

Green Growth Initiatives and Skills Response in Korea

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Book titled,
'Green Growth, Green Jobs and
Green Talent'



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KRIVET in 2009

I. Green Growth Initiative and Green New Deal

Green Growth Initiative

- ▶ August 15, 2008. President Lee proclaimed a “low-carbon, green growth” strategy as a new vision to guide nation’s development.

The *Presidential Committee on Green Growth* launched

-1st National Energy Basic Plan 2008~2030 ; Low Carbon Green Growth Strategies (2008); Climate Change Response Plan (2008); Green Technology R&D Plan (2009); and the New Growth Engine Industries Development Vision and Strategies (2009)

- ▶ 5 Year Green Growth Plan(2009-2013): 83.6 billion dollar, 2% of GDP. 960,000 job creation
- ▶ the *Basic Law for Green Growth* is currently under review by Congress.

***Vision : Achieving world 7th strong Green Nation
by 2010, and world 5th by 2050***

**I.. Measures for climate change and securing
energy independence(44.3)**

- 1.Reduce carbon emissions(4.4)
- 2.Decrease energy dependence on oil and enhance energy self-sufficiency(11.6)
- 3.Support adaptation to climate change impacts(28.3)

II. Creation of new growth engines(22.3)

- 4.Develop green technologies as future growth engines(8.8)
- 5.Greening of industry(3.6)
- 6.Develop cutting-edge industries(8.5)
7. Set up policy infrastructure for green growth(1.4)

**III. Improving quality of life and strengthening the
status of the country(21.7)**

- 8.Green city and green transport(19.7)
- 9.Green revolution in lifestyle(1.5)
10. Enhance national status as a global leader in green growth (0.5)

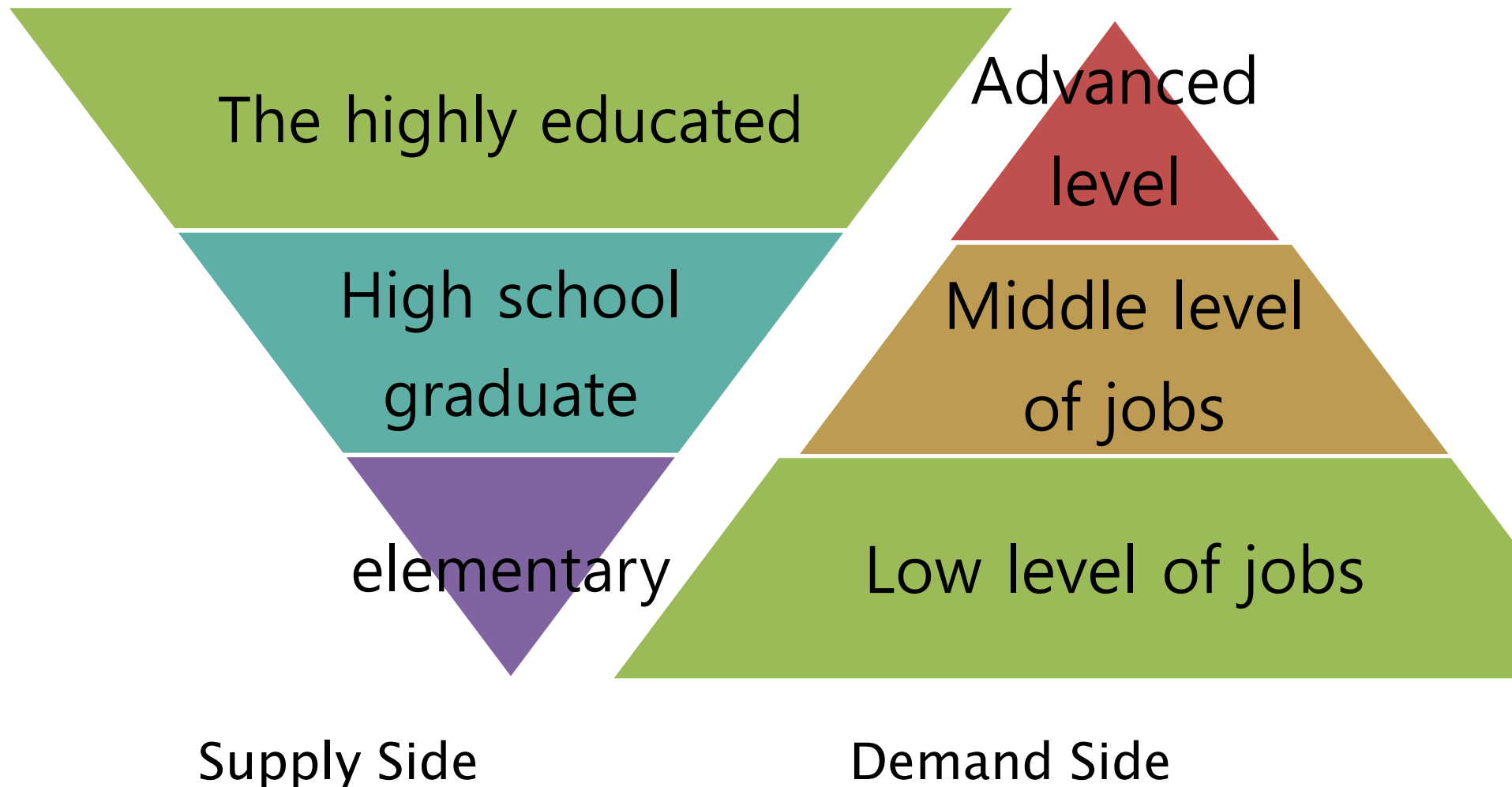
Green New Deal: links green growth initiatives and urgent job creation needs due to global economic crisis.

3 Core Fields and 12 Essential Programs

- **Green SOC** such as "Establishing Green Transportation Network,
 - **Low carbon/High efficiency industrial technology**
Such as Clean Energy, Expansion of Resource Recycling
 - **Eco-friendly/Green** life(such as orest Biomass
- 27 linked programs such as Disaster Hazard Area Maintenance Project or Clean Korea Action Plan
- A majority of the financial spending on the civil engineering and green construction public works
 - 97.6% of the total green jobs through the Green New Deal are mostly manual workers for temporary employment

II. Supply and Demand in Green Industry

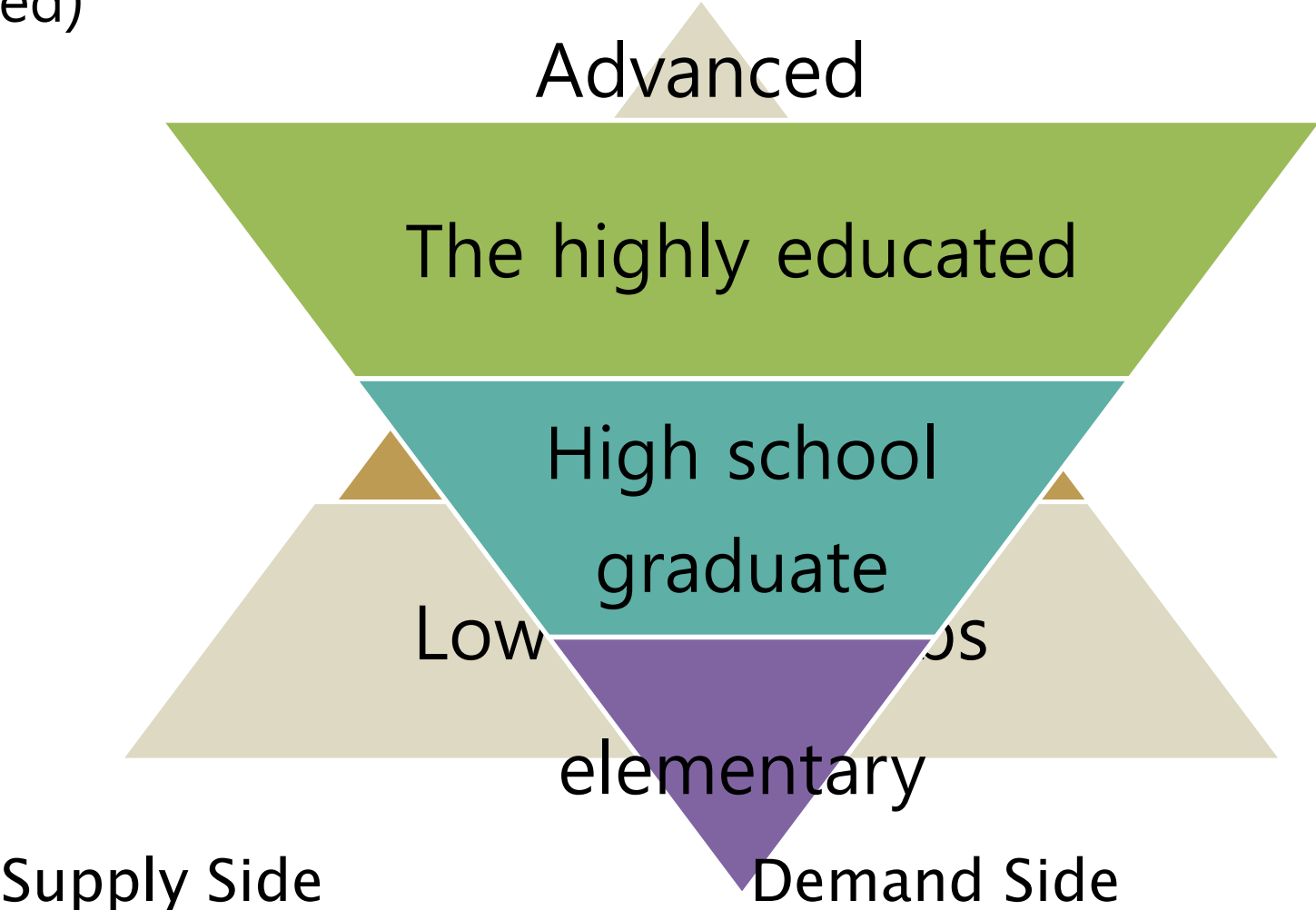
Simplified Picture of Korean Human Resources Supply and Demand among active young working population



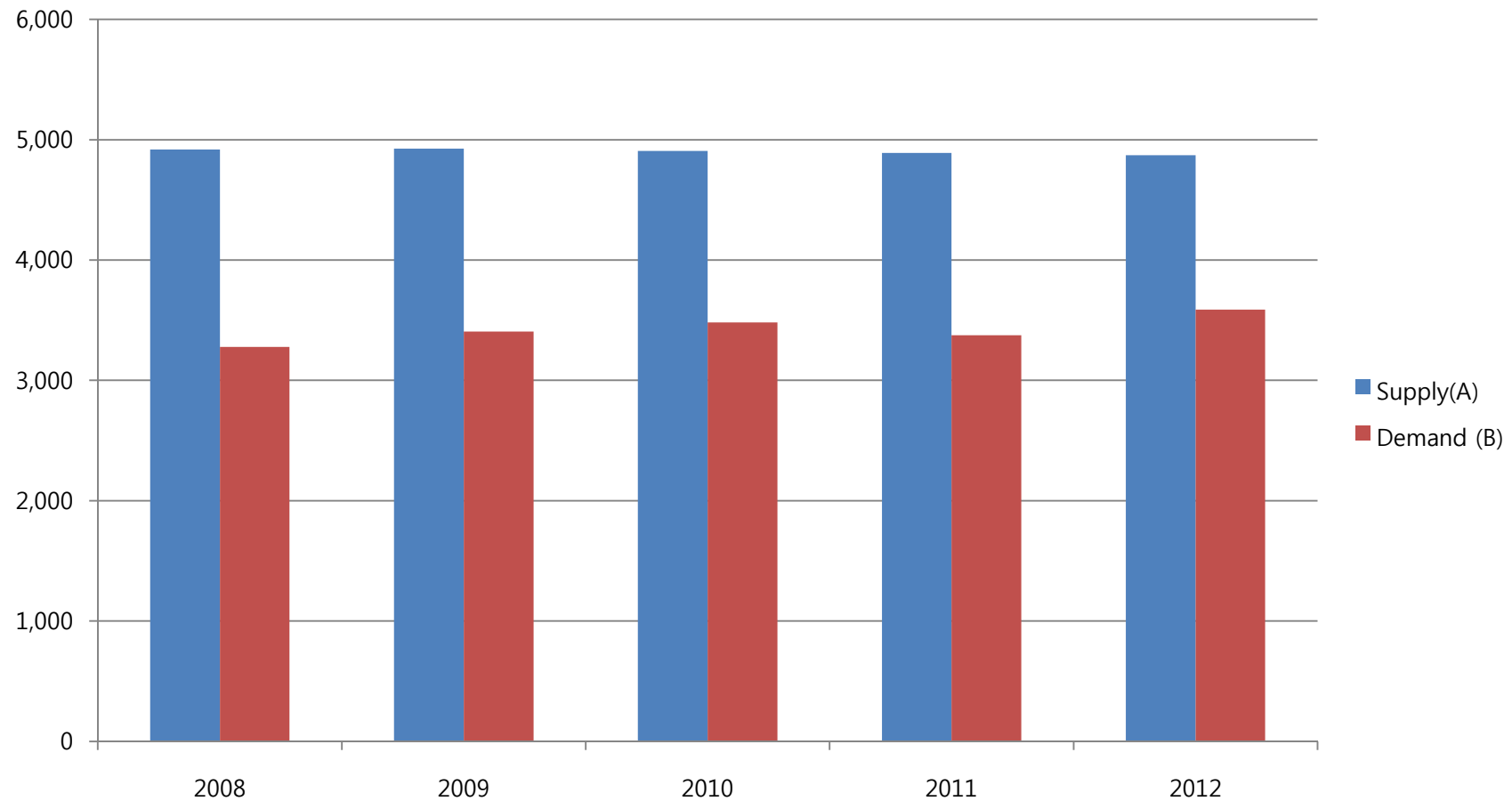
**2.5 million of Highly educated poured into labor market
100,000 decent jobs such as jobs in large size company.

**Employment induction coefficient dropped from 24.4 → 14.7

Simplified Picture of Korean Human Resources Supply and Demand among active young working population (continued)



Supply and Demand Prospects Case of Environment Industry

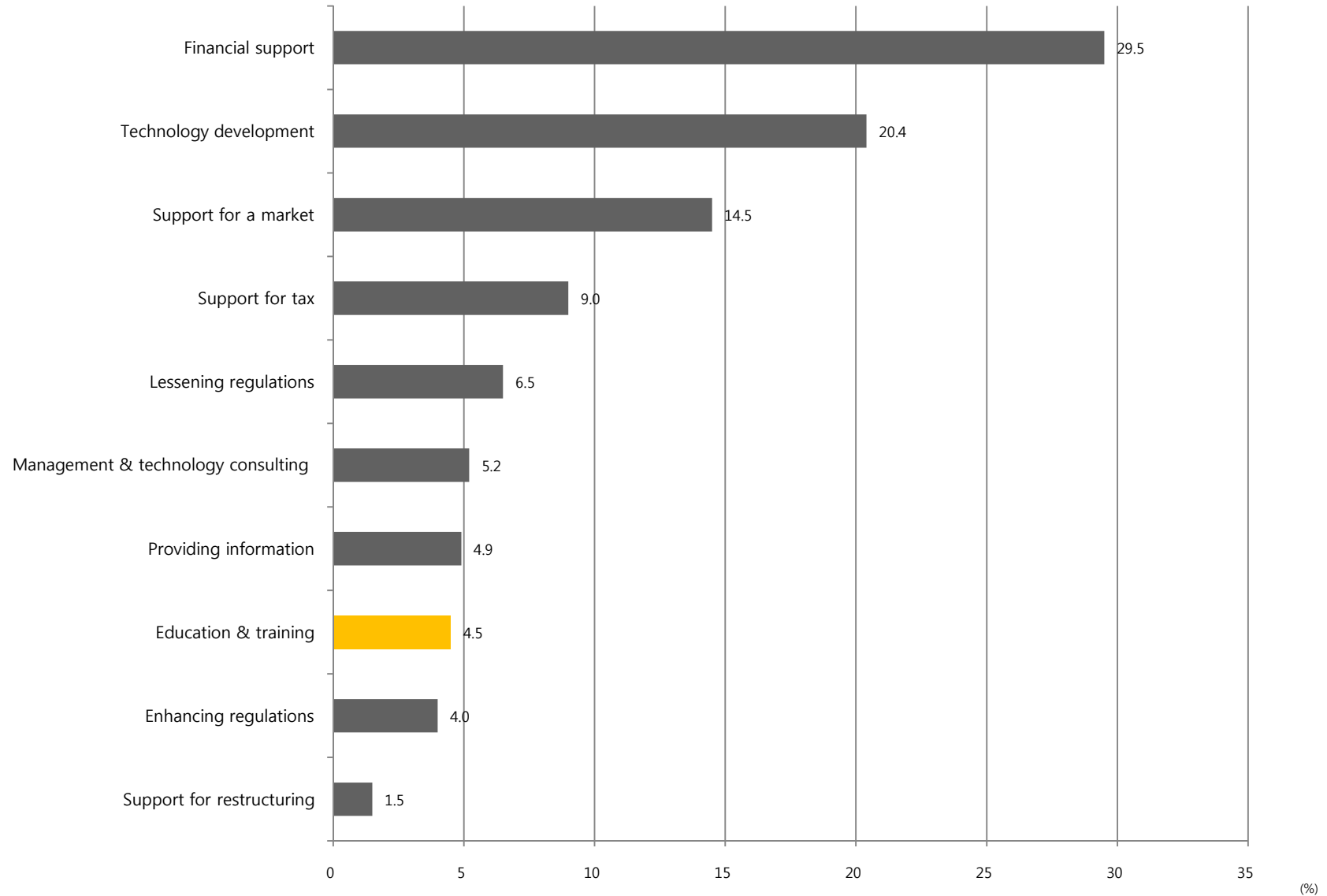


Source:KIET

Green But Not Decent in Environment Industry

- Approximately 54% of environment specialists worked in small and medium size companies (10-49 total employees).
- Higher unemployment rate
 - due to a low-income and hard working condition as well as low level of the market demands
- More surplus for those with higher degree(eg.MA or Ph.D)

Green SMEs do not need skills development that much!



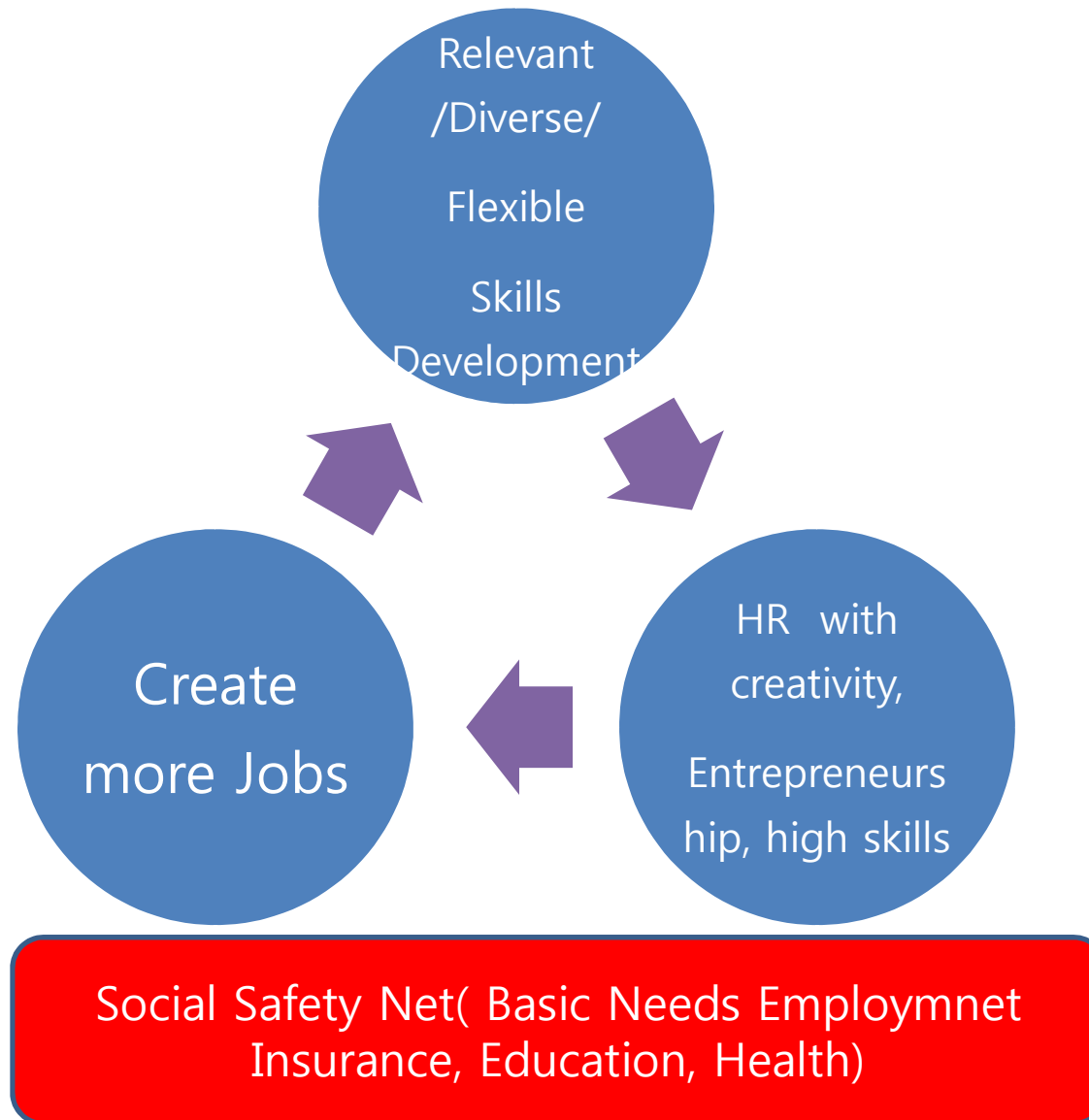
Most needed areas of support from the government by
green SMEs

Source: Korea Institute for Industrial Economics and Trade (2009). Status of green SME and policy

Possibility of Job Creation in Environment Technology with Recent Green Growth Initiative

- Affluent human resources in environmental industry + Green growth Initiative-> environmental industry growth -> provide better opportunities
- Upgrading college graduates with major related to environmental science and technology
- Entrepreneurship Training must be needed so that people with expertise can create their own jobs

Search for Alternative Virtuous circle



III. Skills Response

Diverse Skills Response in terms of skills level, providers, types of training, contents or methodology....

Bottom-up Cases; NGOs or private
industries

Bottom up Case(1): Retraining in agricultural fields, Case of “Heuksalim”*

- **Expanded opportunities for farmers**
- **Agricultural social enterprises and organic Farming**
- **Sustainable, community- based**
 - ✓ promotes organic farming through research and development,
 - ✓ production of organic fertilizers, usage of eco-friendly pesticide organisms,
 - ✓ consultations for organic farming,
 - ✓ education and training programs on organic farming
 - ✓ certifies organic products through laboratory analyses and field monitoring processes
- ***“Heuksalim” mean Revive the earth/soil**

Skills Response in Auto Industry

Hyundai Hybrid automobile training programs for maintenance technicians

	Recipients of ED programs	Contents	Delivery methods
Maintenance Education	Technicians (direct management and cooperation centers)	HEV system principle and maintenance guide ※emphasizing problem diagnosis technique training	<ul style="list-style-type: none"> • For all technicians, face-to-face training • online self study materials • E-Learning education (since 2008, 3,450 participated)
Product education	Sales persons (direct management and agencies)	HEV products and operation education ※emphasizing customer relations and product sales education	<ul style="list-style-type: none"> • HEV principles and how to operate HEV • Online self study materials (e-sales academy.com)

Government Initiated(Top-down) Skills Response

- Government Initiated->Support colleges, polytechs, graduate schools, industries, SCHRDS, etc

GI Skills Response by College Education

- **Curriculum Change of Polytechnics (under Ministry of Labor)**
 - revised the main curriculum to cover new renewable energy systems such as solar photovoltaic (SPV), wind power, fuel cells, etc.
- **Sustainable Building Technology Education Program at Korea Institute of Construction Technology Education**
- **Education and Training Center for Energy Technology, Seoul National University of Technology**

GI Skills Response to highly skilled R&D HRs in Green technology

- Predicted to create 481,000 jobs in 2012 and 1.18 million jobs by 2020
- Select 27 core technologies
- Revise the curriculum of undergraduate and graduate programs related to green technology
- Interdisciplinary programs for convergence of technology such as IT and Environment technology
- Implemented under R&D& Innovation Framework
- R&D investment:3.5% of GDP

GI Skills Development by SCHRDS

- **Since 2003, Sector Councils Human Resource Development (SCHRD) has been established based on financial support from Ministry of Education & HRD and Ministry of Industry & Resources**
 - Machinery SCHRD, Electronics SCHRD, e-Biz SCHRD.
 - In 2005, seven more SCHRDs: Steels/heavy metals SCHRD, Shipbuilding SCHRD, Automobile SCHRD, etc
 - In 2009, Green finance, new renewable energy, global healthcare, ubiquitous sensors
- **Most SCHRDs run by the business association.**
- **SCHRDs: analyze the current situation of HR supply and demand and to figure out skills needs**

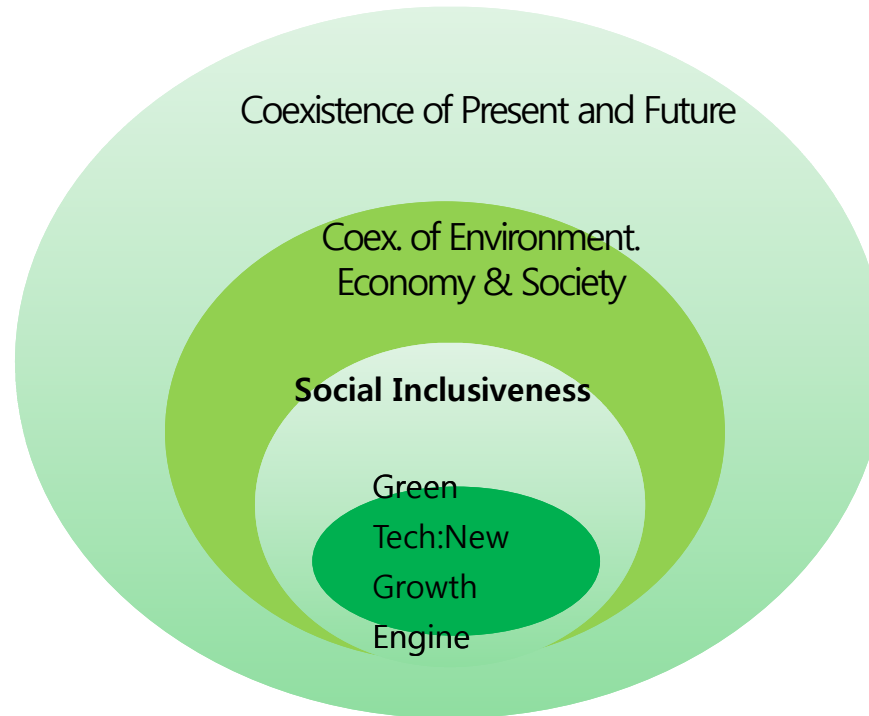
Skills Development by SCHRDS(continued)

- In 2009, Ministry of Labour initiated a new program, “Vocational Education and Training Reform Center”(VETRC)
- the VET based on identified skills by SCHRDS.
- **Automobile SCHRDS:** the skills training for green automobiles and eco-friendly automobiles In partnership with two distinguished engineering colleges in Korea and certification of skills of future generation automobile skills.
- **RNE SCHRDS:** vocational training for the currently employed workers for new and renewable energy related skills
- **GF SCHRDS:** training for green finance investment advising which teach knowledge about green industry trend, risk analysis, comparison of green finance items and social accountable investment etc.

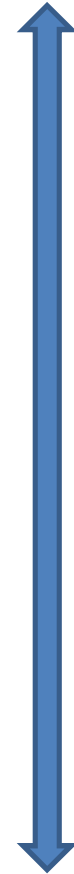
IV. Recommendation from Korean Experience

- Is 'Green Growth' concept sustainable?
 - ✓ Yes but,
 - ✓ Only with broader and Long-term Perspective on Green Growth and Green Talent and Skills Development
- Should consider the philosophy of Sustainable Development
- Should consider Comprehensive Skills Development Framework which includes wide spectrum of skills development and diverse agent of skills development

Sustainable Development

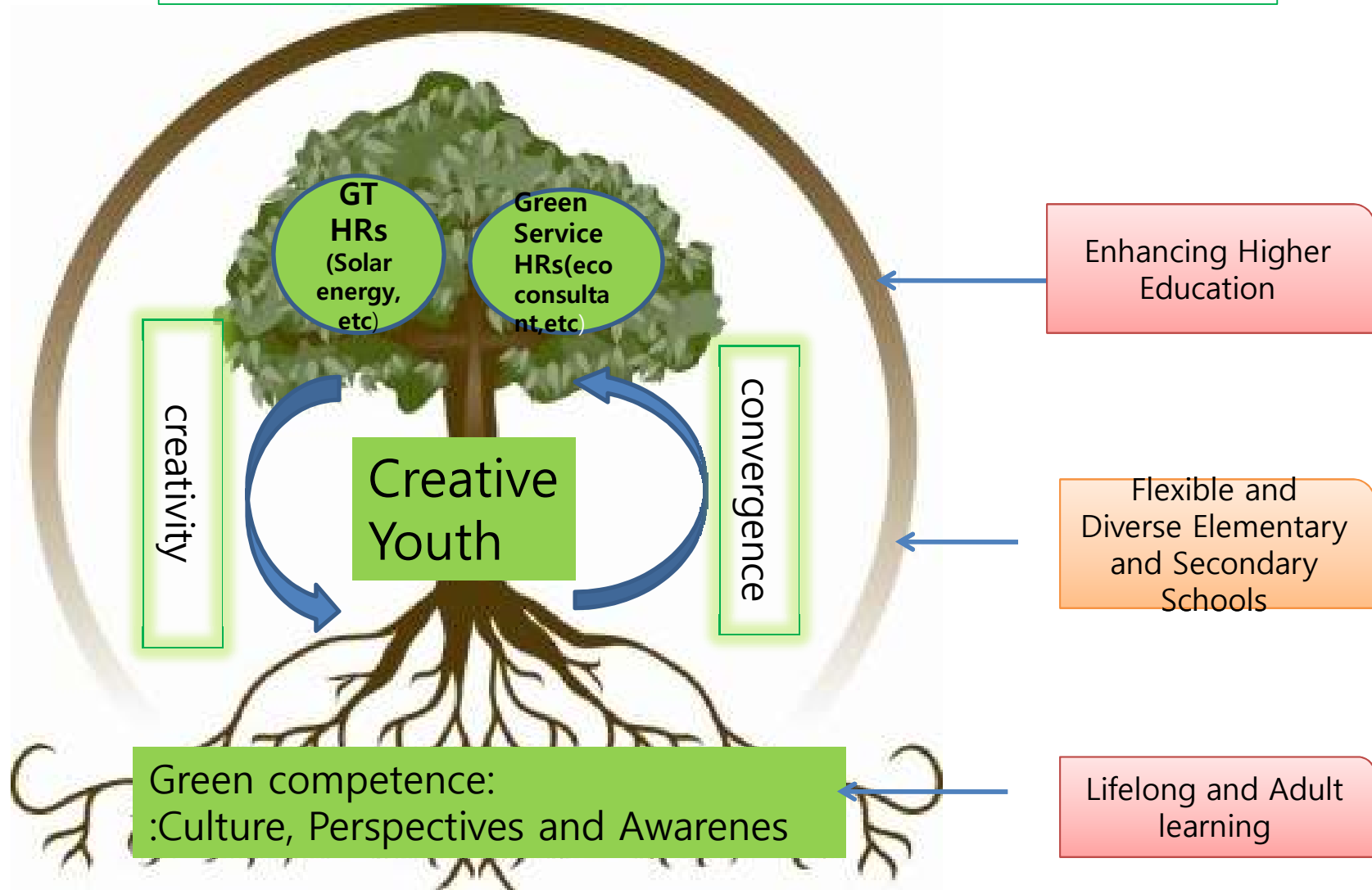


broad.....narrow.



Broad Concept of Green Growth Based on SD

Metaphor of Green Talent Tree: Comprehensive Framework for Skills Development



Misug JIN(2009), How to create green talents for green growth, in "Green Growth Green Jobs Green Talents(ed by KRIVET) 2009

Issues related to Skills Development for Green Growth

1. Integrative utilization of VET system

- **make some consensus about skills Development schemes and definition**
 - Basic Education, Skill development, lifelong learning, HRD in S&T
- **Need for national commission for integrative skills development policy implementation**
- **Integration of bottom-up and top-down**

2. Strengthening information infrastructure related to green jobs and green skills

3. Increase of Quality of VET and Evaluation

- Improving curriculum and Teacher quality
- Career development for green collar workers

감사합니다
Thank You!!!
(Gam-Sa Hamida!!)