated schools" which are very sensitive to the demand of the industry and the region as a means of innovating vocational education at the high school stage.
  - ◊ Improve the welfare of trainees attending vocational training institutions.
  - ◊ Expand the role and function of junior colleges, polytechnic colleges, technical colleges, and universities as education and training centers of their respective communities using vocational competency development projects

□ Support vocational high schools and junior colleges to offer more practical and useful courses and develop specialty areas

- ◇ Design and implement programs to promote business-university cooperation at vocational high schools.
- ◇ Improve the quality of junior college education by encouraging them to develop unique areas of specialty.
- ◇ Provide junior colleges with assistance so as to ensure they offer useful and practical vocational education for students.
- ◇ Devise ways of developing junior colleges into centers of vocational education.

□ Step up the support for the continuous development of vocational skills

- ◇ Increase the effectiveness of the delivery system of vocational competency development for workers.
- ◇ Further develop vocational training programs tailored to the needs of different groups such as the unemployed, the middle-aged and elderly, and the socially vulnerable.
- ◇ Achieve innovation in education and training assistance systems to encourage workers to act on voluntarily developing their own vocational skills.

□ Promote continuous adult education by providing the basis for the transition to a lifelong learning society

- ◇ Introduce adult education courses at universities and operate mobile classrooms for workers, incorporating higher education institutions into the adult learning process.

- ◊ Increase support to induce adults to invest more in skills development.
- ◊ Improve the ability of the less educated to take advantage of lifelong learning opportunities with basic education for illiterate adults.

□ Use e-learning to build a platform for lifelong learning

- ◊ Aid in strengthening human resource development and innovation capabilities at the regional level by creating "industry-academia-research clusters for e-learning" through e-learning assistance centers organized within universities in each of the regions.
- ◊ Integrate e-learning into existing government initiatives such as the building of Lifelong Learning Cities to facilitate regional innovation.
- ◊ Utilize e-learning as a means of bridging educational gaps for the disadvantaged.
- ◊ Spread and promote the use of e-learning at public agencies and local industries.

Key Task

□ - 4

Promote the regional development of human resources

□ Establish the necessary systems for the facilitation of regional human resource development

- ◊ Make regional human resource development councils a statutory organization and consider their formation and operation nationwide.
- ◊ Create a collaboration mechanism between the central and local governments and support local governments to work closely together to spur the regional development of human resources.
- ◊ Improve the lifelong education promotion systems of local governments.

- Strengthen the examination, analysis, and evaluation of regional human resource development and policy
  - ◇ Draw up a mid/long-term strategic plan for regional human resource development.
  - ◇ Develop and evaluate the Regional Human Resource Development Index for the examination and analysis of regional human resource policies and publish the results thereof.
  - ◇ Implement initiatives designed for human resource development and job creation at the regional level, on the basis of the survey and research on employment and human resource development for that region.
  
- Pave the way for the execution of regional policies
  - ◇ Cultivate the regional industrial workforce and underpin regional innovation with the educational reform of local universities.
  - ◇ Foster specialists who will play a leading role in development programs directed at rural areas such as the rural tourism promotion program, in order to build the capabilities of rural communities (2,500 specialists, Ministry of Agriculture and Forestry).
  - ◇ Set the basis for moving toward a lifelong learning society by setting up learning communities led by lower-level local governments and organizing a lifelong learning festival.

**Key Task**

□ - 5

Advance the development of human resources in public and military service areas

- Create an environment and build an infrastructure that enables uninterrupted learning during military service

- ◊ Create a military culture where servicemen and women are encouraged to learn for self-development.
  - ◊ Provide servicemen and women with opportunities to **earn academic credits** and to catch up with their studies during their service.
  - ◊ Allow credits from military training programs to be recognized by academic institutions.
  - ◊ Create military-university e-clusters through a collaboration system between the military and e-Learning assistance centers at each of the ten regions.
  - ◊ Set up a "Cyber Knowledge Information Center" within the barracks and open e-Learning portal services.
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- Offer military servicemen more opportunities to obtain qualifications and certificates and improve the management of human resources
    - ◊ Provide more opportunities to obtain certificates and qualifications during military service by, for example, creating new qualifications in a specialized field of the military.
    - ◊ Improve the system used for the efficient management of personnel.
    - ◊ Provide more job placement assistance for discharged servicemen and women who served in the military for a medium to long period of time.
- 
- Recruit capable personnel through the easing of entry barriers to public offices and an advanced recruiting process
    - ◊ Employ a flexible and diversified recruiting process based on the principle of competition and openness.

- ◊ Adopt a more advanced screening process including the wider application of the Public Service Aptitude Test and a greater emphasis on interviews, enabling qualified personnel to take public office.
- ◊ Increase the representation of social minorities in public offices including women, the disabled, and science and engineering personnel.

□ Innovate the system to build human capital in the public services sector

- ◊ Enhance career management through the adoption of career development programs.
- ◊ Stress a performance-oriented approach to education and training and focus on problem-solving capabilities pertaining to policy issues.
- ◊ Promote learning activities and culture and make them more pervasive in the public services sector.
- ◊ Revamp education and training provided for public servants serving in local governments.

Area III Facilitation of social integration and educational and cultural welfare

Key Task □ - 1 Boost the development of female human resources

- Improve career guidance services for female students, facilitate the employment of highly-educated young women, and strengthen competency development for women employees
- ◊ Improve career guidance and vocational training for female students.

- ◊ Establish and operate Woman Student Career Development Centers to better align universities with the labor market.
- ◊ Facilitate the Community-customized Employment Assistance Program to promote the employment of qualified female college/university graduates.
- ◊ Develop the expertise of female workers including those currently employed.

□ Enable more women to enter highly specialized professions

- ◊ Promote the entrance of women into professions such as science and technology and academia that require a high level of expertise.
- ◊ Maintain the policy of "employment target for gender equality" in the public sector and increase the proportion of women managers at the Grade 5 or higher level of the civil service to improve female representation in the public sector.

□ Make full use of women personnel currently out of the workforce

- ◊ Lay the legal foundation to assist women whose careers have been interrupted or discontinued, with the development of vocational skills and re-employment.
- ◊ Expand and strengthen specialized vocational training to prepare women as caregivers, inclusion teachers, eco-culture guides, after-school teachers, and other specialized workers in the social services sector that will likely be in higher demand in the years to come.
- ◊ Aid highly-educated women whose careers have been interrupted with the development of vocational skills.

- ◊ Develop and implement vocational training programs in areas with a strong possibility of employment with small- and medium-sized companies.
  - ◊ Prepare career achievement programs and an employment assistance infrastructure tailored to different groups of women such as housewives, breadwinners, and the elderly.
  - ◊ Operate public academies in each area of art and culture intended to nurture female professionals in the culture industry and continue to expand programs to support specialized courses.
  - ◊ Increase assistance for start-up companies including one-stop services designed to help female entrepreneurs.
- **Build an infrastructure for the development of women to raise the female labor force participation rate**
- ◊ Expand and strengthen child care infrastructure to help women strike a better balance between their personal and professional lives.
  - ◊ Consider the adoption of basic subsidies for infants in parallel with the policy on tuitions and child care expenses and funding plans.
  - ◊ Create a system that connects education with employment and build a regional innovation network for the development of the female workforce.

<b>Key Task</b> □ - 2	Facilitate the development of the youth and middle-aged and elderly populations
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- **Increase youth employment and support job creation efforts**
- ◊ Build an infrastructure that channels young people into small and medium-sized companies and offer on-the-job training programs to address the high youth unemployment situation.



- ◊ Strengthen employment assistance offered by universities for their students through programs jointly run by universities and the Work-Net.
  - ◊ Nurture professionals on teaching entrepreneurship to significantly improve the quality of start-up education.
  - ◊ Consider the introduction of youth voucher programs intended to facilitate their economic participation, develop their vocational skills, and help them to serve as part of a social safety net for young people.
  - ◊ Support nurturing creative leaders in rural communities among designated "agricultural successors."
  - ◊ Train and develop caregivers and social workers dedicated to the disabled to ensure a potential supply of social service workers in the health and welfare sector.
- **Expand the employment of senior and middle-aged individuals and improve their employability**
- ◊ Ease the impact of corporate restructuring practices that are largely age-based by introducing a wage-peak program.
  - ◊ Empower senior citizens to support themselves by providing them with jobs commensurate with their capabilities and aptitude in preparation for an aged society (Ministry of Health and Welfare).
  - ◊ Leverage more efficiently highly-skilled and experienced technician retirees including those with experience at large enterprises.
  - ◊ Use middle-aged and elderly women (ages 50 and over) as paid volunteer workers at kindergartens (805 persons per year).

- Strengthen the vocational competency of the low-income class and increase their employment and improve the rehabilitation ability of the disabled
- ◇ Expand programs that help low-income families overcome poverty on their own and introduce a wage plan that gives them incentives to work.
- ◇ Provide a wider range of employment services such as counseling for enterprises seeking to employ people with disabilities and improve the ability of the disabled to achieve vocational rehabilitation.

**Key Task**

□ - 3

Innovate employment assistance services and employment practices

- Build an employment-supporting infrastructure intended to ensure access for the youth and unemployed to systematic vocational guidance and provide them with comprehensive employment assistance services
- ◇ Produce and offer employment services through partnerships.
- ◇ Build an integrated labor market information system and provide consumer-oriented information on line.
- ◇ Provide one-stop services for those looking for re-employment opportunities with services tailored to the needs of each type of job seeker.
- ◇ Benefit more students and youths with vocational guidance and employment assistance.
- Innovate employment practices and eliminate discrimination

- ◊ Improve the efficiency of exploiting human resources by reducing discrimination based on gender and age and enhancing job security.
- ◊ Create more employment opportunities for the disabled based on the development of their potential and expand the application of the legal requirements for enterprises to fill a proportion of their workforce with the disabled.

#### Key Task □ - 4 Build a social network of trust and cooperation

- Build a voluntary service infrastructure to utilize human resources in diverse fields
  - ◊ Support the promotion of voluntary services to maximize the value of social capital.
  - ◊ Pursue the introduction of social incentives for voluntary services to promote voluntarism in many areas of society.
- Build a cooperation network through a range of programs in education, culture, welfare, and environment and the promotion of voluntary services
  - ◊ Actively seek the participation of voluntary counselors and venerable local figures in school programs to build character and creativity.
  - ◊ Develop initiatives designed to facilitate participation and human rights with the aim of providing youth with more opportunities for social participation and raising the level of individual competencies.
  - ◊ Tap into the workforce of retired teachers to strengthen education opportunities for parents.

- ◊ Set the basis required for the socially vulnerable to be provided with more opportunities to benefit from art and culture and physical education.
  - ◊ Foster and support voluntary workers in the social welfare sector through a voluntary service certification system.
  - ◊ Encourage voluntary participation in environmental preservation through a greater focus on social and environmental education by, for example, operating more programs fostering experiential education.
- Provide education programs for international understanding and support for the competency development of young people
- ◊ Ensure that students understand and are able to adapt to changes in the global community and diversity in culture and solidify the global leadership of Korea in education for international understanding.
  - ◊ Implement and support various youth support programs intended to strengthen youth competency and foster a wholesome youth culture.
- Launch the Human Resource Development Forum
- ◊ Launch the Global Human Resource Development Forum in 2006 as a channel of exchanges and cooperation regarding R&D and information on human resource policies.
  - ◊ Understand global trends in human resource development and promote our policy internationally.

Key Task □ - 5	Promote educational and cultural welfare for improved social equity
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- Increase the scope of student loan programs for university students
  - ◇ Ensure that more students benefit from the government-guaranteed long-term **student loan program**.
  
- Improve equity by narrowing the educational gap within and among regions
  - ◇ Strengthen connections among education, culture and welfare by increasing support for low-income, urban areas selected as priority areas for investments in educational welfare.
  - ◇ Establish an integrated educational safety net through regional networks for educational welfare assistance.
  - ◇ Improve the school education environment and scholastic abilities of students in farming and fishing communities.
  - ◇ Develop and increase several models of "after-school class" operations specifically designed for different levels of schools, larger and smaller cities, and farming and fishing communities.
  
- Increase educational support for under-achieving or ill-adapted students and educationally-marginalized groups
  - ◇ Place greater emphasis on instructional support for under-performers, found alternative schools for drop-outs, and put in place related programs.
  - ◇ Focus on helping the educationally-marginalized including the disabled and children of foreign workers and North Korean defectors with a broad range of educational assistance.
  - ◇ Ensure that the children of low-income families are provided with adequate support in education.

- Develop plans for human resource development that responds to low birth rates
  - ◇ Devise student accommodation plans and facility management plans, taking into account the shrinking school-aged population stemming from lower birth rates.
  - ◇ Prepare **mid- and long-term plans for teacher supply** in line with **student accommodation plans**.
  - ◇ Make pre-school education programs and **daylong classes at kindergartens** more widely available.
  - ◇ Shift the focus of funding allocation from government-run and public facilities to individual children to improve efficiency in financial assistance provided for early childhood education and child care facilities.

Area IV Expansion of infrastructure for human resource development

Key Task

□ - 1

Implement a forecast mechanism for labor demand and supply

- Establish a manpower supply and demand forecast system at the national level
  - ◇ Coordinate and manage periodically the forecasts of manpower supply and demand and provide projections on new labor force supplies.
  - ◇ Forecast manpower growth by sector and estimate gross supply and demand, taking into account industries, occupations, and fields of study.

- ◆ Forecast manpower supply and demand by sector considering policy demands in information technology, science and technology, industrial technology, culture and tourism, law, health and welfare, and business and education.

- Enhance the infrastructure for the scientific projection of labor force supply and demand

- ◆ Produce detailed statistics by industry and occupation and expand a demographic survey on the economically-active population in connection with occupational classification (in consultation with the National Statistical Office).

- ◆ Establish a human resource statistics information system that builds and manages a statistics database with a view to improving and reorganizing the classification of industries, occupations, and fields of study and accurately forecasting manpower supply and demand.

Key Task	Create and provide information on human resources and technology innovation
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□ - 2	Create and provide information on human resources and technology innovation
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Create and provide information on human resources and technology innovation
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- Produce and distribute labor market information

- ◆ Aid job seekers and students in choosing and mapping out their careers by distributing occupational information and data to schools of all levels.

- ◆ Prepare diverse occupational information content on the Work-net and KNOW in a way that they meet the varied needs of information users at different levels.

- Increase information on education and labor markets and develop an HRD-Index

- ◊ Improve educational statistics and the survey and management system that keeps track of the career progress of graduates and build an information production and management system for the college information disclosure scheme.
- ◊ Conduct surveys and follow-up surveys on economic activities by graduates of high school or higher education institutions.
- ◊ Provide career information by developing a Human Resource Development Index based on the labor market and education market information and publishing Future Career World.

□ Improve linkages between information pools on human resources

- ◊ Ensure that government ministries and offices systematically produce and manage information on human resources, including profiles of personnel in science and technology and the culture industry, professors and researchers, and those in the regional strategic industries, and that the pools of information are maintained and used in a coordinated and integrated manner.
- ◊ Use a comprehensive human resources information network to share core information.

Key Task □ - 3	Establish a safeguard mechanism for knowledge and rights
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□ Establish a policy framework for knowledge management to produce, utilize, and disseminate knowledge

- ◊ Establish organic connections among policies on the production of knowledge and information as well as the protection of related rights and build a mechanism for coordinating such activities.



- ◊ Produce varied statistics on knowledge and information and develop indices and related classification criteria to establish a broad-based knowledge and information management system.

- ◊ Construct a comprehensive management and distribution system for academic information by shifting the direction of library policies from book distribution toward knowledge possession and management at the national level.

- Seek innovation to safeguard knowledge and preserve value

- ◊ Strengthen the protection of intellectual property rights by constantly regulating cases of intellectual property rights violations and enhancing public awareness of intellectual property rights.

- ◊ Build a database for intellectual property rights (e.g. software) and provide a wide range of services to ensure the integrated management of intellectual property rights and promote the public use of such services.

- Lay the foundation for building a "knowledge warehouse" and a knowledge road map

- ◊ Conduct **a comprehensive survey and analysis of the current state of knowledge possessed** in each academic and technology field of Korea (2010).

- ◊ Perform **a comprehensive analysis of the current state of knowledge possession** and work out **a road map** with the aim of devising a system that connects government investment projects such as the BK21, academic policies, a technology road map, and knowledge management policies (2010).

- Streamline the qualification system and increase the value of qualifications
  - ◇ Improve the national system of qualifications to enhance the field applicability of qualifications and certificates by introducing subject areas and grading schemes that satisfy the requirements of the industry.
  - ◇ Build Q - net as a source of qualifications information and develop ways of linking service with the Integrated Labor Market Information System.
  - ◇ Adopt a systematic approach to dividing roles between national (technical) and private qualifications and improve the credibility of qualifications issued by private organizations.
  - ◇ Ensure the international recognition and validity of domestically-issued certificates by taking the lead in the APEC Engineer Project.
  - ◇ Reduce the mismatch in the supply and demand of manpower by utilizing the Korean Skills Standards in the development of education and training courses and criteria for qualification tests.
  
- Upgrade employee development systems in enterprises
  - ◇ Establish the Best Human Resources Developer accreditation program to promote voluntary investment by businesses and the public sector in human resource development.
  - ◇ Provide consulting services on workforce development for small and medium-sized companies who often lack adequate resources for the effective development of employees.

- ◆ Organize training for CEOs of small and medium-sized businesses and offer training programs where management and labor sit side by side so as to strengthen the core competencies of smaller enterprises.

- Establish an evaluation and accreditation system to ensure quality education

- ◆ Found a Korean Institute for Higher Education Evaluation to innovate the way colleges and universities are evaluated and ensure the expertise of university evaluation.

- ◆ Improve the quality of evaluation of the Offices of Education at the municipal and provincial levels in an effort to innovate their administrative and fiscal systems.

- ◆ Expand and strengthen the evaluation of educational programs by introducing engineering and nursing education accreditation.

<b>Key Task</b>	Lay the foundations for the oversight and coordination of human resource development policies
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□ - 5
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Lay the foundations for the oversight and coordination of human resource development policies
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- Establish a mechanism that brings together the central and local governments as well as business and labor in order to formulate, gather, and coordinate national policies for human resource development

- ◆ Expand and reorganize the Ministerial Committee on Human Resource Development into the National Human Resources Committee and launch a center for human resource innovation to pursue a policy for human resource development encompassing all ministries and government offices.

- ◊ Improve the way regional human resource development councils are operated to allow business and labor representatives and civic organizations to be represented in the council.
- ◊ Identify and coordinate policy agenda through systematic monitoring and promote information exchanges through the Human Resource Policy Cooperation Network and NHRD - Net.
  
- Establish a system for the survey, analysis, and evaluation of and feedback on human resource policies
  - ◊ Build a comprehensive information system on initiatives and programs designed for the development of human resources so that the programs, implemented by different government ministries and offices, can be systematically managed, evaluated, and controlled.
  - ◊ Improve the efficiency of the management and coordination of and investment in initiatives through surveys, analyses, and evaluations.
  - ◊ Seek to include the evaluation of how the initiatives and programs affected men and women differently or equally to promote the gender-equal development of individuals.
  - ◊ Introduce an interim evaluation of the Basic Plans (in the fourth year of implementation) and develop rolling plans.
  
- Enable business, labor, and private actors to engage themselves in the development of people
  - ◊ Support the operation of sector councils and leverage them as a channel of identifying industrial demands.
  - ◊ Facilitate the participation of labor unions and civic organizations in producing and implementing policies.

# VI

## Plan for Financial Investment and Improvement of Legal Support

### Financial Investment Plan (Draft)

This financial investment plan (draft) is a tentative plan based on estimates and the final amount of investment will be adjusted and incorporated into the National Financial Management Plan after discussions among relevant government ministries.

- ◉ **A total of 50,803.4 billion won** will be invested in the expanded implementation of the existing initiatives as well as the introduction of new programs over the five-year period from 2006 to 2010 (an annual growth of 11.9 percent).
- The investment will focus on programs to nurture top-end talent, promote social integration, and improve educational welfare.

(In hundreds of millions of won, percent)

Domain	Total (2006 -2010)	2006	2007	2008	2009	2010	Average Annual Growth
<b>I.Development of talent</b>	95,031.8	15,074.6	16,966.8	20,061.8	20,300.8	22,627.8	10.7
<b>II.Empowerment for life-long learning</b>	114,163	20,850	22,287	23,648	23,537	23,841	3.4
<b>III.Social integration and educational welfare</b>	291,962.9	39,264.5	53,714.6	59,341.6	67,493.6	72,148.6	16.4
<b>IV. Human resource development infrastructure</b>	6,876.4	1,244.4	1,925.5	1,213.5	1,176.5	1,316.5	1.4
<b>Total</b>	<b>508,034.1</b>	<b>76,433.5</b>	<b>94,893.9</b>	<b>104,264.9</b>	<b>112,507.9</b>	<b>119,933.9</b>	<b>11.9</b>

□ The financial investment includes the national expenditure (budget and funds), local expenditure, and private investments.

□ Of the budget of the Ministry of Education and Human Resource Development, grants for local education and general current expenses (e.g. labor and facility costs) are excluded.

◊ The central government, local governments, and the private sector **share the financial costs** associated with the Basic Plan.

- National expenditure 36,444.3 billion won (71.7 percent); local expenditure 13,706.4 billion won (27 percent); and private sector 652.7 billion won (1.3 percent)

(In hundreds of millions of won)

Source	Yearly Investment					Total
	2006	2007	2008	2009	2010	
◊National expenditure <b>(growth)</b>	56,894.5	68,333.6 (20.1 percent)	74,575.6 (9.1 percent)	79,808.6 (7.0 percent)	84,830.6 (6.3 percent)	364,442.9 (10.5 percent)
- National treasury (budget)	35,526	44,237.6	51,240.6	54,909.6	59,168.6	245,082.4

- Funds	21,368.5	24,096	23,335	24,899	25,662	119,360.5
◦Local expenditures	17,562	25,248	28,565	31,678	34,011	137,064
◦Private sector	1,977	1,312.3	1,124.3	1,021.3	1,092.3	6,527.2
<b>Total</b>	76,433.5	94,893.9	104,264.9	112,507.9	119,933.9	508,034.1

## How to Finance the Basic Plans

### [ Higher Education ]

- ◊ Government R&D funding will be provided in a manner that promotes the development of human resources.
- ◊ Tax benefits for private universities will help bring in private funding.
- ◊ Efforts will be made to make institutional changes to allow national universities to use revenues from state-owned properties.
- ◊ Relevant ministries will allocate a greater share of their budgets to the new system of professional graduate schools in finance, logistics, law, medicine, and other specialized fields.

### [ Educational Welfare ]

- ◊ A new source of funding is required to finance increased assistance for early childhood education and child care.
  - Funding will be secured in connection with comprehensive measures to address low birth rates.
- ◊ Build-transfer-lease arrangements will be a major form of funding (a total of 13 trillion won from 2005 to 2009).
- ◊ An extension of the education tax (transportation tax) will be sought.
- ◊ There will be efforts at inducing local governments to bear a greater share of the education expenditure.

## Lifelong Education

- ◊ More financial support will be given to facilitate lifelong learning, including funds provided by local governments to build Lifelong Learning Cities.
- ◊ The Employment Insurance Fund operated by the Ministry of Labor will be funneled to vocational education institutions such as vocational high schools and junior and industrial colleges in addition to vocational training schools, so as to promote vocational training and education at all levels.
- ◊ It should be ensured that the budgets and funds earmarked for lifelong learning programs by all government ministries and offices are spent in an efficient and coordinated manner.
- ◊ Enterprises will be encouraged to invest more in the development of the workforce.

## Improvement of Legal Support

- ◊ 11 enactments and 39 amendments of laws **(a total of 50)**

Domain	Number of Law Enactment and Amendment
□. Development of a globally competitive core workforce	(Enactment : 4 (Professional Law School Act, etc.) (Amendment : 13 (Gifted Education Promotion Act, etc.)
□. Enhancement of lifelong learning abilities of all citizens	(Enactment : 2 (Literacy Basic Education Support Act, etc.) (Amendment : 18 (Three education laws, Military Service Act, etc.)
□. Facilitation of social integration and	(Enactment : 4 (Basic Act on



educational and cultural welfare	Educational Welfare, etc.) r <b>Amendment</b> : 1 (Sexual Equal Employment Act, etc.)
□. Expansion of human resource development infrastructure	r <b>Enactment</b> : 1 (Act on the Evaluation of Higher Education) r <b>Amendment</b> : 7 (Basic Human Resource Development Act, etc.)