# Review of Korean Government Polices for Promoting Gender Diversity in Science and Technology Society

## The 3rd Master Plan for Fostering and Supporting Female Scientists and Engineers (2014 ~ 2018)

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## Employment Ratio of Female to Male (2013)*

- **Employment in science & technology fields: 18.9%**

- **Natural science and engineering schools in national & public universities:**
  **16.2% (2007) → 21.6% (2013)**
  **natural science: 25.6%, engineering: 5.0%**

- **Public research institutes: 23.3%**
  **regular employment: 14.7%, irregular employment: 43.3%**
  **management level: 5.4%**

- **Private research institutes: 13.8%**
  **regular: 13.7%, irregular: 19.7%**
  **management level: 5.7%**

- **New employment: 20.4%**

**Other Statistics**

- **Promotion: 12.5%**

- **Maternity leave: 98.7%**

- **Institutes with childcare facility: 10.7%**

**\*Report on Korean Women in Science, Engineering & Technology**
**(published by Center for Women Science, Engineering and Technology in 2015.4)**

## Girl students ratio in engineering schools (2014)*

Mechanical engineering:          8.8%

Electrical engineering:          9.9%

Electronic engineering:         15.5%

Industrial engineering:         27.3%

Material science & engineering:  27.5%

Computer Science & engineering: 28.5%

Chemical engineering:           35.2%

Textile engineering:            39.1%

*Annual report of education statistics

# The 3rd Master Plan for Fostering and Supporting Female Scientists and Engineers  (2014 ~ 2018)

## Background

- Crucial role of women in science and technology in Korea
  low birthrate, aging society, sensibility technology

- Barriers: low employment rate, discontinuation in career development

  - Limited career promotion due to high irregular employment rate and low opportunity to participate R&D, post education, and international activities

  - Fewer girl students in engineering schools where job demand for long-term employment is relatively high, and education for field adaptation is unsatisfied

  - Part-time labor system in the early stage, and  women's inactive tendency in the challenging environment such as founding start-up companies

  - Poor motherhood protection and  nursing systems though woman-friendly environment is spreading in public sectors

  - Low ratio of women leaders in S&T

**Vision: Enhancing capability of science & technology for creative economy through gendered innovations**

## Action Plans

1) Encouraging talented women by presenting them with vision and career paths in science and technology fields, and promoting their participation in R&D and business

2) Enhancing female scientists and engineers' capabilities by raising their participation in R&D, and reinforcing their global networks

3) Expanding high quality jobs by continuously creating woman-friendly employments, and promoting start-up businesses

4) Converging life-friendly employment by supporting women's easy return to work after career breaks, and fostering cultural change for reconciling work and home life

5) Driving gender diversity by fostering female leaders in science and technology society

# 1) Encouraging talented women by presenting them with vision and career paths in science and technology fields, and promoting their participation in R&D and business

▪ **Quantitative goals**

- Girl students ratio entering engineering schools: (2012) 19.5% ⇒ (2018) 25%
- Girl students ratio in high schools founded for special purpose of science education:
  (2012) 20.2% ⇒ (2018) 30%
- Employment rate of woman graduates in S&T: (2012) 55.6% ⇒ (2018) 60%

▪ **What to do**

- Presentation of vision in career path
  - Girl students S&T career vision project: mentoring and scholarship
  - Introduction of 'tripod mentoring system' composed of parents, teachers and female scientists

- Promotion of participation in R&D and business
  - Promotion of employment to local industries by reinforcement of mentoring by senior women and internship, especially to heavy and civil industries where woman employment rate is very low
  - Operation of 'interagency site' which links DB of small & medium enterprises for customized employment
    Job seeker/recruiting company: (2014) 1,000/500 ⇒ (2018) 10,000/5,000

# 2) Enhancing female scientists and engineers' capabilities by raising their participation in R&D, and reinforcing their global networks

▪ **Quantitative goals**

- **Female principal in R&D: (2012) 11.6% ⇒ (2018) 15%**
- **Female researcher education & training: (2012) 14.6% ⇒ (2018) 20%**
- **Global internship: 500 people till 2018**

▪ **What to do**

- **Extending female R&D participation**
  - **Education & training program for young scientists and irregular employees: Senior researcher mentoring and oversea training programs**
  - **Woman-friendly research fields, favor in the performance evaluation of national research institute**
  - **Female employment guideline**

- **Reinforcing global networks**
  - **Hosting 'Gender Summit 2015' in Seoul**
  - **Launching global internship program**

# 3) Expanding high quality jobs by continuously creating woman-friendly employment, and promoting start-up businesses

▪ **Quantitative goals**

- **Time selective jobs: (2018) 10%**
- **Female member of cooperative association in science & technology: (2014) 18% ⇒ (2018) 30%**
- **Female start-up businesses: (2012) 5.4% ⇒ (2018) 10%**

▪ **What to do**

- **Creating woman-friendly employment**
  - **Encouraging public research institutes to create time selective occupations by providing incentive system**
  - **Launching 'Substitute Female Worker Supply Center' for making up temporary retirements for childcare**
- **Promotion of start-up business**
  - **Women Start-Up (WSU): idea development, commercialization, inroad to global market (start-up alliance, accelerator leaders forum)**
  - **Female Venture Fund: joint funding by government and private sectors (50 million dollar budget for supporting female start-up company)**

# 4) Converging life-friendly employment by supporting women's easy return to work after career breaks and fostering cultural change for reconciling work and home life

▪ **Quantitative goals**

- **Projects for easy return to R&D work: (2014) 100 ⇒ (2018) 1,000**
- **Expanding participation to R&D activities of female over 40 years old: (2012) 57.1% ⇒ (2018) 60%**
- **Adoption rate of autonomous working system for reconciling work and home: (2012) 48.9% ⇒ (2018) 70%**

▪ **What to do**

- **Supporting return-to-work**
  - **Diversification of female specialty fields such as R&D service (2014) 100 → (2018) 1,000**
  - **Supporting preparation for return-to-work according to career levels**

- **Cultural change for reconciling work and home life**
  - **Various models for flexible working system and temporary retirement system suitable to distinctive environments of industry, research institute, and university: (2014) 10 institutes → (2018) 100 institutes**
  - **Woman-friendly management indicators ex) new employment and promotion rates, female principal rate in R&D projects, pay differential, temporary retirement rate for childcare**

# 5) Driving gender diversity by fostering female leaders in science and technology society

▪ **Quantitative goals**

- **Female positions over middle management: (2012) 7.0% ⇒ (2018) 10%**
- **Government committee members: (2013) 27.7% ⇒ (2018) 40%**

▪ **What to do**

- **Fostering female leaders**
  - **Founding '<span style="color:green">Academy for Talented Female Scientists and Engineers</span>' for career development training and consulting**
    **irregular position ⇨ career development ⇨ middle class leader ⇨ core leader**
  - **publicity of successful stories and role models of female scientist and engineers**

- Securing gender diversity
  - <span style="color:green">Gender diversity recognition program</span>
  - Online consulting site for disentangling gender diversity recognition problem: <span style="color:green">GAP</span>(Gender-Awareness Problem site)
  - <span style="color:green">Gender innovations checking guideline</span> and introduction of <span style="color:green">gender analysis obligation system in R&D planning</span>
  - ex) Gender innovation factors should be reflected in the research proposal to take part in HORIZON 2020 program, and 'Gender Analysis Special Committee' gives favor in the project selection.

# Concluding Remarks

- **Cultural transition from a fixed idea on the traditional women's role**

- **Self-confidence in active movement against challenging environment**

- **Easy return to work after career breaks and to overcome household burden**