[Presentation Nr.]

Gender equality in the Japanese Forest Society -The first decade

What has improved and where is there still need for improvement?

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1 Introduction

Setting up an environment that enables diverse human resources, whether male or female, to fulfill their potential in the field of forest research is an important issue for the development of forest science. The proportion of women researchers in Japan has been on a slight rising trend, and it reached 14% at the end of March 2012 (Cabinet Office, 2013). It remains, however, far below the rates in other major developed countries. The field of forest science is not an exception to this. Most forest scientists have been men, and there is little forest-related research from a gender perspective. The gender issue in forest research has arisen as an actively tackled issue only recently.

The Japanese Forest Society (JFS) is the only academic society in Japan that covers various areas related to forests and forestry comprehensively. The JFS was founded in 1914 and has over 2,000 members now. Most forest science researchers in Japan belong to the JFS, and the state of JFS members could be said to reflect the state of forest researchers in Japan. In 2002, JFS started actions to promote gender equality. Since then, in the last decade, the JFS has established the position of a director concerned with gender equality as a member of the board and has begun activities to promote gender equality within the JFS.

In this paper, we discuss the gender equality issues in forest research in Japan to explore what challenges the JFS has addressed in this first decade and where there is still need for improvement.

2 Research Framework and Method

To clarify the state of gender equality in forest research, we investigated three aspects: (1) The trends and background of the proportion of women in forest research, (2) Research and related activities by women researchers, and (3) The status of the balance between the work and private lives of women

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researchers.

To get an idea of the basic status of gender equality among forest researchers, we used the data from the membership lists of the JFS (Table 1). We learned the gender balance, age structure, and differences between student members and other general members from the membership list data. To understand the current status, we used the membership data as of June 2013. To learn the status from 10 years ago, we used the data from fiscal year (FY; April 1 to March 31) 2004, which is the oldest data we could obtain. The exact date that we collected the FY2004 data is unfortunately missing. The data from the members list, which has both sex and birth date, were used to analyze the proportion of women researchers by sex and age group. The data that were used in this analysis came from 75% of the JFS members in FY2004 and 79% of the JFS members in 2013.

Table 1: Basic information from the JFS member lists

	FY2004			2013		
Data acquisition	FY2004（The exact date is missing）			11 June 2013		
Number of members	Total	General members	Student members	Total	General members	Student members
	2,770	2,045	725	2,183	1,770	413
Members who registered sex and birth date	2,069	1,386	683	1,730	1,391	339
Proportion of members	75%	68%	94%	79%	79%	82%

Source: JFS member lists from FY2004 and June 2013.

To investigate the background and meanings of the results from the analysis described above, we checked the data on the proportion of women students who had majored in forestry courses at four main universities in Japan. We also referred to the data from the Basic School Survey conducted by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) as well as from some reports on related issues.

To understand the activities of women researchers, we used data on head presenters by sex at the annual JFS conferences, the JFS board member lists, and the member list of the forest-related committee with which some forest researchers are involved as academic experts. The first data were collected by counting the names on the programs. Some presenters, 6% on average, could not be identified by sex using only their names, and those presenters are excluded from the data counted.

Lastly, to determine the status of researchers' work-life balance, we mainly used the results of a survey by the Japan Inter-Society Liaison Association Committee for Promoting Equal Participation of Men and Women in Science and Engineering (EPMEWSE) as well as a separate EPMEWSE's survey report containing only the responses of JFS members. Unfortunately, the results from the latest surveys have not been published yet, so we could not examine the changes in this decade; we could examine only the recent statuses.

3 Result: The Status of Women Researchers in the Forestry Field

3.1 The proportion of women forest researchers

3.1.1 The proportion of women JFS members

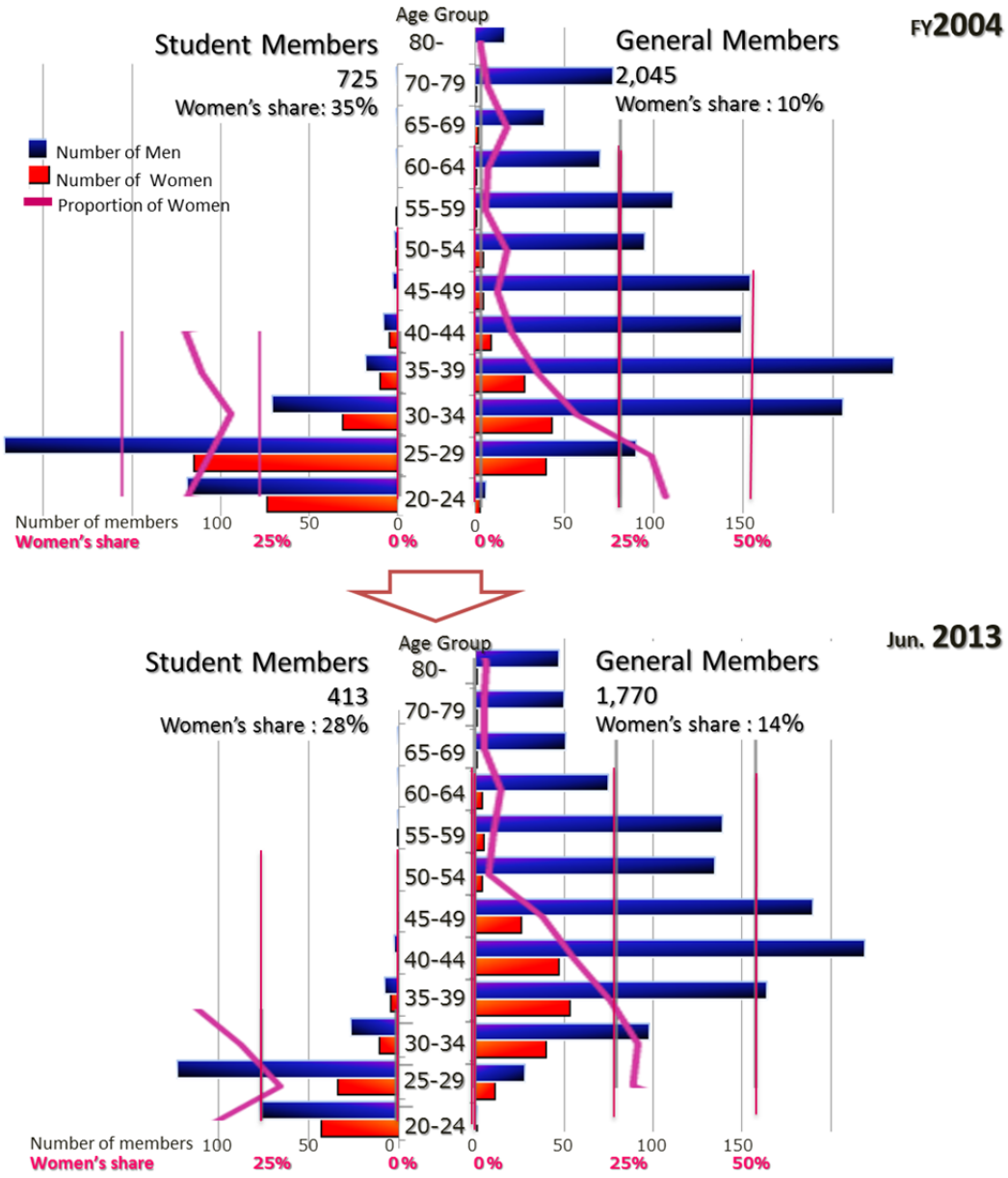

Figure 1: The proportion of women JFS members by sex, age group, and membership type

Source: Calculated using JFS member lists from FY2004 and June 2013.

Figure 1 shows the change in the proportion of women JFS members. The proportion of women was 16% in June 2013. This proportion is close to but a little bit higher than the average among all researchers in Japan. The proportion of women JFS members was reported to be 13% in January 2004 (Maruta, 2005), so compared with this, the proportion of women has increased slightly in the last 10 years.

The proportion of women among the general members differs markedly by age group. From the early 50s (with 3% women) and older in 2013, the proportions of women are obviously low. Among the younger age groups—from the late 40s (12% women) to the early 30s (29% women)—in 2013, the proportions of women increased gradually, and the proportions of women in the much younger age groups remains at 30% or so. Comparing these proportions in 2013 with those in FY2004, in FY2004 in the early 40s (6% women) and older age groups, the proportion of women was low overall. From the late 30s (11% women) to the early 20s (33% women) in FY2004, on the other hand, the proportions of women increased. The basic trends in FY2004 and 2013 are similar, and the changes seem to be the same for each generation; that is, for instance, the numbers for the women in their early 40s in FY2004 are roughly the same as those for the women in their early 50s in 2013. The figure clearly indicates that the proportion of women has been increasing mainly among the generation who are in their 30s and 40s in 2013.

3.1.2 The proportion of women students

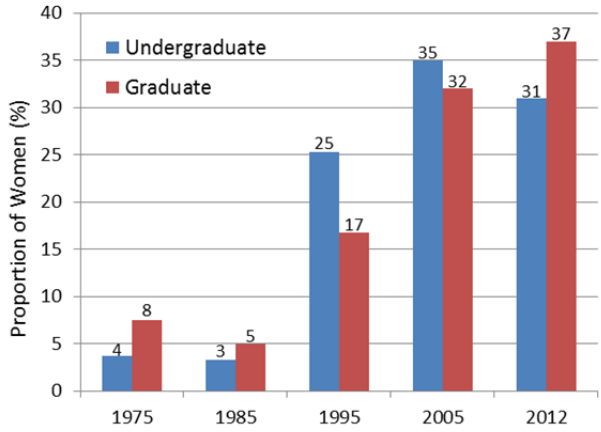

Figure 2: The proportion of women students in forest science courses at four main universities

Note: These proportions are the averages of the proportions from four main universities with forest science courses in Japan. The universities from which data were collected are the University of Tokyo, the Tokyo University of Agriculture and Technology, the Tokyo University of Agriculture, and Nihon University.

Sources: For 1975 to 2005 data, see Maruta and Ota (2006).

People in their 30s and 40s in 2013 are the generation who were students during the period in which the numbers of women students majoring in forest science rapidly increased in universities and graduate schools. Figure 2 shows when and how the numbers of women forest majors increased in universities. According to this figure, the proportion of women rapidly increased from 1985 to 2005. During this period, the change in the general proportion of women students at universities was not so significant (Cabinet Office, 2013 and MEXT, 2011). There was only a slight increase in the late 1980s, but there was no notable change from the 1990s onward. This means that the rapid increase in the proportion of women in forestry courses cannot be explained solely by the increase in the number of

women students at universities in general but specifically reflects an increase in the number of women students who willingly chose forestry as a major.

The increase in the number of women students, however, did not directly lead to an increase in the number of women researchers. According to Figure 1, among women in their 30s in FY2004, the generation in which the number of women students began to increase, the proportion of women who were general JFS members was lower than that of student members in the same age group. This seems to indicate that there could be some obstacles preventing women students from getting jobs as researchers. Among women in their late 20s in FY2004 and in their late 20s and early 30s in 2013, on the other hand, the proportions of women students and general women members are not very different. This seems to indicate that the obstacles have lessened for the later generations, and if that is the case, it can be commended as a significant improvement from the aspect of gender equality. During this period, some public research institutes and universities started to tackle the gender equality issue and provided support systems for women researchers. Some of them are currently implementing the active recruitment of women researchers. These changes are aimed at supporting the placement of young women as researchers.

3.1.3 Decrease in young members

The dramatic decrease in young members is a crucial issue for the future of forest research, although the proportion of women among the younger generations has been improving. The numbers of younger JFS members have been decreasing rapidly after peaking in the early 40s age group in 2013. In particular, among student members, the number of younger members dramatically decreased, by 43%, from FY2004 to June 2013.

Some possible reasons for this are the decrease in the number of students and the decrease in the proportion of students belonging to the JFS. The latter reason could be affected by the establishment and expansion of peer academic societies, such as environment- or ecology-related societies, in recent years. Recent students and young researchers now have many options of academic societies to belong to, and thus, the number who choose the JFS may possibly have decreased.

To examine the possibility of the former reason—the decrease in the number of students—the data from the survey conducted by MEXT are shown in Figure 3. The number of graduate students in Japan as a whole was stable or increased slightly from FY2004 to FY2012. In the case of graduate students in agricultural fields, including forestry courses, the number of students in master's courses increased an average of 10%, but the number in doctoral courses decreased over 10% in the same period (MEXT, annually published). Looking at the students in forestry courses in these data, the number of students in master's courses decreased 17%, and the number in doctoral courses decreased 40% in the same period. The last percentage is similar to the percentage of the decrease in the number of JFS student members.

As one reason for the decrease of doctoral students in agricultural fields, Misu et al. noted the uncertainness of the career path after completing a doctorate (Misu et al., 2010). The results of the analysis of the number of researchers by sector show that the number of researchers belonging to

public research institutes decreased by 7% from 2005 to 2009, whereas researchers belonging to universities decreased only by 1% and researchers belonging to private companies increased by 5% (Misu et al., 2010). General JFS members in September 2012 consisted of 39% university researchers and 35% public research institute researchers; researchers belonging to private companies were somewhat the minority. The high proportion of public research institute researchers characterizes the JFS's members, and the decrease in the proportion of public research institute researchers could affect the number of JFS members more greatly than the number of members from other research fields.

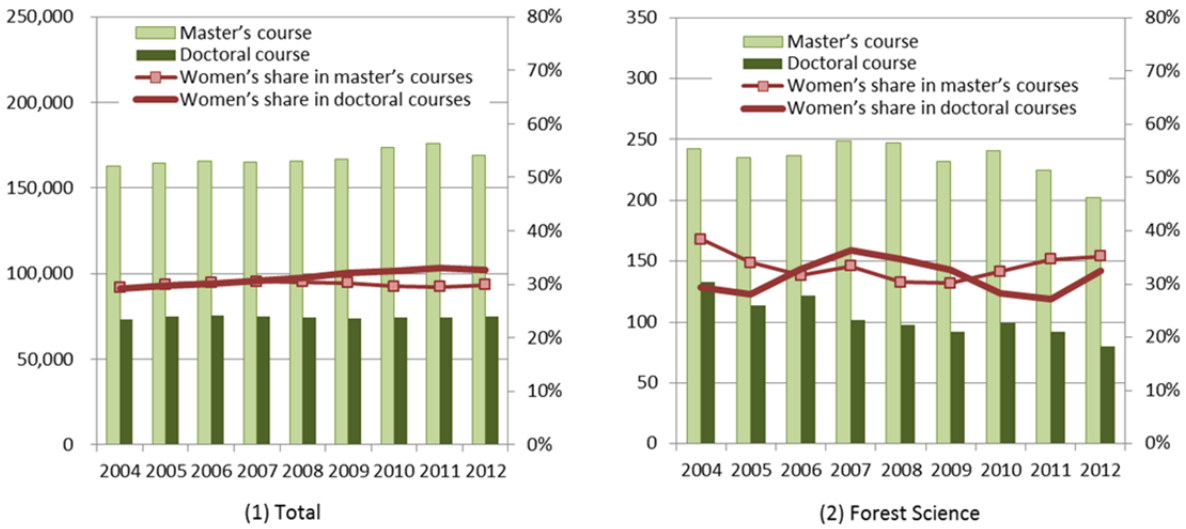

Figure 3: Enrollment in forest science courses at graduate schools

Sources： MEXT basic survey of schools (annually published).

3.2 Activities by Women Researchers

3.2.1 The proportion of women presenters at the annual conferences

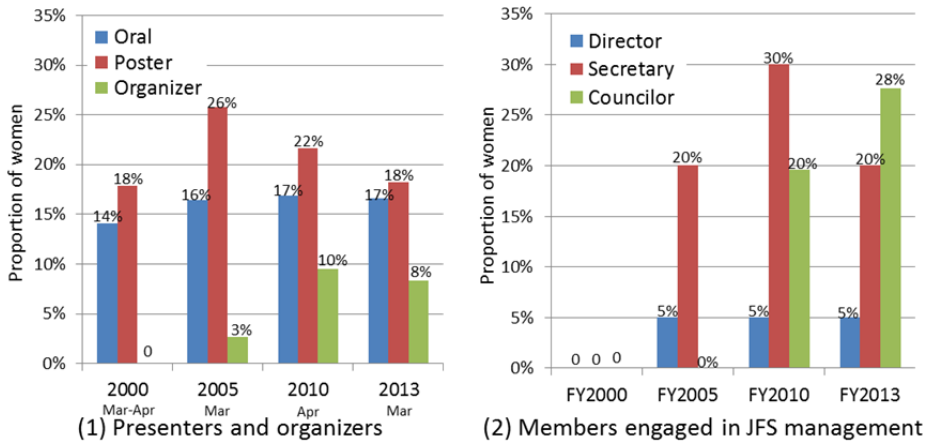

Figure 4: Activities by women in the JFS

Sources: For 2000 to 2010 data, see Miyamoto and Okochi (2011). The 2013 data come from the program of the 2013 annual conference and the member list of the JFS board in FY2013.

According to the data in Figure 4(1), the proportions of women presenters at the latest conference, in 2013, were 17% in the oral sessions and 18% in the poster sessions. Both of these are a bit higher than the proportion of women JFS members. The proportion of women head presenters of oral sessions increased from 2000 to 2010. Among the organizers of the theme sessions, on the other hand, there were no women in 2000. After that, the proportion of women increased to just below 10% by 2010. The proportion of women in their 40s and 50s, who are considered the main age group for organizers, is 11% in June 2013, and the proportion of women organizers remains just below this rate.

3.2.2 The proportion of women engaged in JFS management

The data in Figure 4(2) show that the proportion of women engaged in JFS management increased during this decade, whereas there were no women engaged in JFS management in FY2000. Among the secretaries, who engage in administrative work to support the directors, the proportion of women is similar to the proportion of women JFS members in their 30s. This indicates that in these age groups, not only men but also women members play active roles as secretaries in the JFS.

The most remarkable increase in this decade is seen in the proportion of women councilors. This was sparked by letters from the JFS board that were enclosed with the ballots for the election of JFS councilors. Since the election of JFS councilors for FY2006–2007, the vote for which was held in winter 2005, the JFS board has enclosed a letter of appeal for the consideration of promoting the selection of younger councilors and women councilors along with the ballots. After they began enclosing this appeal, the proportion of women elected as councilors sharply rose to roughly 20% and reached 28% in the latest election, for FY2012-2013; in contrast, there were almost no women councilors in the JFS before this. This can be recognized as a significant achievement stemming from a positive action by the JFS board.

In contrast to the case of councilors, most JFS directors, who are mainly elected from among the councilors, are men even now. JFS directors are typically in their 50s or 60s, and the low proportion of women directors could be understood as a reflection of the low proportion of women in these age groups. The expansion of the proportion of women in leading JFS positions such as director remains as a future issue to be addressed.

3.2.3 The proportion of women in government committees

Some leading researchers are involved in government committees as academic experts. The Forestry Policy Council established by the Ministry of Agriculture, Forestry and Fisheries (MAFF) under the Forest and Forestry Basic Act is the council that studies and deliberates on important matters concerning forest policy. The proportion of women council members has been relatively high. Already in FY2000, the proportion of women was 20%, and it reached 35% as of the latest member list for FY2013. Most of the women council members, however, are not forest researchers but representatives of nonprofit organizations for volunteer activities, announcers, journalists, or forest owners. The

council for FY2013 has seven women councilors, but among those, only one is a forest researcher.

The forest policy revision committees, on which members discuss measures for forest policy reform from February to November 2011, are also forest-related government committees. The proportion of women on these committees was 6%, 3 of 50 members, and this limited number of women members were a forest owner, a representative of a consumer group, and a writer, but none was a researcher. Many forest researchers are involved in the committee, and some of them are relatively young researchers, in their 30s or 40s. Compared with how the proportion of women in these age groups has increased the member selection process for this committee can be considered to be behind in terms of women's involvement.

As described above, activities by women researchers have surely spread in some areas, such as in conference presentations and JFS management, whereas in leading positions and in the policy-making process, the involvement of women researchers is limited at this moment. One reason for this could be considered a reflection of the low proportion of women among the older researchers.

3.3 Work-life balance of women researchers

As a reason for the low proportion of women in leading positions, many JFS members actually noted the low proportion of women among elder researchers according to the results of the survey conducted in 2007 (Figure 5). The reason that was most often cited, however, was the difficulties in work-life balance. This result indicated that the problem of balancing work and private life remains as a serious issue for women researchers still today.

The noticeable gap between the ideal number of children to have and the real number of children that people have can be considered an example of the struggle of women researchers with work-life balance. The results of the JFS member survey referred to above show that the real number of children women forest researchers have is only 0.5 on average, even among those in their early 40s, whereas the ideal number is two or three for most forest researchers, both men and women. Men forest researchers, on the other hand, have nearly two children on average in their late 40s. As a reason for the great gap between the ideal and actual numbers of children that women researchers have, more than half of women noted the difficulty for them of maintaining their careers as researchers while doing family work at the same time. Actually, the burden of family work, such as housework, child care, and elder care, is largely borne by women in general in Japan. The time spent on family work by Japanese men is reported to be at the lowest level on a global basis (Gender Equality Bureau, 2012). Among researchers, a similar situation can be observed. The survey by EPMEWESE reported that the men researchers rarely take child care leaves and even if they do, they most often take less than 1 month of leave, whereas women researchers take 6–12 months of leave at most (EPMEWESE, 2008).

Work-life balance is a serious issue for young researchers who are not only at the marriage and child-bearing age but also facing highly competitive circumstances for getting or keeping their positions. In a round-table discussion that JFS held as a session during the 2012 annual conference, some young participants complained of anxieties about their life plans, such as difficulty finding a period to have children, and many participants both male and female took a strong interest in those

issues (Miyamoto et al., 2012). Work-life balance is becoming a common issue for many researchers including men recently.

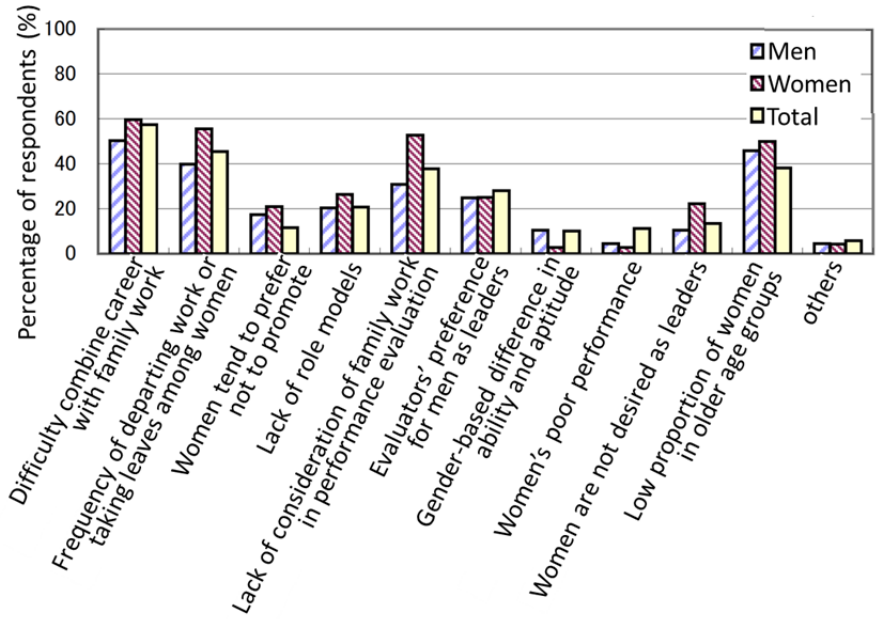

Figure 5: Reasons for the low proportion of women in leading positions (multiple answers)
Sources：JFS gender equality working group (2008)

4 Discussions and Conclusions

From the results shown above, the following two facts can be observed regarding improvements in this decade concerning gender equality among forest researchers in Japan: (1) the significant increase in the proportion of young women researchers and (2) the noticeable expansion of women researchers' activities in presenting at the conferences and in JFS management.

The following two areas, on the other hand, are noted as still needing further improvement: (1) the expansion of women researchers in leading positions and in the policy-making process and (2) efforts to address the work-life balance issue. Furthermore, it is additionally clarified through these analyses that the numbers of young researchers in the JFS have significantly decreased in this decade and the activation of the forest research field and of the JFS itself are a great challenge for the future.

Possible approaches to addressing the two challenges concerning gender equality noted above would be (1) affirmative action in recruitment and promotion as transitional measures before the generation changes and (2) improving the working environment to allow for various working styles in consideration of work-life balance, not only for women but also for men, not only for child care but also for elder care, and not only for younger researchers but also for researchers in leading positions. Through these actions, diversity among forest researchers could be promoted, and in that way, the field of forest research and the JFS are expected to be activated. Getting diverse perspectives, including with regard to gender, into forest research would be significant for this activation. Additional

efforts to activate forest research and promote the significance and importance of forest research to the public are also required to sustain forest research.

The JFS could contribute to these challenges by sharing information and appealing to the authorities concerned with the issue. Activation of forest research is definitely a crucial issue in which the JFS is expected to play a leading role.

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