Policies and Efforts in Japan for Gender Equality in Sciences

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The State of Gender

Equality in Japan

In Comparison with Other Countries

Human Development Indices

HDI (Human Development Index)

HDI Rank	Country	HDI
1	Iceland	0.968
2	Norway	0.968
3	Canada	0.967
4	Australia	0.965
5	Ireland	0.960
6	Netherlands	0.958
7	Sweden	0.958
8	Japan	0.956
9	Luxembourg	0.956
10	Switzerland	0.955
11	France	0.955
12	Finland	0.954
13	Denmark	0.952
14	Austria	0.951
15	U.S.A.	0.950
16	Spain	0.949
17	Belgium	0.948
18	Greece	0.947
19	Italy	0.945
20	New Zealand	0.944
21	U.K.	0.942
22	Hong Kong, China	0.942
23	Germany	0.940
24	Israel	0.930
25	Korea	0.928

(Source) UNDP 2008　　(Total: 179 countries)

GEM (Gender Empowerment Measure)

GEMRank	Country	GEM
1	Sweden	0.925
2	Norway	0.915
3	Finland	0.892
4	Denmark	0.887
5	Iceland	0.881
6	Netherlands	0.872
7	Australia	0.866
8	Germany	0.852
9	Belgium	0.841
10	Switzerland	0.829
11	Canada	0.829
14	U.K.	0.786
17	France	0.780
18	U.S.A.	0.769
21	Italy	0.734
57	Venezuela	0.577
58	Japan	0.575
59	Kyrgyzstan	0.573
68	Korea	0.540
69	Malaysia	0.538

(Source) UNDP 2008　　(Total: 108 countries)

GGI (Gender Gap Index)

GGI Rank	Country	GGI
1	Norway	0.8239
2	Finland	0.8195
3	Sweden	0.8139
4	Iceland	0.7999
5	New Zealand	0.7859
6	Philippines	0.7568
7	Denmark	0.7538
8	Ireland	0.7518
9	Netherlands	0.7399
10	Latvia	0.7397
11	Germany	0.7394
12	Sri Lanka	0.7371
13	U.K.	0.7366
14	Switzerland	0.7360
15	France	0.7341
27	U.S.A	0.7179
31	Canada	0.7136
67	Italy	0.6788
98	Japan	0.6434
108	Korea	0.6154

(Source) World Economic Forum 2008

(Total: 130 countries)

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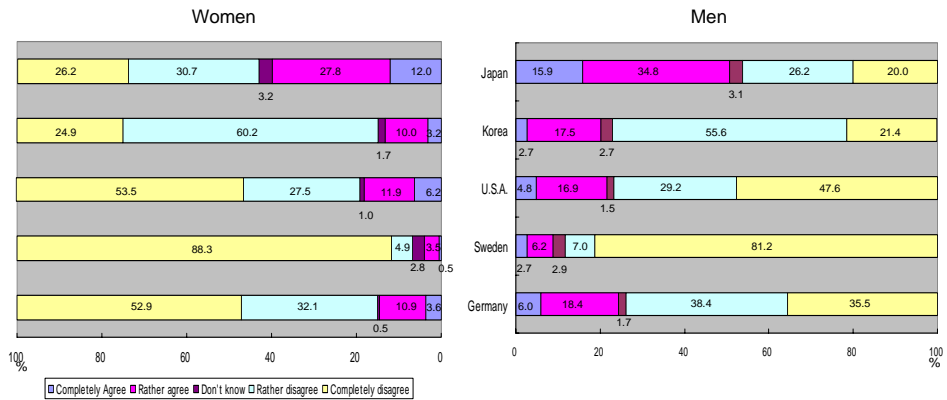## Percentages of Women among Ordinary Workers and Managerial-level Workers

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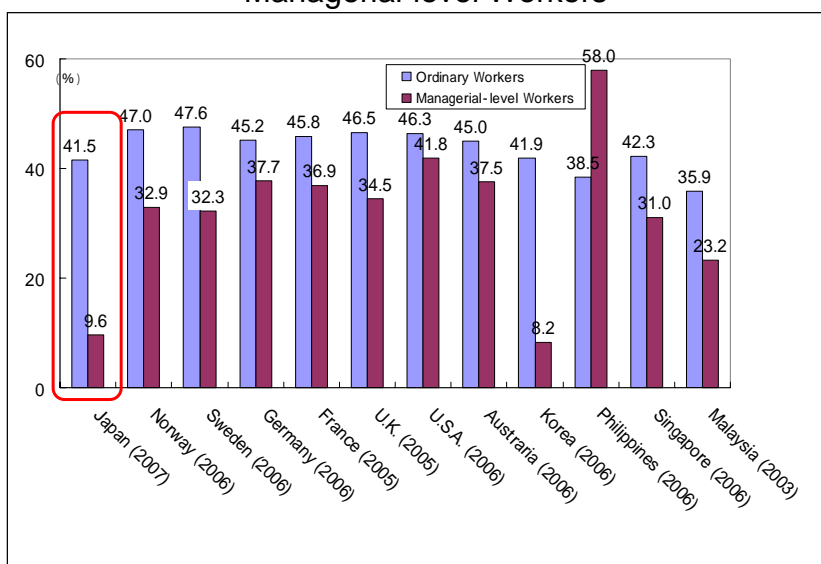
Female Labour Force Participation Rate by Age Bracket
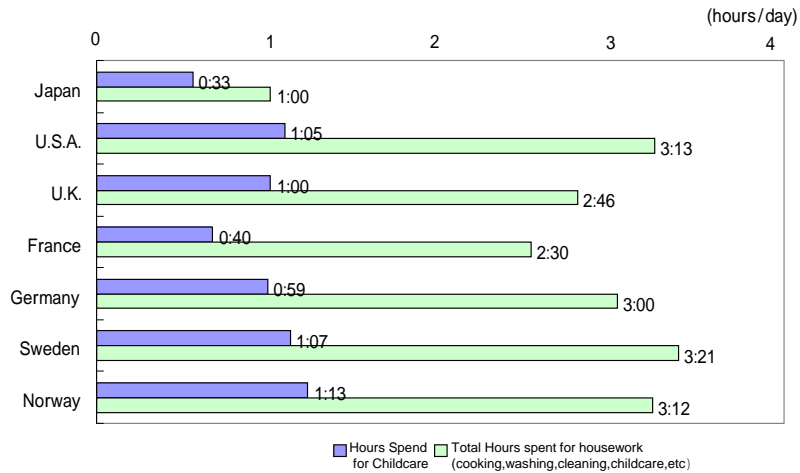

Legend: Japan, Germany, Sweden, Korea, U.S.A.
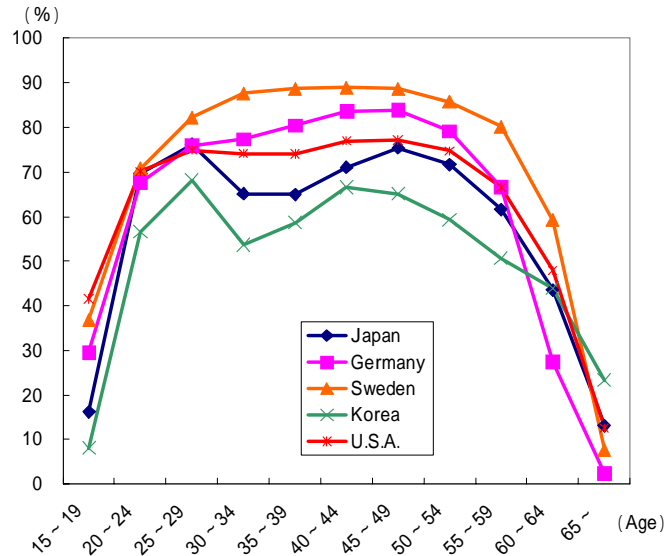
Notes)Japan "Labor Force Survey 2008) ",Other "LABORSTA(2007) "

View on the Question,
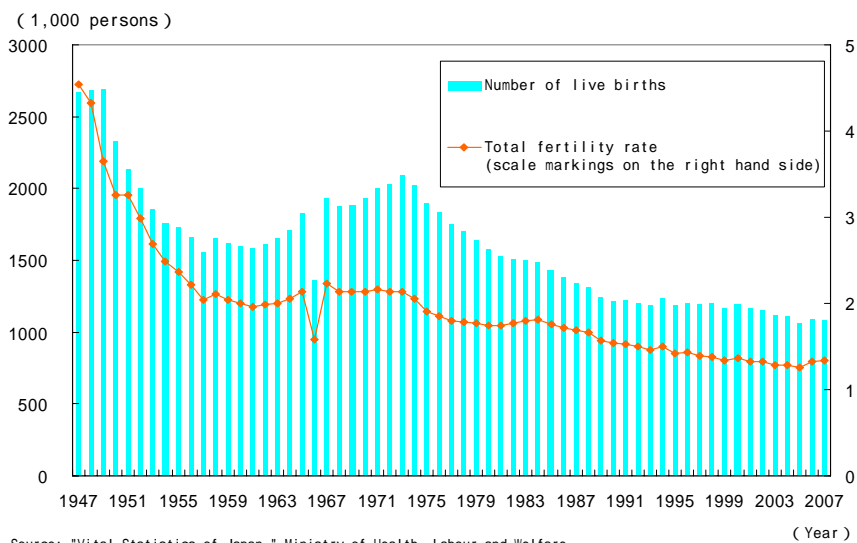## "The Husband Should Be the Breadwinner, the Wife Should Stay at Home" (2004)

Women

Country					
Japan	26.2	30.7	3.2	27.8	12.0
Korea	24.9	60.2	1.7	10.0	3.2
U.S.A.	53.5	27.5	1.0	11.9	6.2
Sweden	88.3	4.9	2.8 0.5	3.5	
Germany	52.9	32.1	0.5	10.9	3.6

Men

Country					
Japan	15.9	34.8	3.1	26.2	20.0
Korea	2.7	17.5	2.7	55.6	21.4
U.S.A.	4.8	16.9	1.5	29.2	47.6
Sweden	2.7	6.2	2.9	7.0	81.2
Germany	6.0	18.4	1.7	38.4	35.5

Legend: Completely Agree, Rather agree, Don't know, Rather disagree, Completely disagree

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Hours of Housework and Childcare Performed by Husbands per Day (target:couples with children under 6 years of age)

(hours/day)

Japan	0.33	1:00
U.S.A.	1:05	3:13
U.K.	1:00	2:46
France	0.40	2:30
Germany	0.59	3:00
Sweden	1:07	3:21
Norway	1:13	3:12

■ Hours Spend for Childcare   □ Total Hours spent for housework (cooking,washing,cleaning,childcare,etc

Notes)Eurostat"How Europeans Spend Their Time Everyday Life of Woman (2004)",
Bureau of Labor Statistics of the U.S."America Time-Use Summary(2006)"
The Mnistry of Internal Affairs and Communications"2006 Survey on Time Use and Leisure Activities"

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Changes in Live Births and Total Fertility Rate

1,000 persons

Number of live births

Total fertility rate (scale markings on the right hand side)

Year

Source: "Vital Statistics of Japan," Ministry of Health, Labour and Welfare

Measures towards
Women Empowerment and a Gender-equal Society
in Japan

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1. Basic Framework for Gender Equality

<National Machinery>

   Headquarters for the Promotion of Gender Equality(President: Prime Minister)

   Council for Gender Equality

  (Chair: Chief Cabinet Secretary)

   Minister for Gender Equality

   Gender Equality Bureau, Cabinet Office

<Basic Legislation>

   The Basic Law of Gender-equal Society(1999)

  Basic Plan for Gender Equality(2nd Plan (2005))

   Law on Securing of Equal Opportunity and Treatment between Men and Women in Employment (1985)

1. *Expand*: Decision –making process
2. *Review*: Social systems & practices, awareness
3. *Secure*: Employment
4. *Establish*: Rural areas
5. *Support*: Work-Life balance
6. *Develop*: Conditions for the elderly
7. *Eliminate*: Violence against women
8. *Improve*: Health
9. *Promote*: Media
10. *Enrich*: Education and learning
11. *Contribute*: Global community
12. *Advance*: Science & Technology, and other new fields

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2. Measures to Expand Women's Participation

❍ **Expansion of Women's Participation in Decision-Making Processes**

Target set: at least 30% of the leadership positions to be held by women in all fields of society by 2020 (The Second Basic Plan for Gender Equality (December 2005))

❍ **Expansion of Women's Participation in New Fields including Science and Technology**

Target set: 25% for female recruitment on the natural sciences as a whole (The Second Basic Plan for Gender Equality, The Third Basic Plan of Science and Technology (March 2006))

❍ **Support to Women's Renewed Challenges**

"Plan to Support Women's Renewed Challenges" (2005): providing comprehensive support measures for women relating to learning and skill development, re-employment and entrepreneurial opportunities

❍ **"Program for Accelerating Women's Social Participation " (April 2008)**

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"Program for Accelerating Women's Social Participation "(FY2008-2010)

Present Situation

Women's participation in the society, especially in the decision making processes remains low.

"Program for Accelerating Women's Social Participation "

as a strategic measure for promoting women's participation
(decided by the Headquarters for the Promotion of Gender Equality on April 8th, 2008)

Basic Directions of the Program

Awareness Raising
Awareness raising of top-ranking executives of every sector of society,managers, and women themselves

Promotion in Collaboration

Realization of Work-Life Balance
Promotion of concrete measures following "Charter" and "Action Policy" for Work-Life Balance (2007)

Support for Capacity Development of Women
Promotion of positive action for displaying women's ability
Support for women's career development including into new areas
Support for women's re-employment after child-rearing

Realization of "30% women in leadership positions by 2020"

Towards a diversified and vigorous society!

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"Program for Accelerating Women's Social Participation "

Examples of Concrete Measures to be Implemented by the End of FY2010

(1) Creation of an Environment for Accelerating Women's Social Participation in Every Field of Society
(Examples)
- **Strategic awareness raising of top-ranking executives of every sector of society**
- **Support to formulation of network among women in their communities and various fields**
- **Evaluation to positive measures / Provision of good practices**

(2) Focus on the Fields with Low Female Participation such as Doctors, Researchers and Public Officers

Ripple effect on other fields is expected

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3. Promotion of Work-Life Balance

Promotion of work-life balance had been dependent on the efforts made by companies.

The government started to recommend promotion of work-life balance at meetings and conferences from various viewpoints including gender equality, increase of birthrate and labour market reform.

In December 2007, the representatives from various fields, such as the business community, the labour community and the government, formulated " Charter for Work-Life Balance" and "Action Policy for Promoting Work-Life Balance"

Comprehensive measures toward a work-life balanced society have been promoted by the public and private sectors as one, such as…
- Campaign
- Correction of long working hours
- Promotion of child care leave
- Appropriate treatment of part-time workers

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"The Charter for Work-Life Balance" 2007)

What is "a work-life balanced society"?
A society where each citizen can choose and live a variety of lifestyles according to different stages of life, such as the childrearing and midlife periods, within his/her family and community as well as works satisfactorily and fulfills his/her work-related responsibilities.

1. A society where economic independence by working is possible

2. A society where time can be secured for healthy and rich lives

3. A society where choosing a variety of ways of working and living is possible
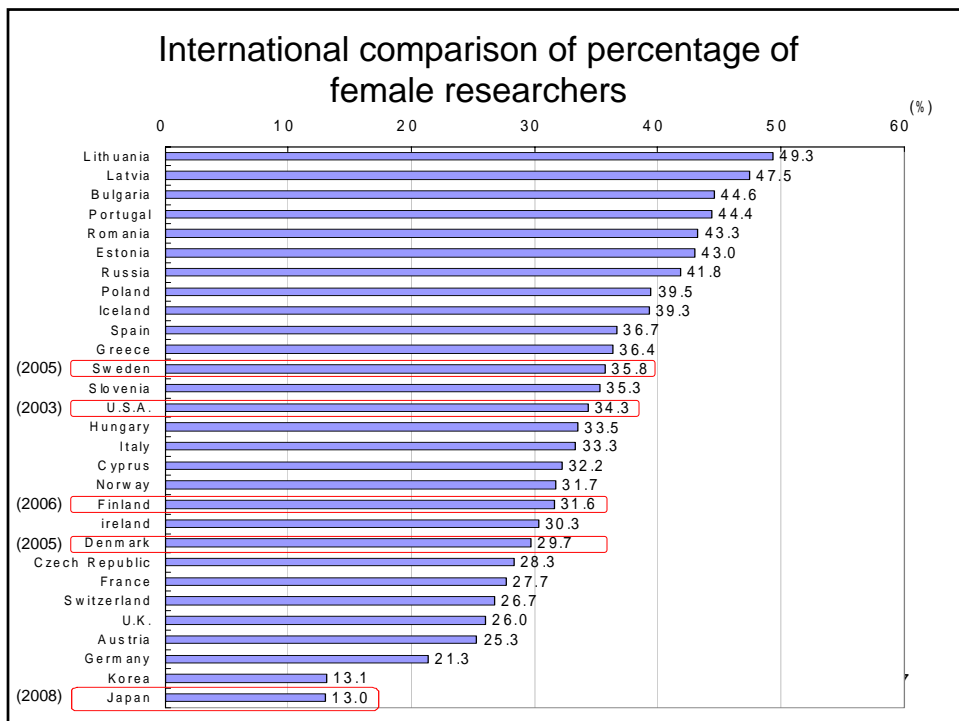
A diversified, vigorous and sustainable society
each citizen will be able to make the most of his/her willingness and ability, companies and organizations will be able to enhance their competitiveness and rich society will be built.)

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The State　Gender Equality in Sciences in Japan

International comparison of percentage of female researchers

Country	(%)
Lithuania	49.3
Latvia	47.5
Bulgaria	44.6
Portugal	44.4
Romania	43.3
Estonia	43.0
Russia	41.8
Poland	39.5
Iceland	39.3
Spain	36.7
Greece	36.4
(2005) Sweden	35.8
Slovenia	35.3
(2003) U.S.A.	34.3
Hungary	33.5
Italy	33.3
Cyprus	32.2
Norway	31.7
(2006) Finland	31.6
ireland	30.3
(2005) Denmark	29.7
Czech Republic	28.3
France	27.7
Switzerland	26.7
U.K.	26.0
Austria	25.3
Germany	21.3
Korea	13.1
(2008) Japan	13.0

Ratio of female researchers (by institute)
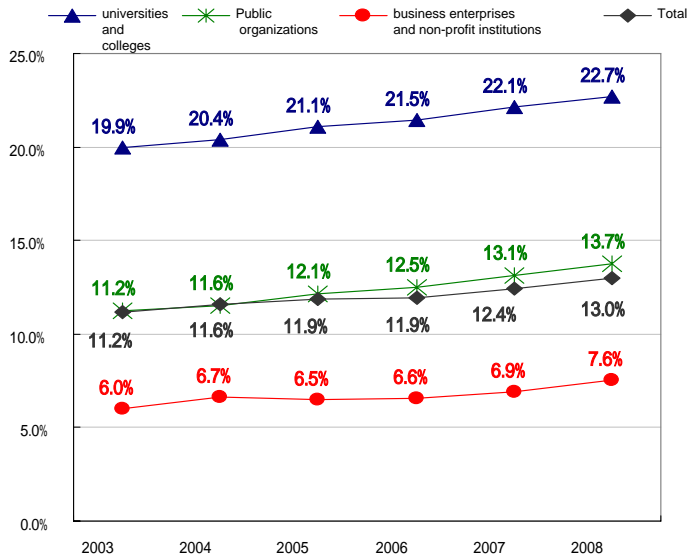
universities and colleges | Public organizations | business enterprises and non-profit institutions | Total

	universities	Public org.	Total	business
2003	19.9%	11.2%	11.2%	6.0%
2004	20.4%	11.6%	11.6%	6.7%
2005	21.1%	12.1%	11.9%	6.5%
2006	21.5%	12.5%	11.9%	6.6%
2007	22.1%	13.1%	12.4%	6.9%
2008	22.7%	13.7%	13.0%	7.6%

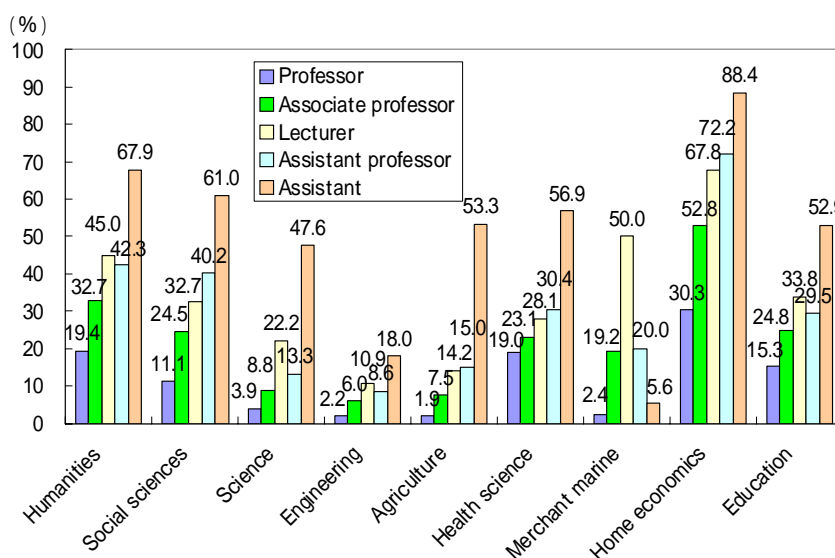"Results of the Survey of Research and Development"
by the Ministry of Internal Affairs and Communication

Or anizations which Researchers belong
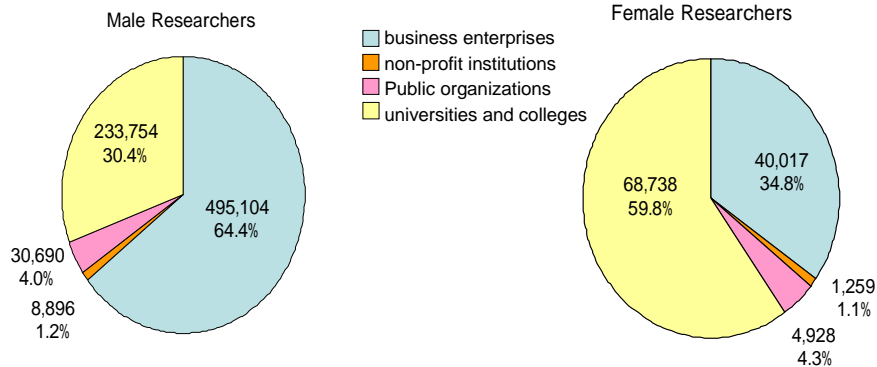
Male Researchers

Female Researchers

business enterprises
non-profit institutions
Public organizations
universities and colleges

Male Researchers:
- 233,754 / 30.4%
- 495,104 / 64.4%
- 30,690 / 4.0%
- 8,896 / 1.2%

Female Researchers:
- 40,017 / 34.8%
- 68,738 / 59.8%
- 1,259 / 1.1%
- 4,928 / 4.3%

"Results of the Survey of Research and Development"
by the Ministry of Internal Affairs and Communication(FY2008)

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Percentage of female faculty members

Legend:
- Professor
- Associate professor
- Lecturer
- Assistant professor
- Assistant

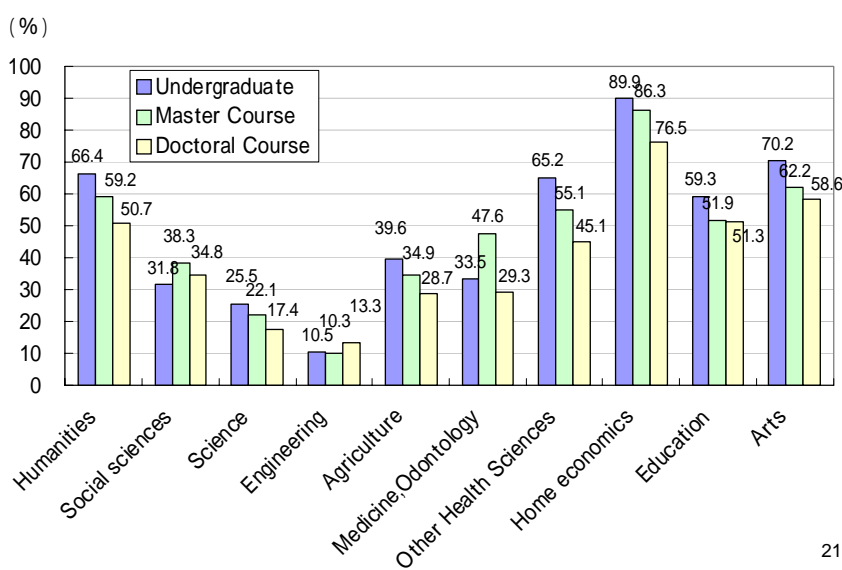| Category	Professor	Associate professor	Lecturer	Assistant professor	Assistant
Humanities	19.4	32.7	45.0	42.3	67.9
Social sciences	11.1	24.5	32.7	40.2	61.0
Science	3.9	8.8	22.2	13.3	47.6
Engineering	2.2	6.0	10.9	8.6	18.0
Agriculture	1.9	7.5	14.2	15.0	53.3
Health science	19.0	23.1	28.1	30.4	56.9
Merchant marine	2.4	19.2	50.0	20.0	5.6
Home economics	30.3	52.8	67.8	72.2	88.4
Education	15.3	24.8	33.8	29.5	52.9

Note) The data come from "School Basic Survey (2008)", Ministry of Education, Culture, Sports, Science and Technology
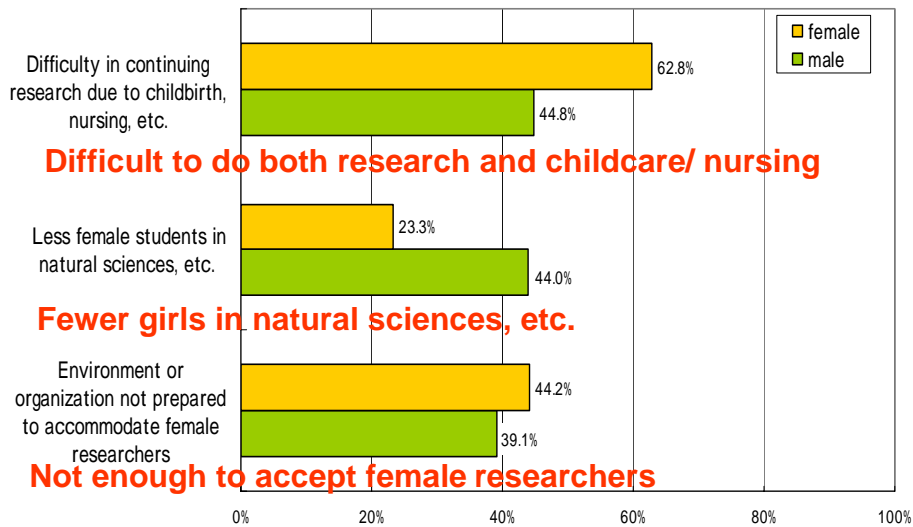
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Share of female undergraduate and graduates in Japan

Legend:
- Undergraduate
- Master Course
- Doctoral Course

Category	Undergraduate	Master Course	Doctoral Course
Humanities	66.4	59.2	50.7
Social sciences	31.8	38.3	34.8
Science	25.5	22.1	17.4
Engineering	10.5	10.3	13.3
Agriculture	39.6	34.9	28.7
Medicine,Odontology	33.5	47.6	29.3
Other Health Sciences	65.2	55.1	45.1
Home economics	89.9	86.3	76.5
Education	59.3	51.9	51.3
Arts	70.2	62.2	58.6

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Note) The data come from "School Basic Survey (2008)", Ministry of Education, Culture, Sports, Science and Technology

Reasons for small numbers of female researchers

Difficulty in continuing research due to childbirth, nursing, etc.
- female: 62.8%
- male: 44.8%

Difficult to do both research and childcare/ nursing

Less female students in natural sciences, etc.
- female: 23.3%
- male: 44.0%

Fewer girls in natural sciences, etc.

Environment or organization not prepared to accommodate female researchers
- female: 44.2%
- male: 39.1%

Not enough to accept female researchers

note "Survey on Conditions of Research Activities of Japan", Ministry of Education, Culture, Sports, Science and Technology

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Problems for Gender Equality in Sciences

Difficulties in balancing research and childbirth/ child-rearing
*long working hours
* Insufficient support for child-rearing
*gender stereo-typed role-sharing
Increase of fixed-term positions, sometimes bringing conflicts with childbirth and child-rearing
Systems inflexible and unfitted for diverse lifecycles and circumstances (ex.age restrictions)
Gender bias in employment and promotion
Lack of role-models for women
Gender stereo-typed idea in selection of majors

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Japanese Government Strategies and actions for Gender Equality in Sciences

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Japanese government has made efforts to promote gender equality in sciences these five years to realize an advanced S&T oriented nation.

"FY2004 Annual Report on the State of Formation of a gender-Equal Society" (2004) featuring "S&T Development and gender equality"

"the 2nd Basic Plan for Gender Equality" (December 2005)

"the 3rd Science and Technology Basic Plan" (March 2006)

Start of several programs for encouraging female researchers and engineers by MEXT (FY2006-)

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Proposal for reform of system by Council for Science and Technology Policy (2007)
"the Program for Accelerating Women's Social Participation" (2008)
"the Strategy for Innovative Technology (2008)"
"the Law for reinforcement of development of research (2008)"
Start of new program for accelerating reform for fostering and recruitment of female researchers(2009~)

The Second Basic Plan for Gender Equality (December 2005)

Expansion of Women's Participation in Policy Decision- Making Processes
 Target set: at least 30% of the leadership positions to be held by women in all fields of society by 2020

Expansion of Women's Participation in New Fields
Science and Technology
Target set: 25% for female recruitment on the natural sciences as a whole
(science:20%, engineering:15%, agronomics:30%, healthcare:30%)
Promoting work-life balance, recruitment and promotion of female researchers, participation of women in decision-making and encouraging girls into S&T

**The 3rd Science and Technology Basic Plan
(FY2006-FY2010)**

*Numerical target

  prospective recruitment target of female researchers <u>for
natural sciences as a whole</u> is 25 % (science: 20%,
engineering: 15% , agronomics: 30%, healthcare: 30%)

* <u>Actions of universities and public research institutions</u>
  general improvements, activities including consciousness
reform by providing support for the balancing of research
and child birth/ rearing
  fair recruitment after openly seeking female researchers
   promoting female researchers for advancement and
participation in policy-making bodies

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**The 3rd Science and Technology Basic Plan
(FY2006-FY2010)**

*<u>Actions of government and funding agencies</u>
   acknowledging a fixed period of respite or
postponement   following child birth/ rearing in receiving
competitive funds
   support for research institutions that are implementing
efforts that others should follow (positive models with
good practices)
   grasp and disclose the status of those efforts on the
numerical targets for recruitment by the universities and
research institutions
   provision of information such as familiar examples
(positive role models) to encourage girls into the S&T
fields

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Encouraging Female Researchers and Engineers

MEXT encourages female researchers and engineers to continue in their careers and conducts programs to promote interest in science and increased activity and participation by women

Returning to Lab

Support for returning to lab after maternity/childcare leave
Fellowship and research grant for postdocs
(FY2009 budget ¥393 million = about US$ 3,931 thousand)

Support for Continuing to Research on/after Maternity/Childcare/Parent care
Subsidies for research units
(FY2009 budget ¥57 million = about US$ 566 thousand)

Support for Model Programs

Supporting activities for female researchers
Competitive grants made to support universities and research institutes that construct a framework to enable female researchers to balance work and life
(FY2009 budget ¥1,550 million = about US$ 15,500 thousand)

Supporting positive activities for female researchers
Competitive grants made to support universities and research institutes that proactively hire female researchers in Science, Engineering, and Agriculture
(FY2009 budget ¥500 million = about US$ 5,000 thousand)

Outreach to Schoolgirls

Project to support the career choice in sciences for junior/senior high school girls
Exposure to role models working in science and technology fields
(FY2009 budget ¥32 million = about US$ 324 thousand)

Support for Returning to Lab after Maternity/Childcare Leave

FY2009 budget ¥393 million
= about US$ 3,931 thousand
FY2008 budget ¥349 million
= about US$ 3,494 thousand)

Fellowship established under JSPS Research Fellowships for Young Researchers   **RPD: Restart Postdoc Fellowship**

Supports smooth return to the lab by outstanding researchers who have suspended their work for maternity/childcare within the past five years.

Tenure: 2 years   Monthly stipend: ¥364 thousand (= about US$ 3,640)
Research grant: ¥1.5 million/year (= US$ 15,000 /year)

< Before >

Interruption of work by maternity/childcare

Research Activities   **Wall**   Research Activities

During maternity/child-care leave, substantial research progress is difficult, which leads to difficulty in finding a new job

< Under this program >

Interruption of work by maternity/childcare

Financial support for return to lab

Research Activities   Research Activities

Grant support provided under Restart Postdoc Program facilitates a smooth return to the workplace.

☆JSPS PD System☆   Supporting young talented scientists as post-docs (1985-). Postdocs will be given a salary and small budget for research and are eligible to apply for a MEXT grant.

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Support for Continuing to Research on/after Maternity/Child care/Parent care

FY2009 budget ￥57 million
= about US$ 566 thousand

New subsidies established under JST Research grant since FY2008
Subsidies for equal participation of men and women
Supports scientists in JST granted research unit to continue or return to
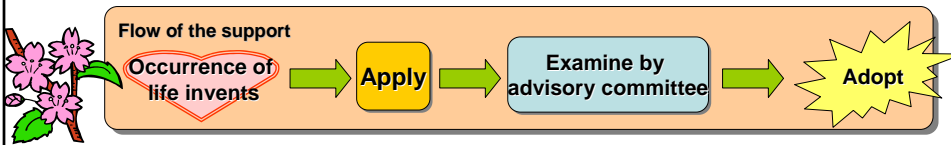their research activity in case of maternity/child care/parent care.
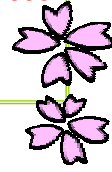
Tenure: child care -- till the child entrance into a primary school
parent care -- till the care comes to be unneeded

Amount of subsidy: ￥3 million/year (= about US$ 30 thousand /year) at the max

Receiver: the research unit the applicant belongs to

Use of subsidy: employment of research assistant,
other expenses for research activity or workload relief

Flow of the support

Occurrence of life invents → **Apply** → **Examine by advisory committee** → **Adopt**

Model Programs to Support Female Researchers
- Supporting Activities
for Female Researchers

FY2009 budget ￥1,550 million
= about US$ 15,500 thousand
FY2008 budget ￥1,500 million
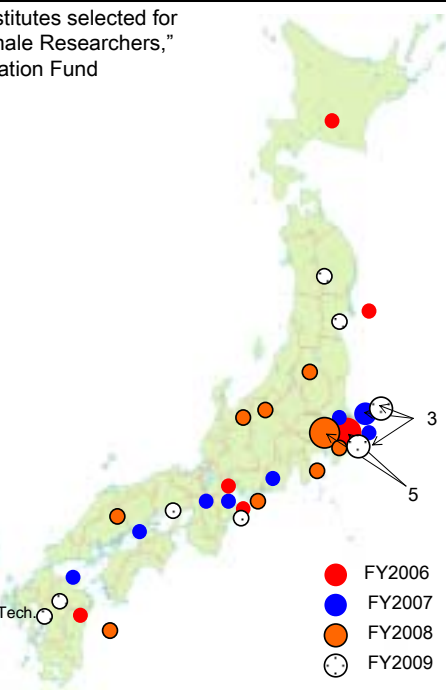= about US$ 15,000 million)

Support for universities and research institutes that construct a framework to enable female researchers to balance work and life

Supporting period : 3 years
Grant: ￥30~50 million / year
(= about US$ 300~500 thousand / year)

45 institutions selected in FY 2006~2009

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Universities and Research Institutes selected for
"Supporting Activities for Female Researchers,"
S&T Special Coordination Fund

FY2006	FY2007	FY2008	FY2009
Ochanomizu U.	Osaka U.	Kanazawa U.	Akita U.
Kyoto U.	Kyushu U.	Keio U.	Okayama U.
	Kobe U.	Shizuoka U.	Saga U.
Kumamoto U.	Nat'l Inst. of Advanced Industrial S&T	Shimane U.	Sophia U.
Tokyo Women's Medical U.		Tsuda C.	Tsukuba U.
	Forestry & Forest Products Res. Inst.	Tokai U.	Tokyo City U.
Tokyo U. of Agriculture and Tech.		Tokyo Medical & Dental U.	Toho U.
Tohoku U.	Chiba U.		Nagasaki U.
	Tokyo U.	Tokyo Inst. Of Tech.	Nara Inst. of S&T
Nara Women's U.	Nagoya U.	Toyama U.	Nat'l Inst, of for Agro-Env. Sci.
Japan Women's U.	Hiroshima U.	Niigata U.	
		Nihon U.	Nat'l Agriculture & Food Re. Org.
Hokkaido U.	Nat'l Inst. for Material Sci.	Mie U.	
Waseda U.		Miyazaki U,	Yamagata U.

3

5

● FY2006
● FY2007
● FY2008
○ FY2009

Reference)
Source: Ministry of Education, Culture, Sports, Science & Tech.
Kyoto U.,, Kyushu U., Tokyo U. of Agriculture and Tech.,
Tohoku U. and Hokkaido U. are selected for the Program,
"Supporting Positive Activities for Female Researchers."

Examples of Efforts to support female researchers

*Provide Childcare Services

   Nursery in campus

   Special care service for sick children

*Reform of working style

   Short-time work during child-rearing

   E-work system

   9 to 5 working system

*Employment of research assistants

*Mentoring system

Model Programs to Support Female Researchers
- Supporting positive activities
for female researchers

FY2009 budget \ 500 million
= about US$ 5,000 thousand
NEW)

Support for universities and research institutes that proactively hire female researchers
in the fields of <u>Science</u>, <u>Engineering</u>, and <u>Agriculture</u>

Supporting period : 5 years
Grant: \ 100 million / year
          (= about US$ 1,000 thousand / year)

5 institutions selected in FY 2009

Project to support the career choice in sciences for junior/senior high school girls

FY2009 budget \ 32 million
= about US$ 324 thousand
FY2008 budget \ 34 million
= about US$ 341 million)

Problems

\# Low percentage of Japanese female researchers

\# Few role models

\# Difficulty in conceiving future possibilities

Solutions

\# Information on career options
\# Motivating girls to have interest in science and technology
\# Promoting activity of female researchers

Support For Career Paths

Matching school girls with researchers/engineers

· **Examples of active women in science and technology fields**
Information on role-models and career choices
· **Camps, symposia for school girls**
To meet and interact with female researchers and engineers

Raising interest in the fields of natural sciences

· **Classroom laboratories and deliver classes**

Career Advancement

Researchers
Engineers

Job

Graduate School
PhD Students
Post-docs

University Undergraduates

Elementary School Kids

Increasing Interest by Girls in Science and Technology

Super Science High Schools

Emphasis on education of science and mathematics in collaboration with universities

Science Partnership Programs

Collaborations between schools and science museums aimed to raise interest in science and technology