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The Current Situation of Women Construction Workers and Policy Suggestions

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Contents

I. Introduction	1
1. Necessity and purpose of research	1
2. Research contents and methods	3
3. Bodies involved in this research	3
II. Overseas case studies on women construction workers	4
III. Gender analysis on construction workers' working environments	5
IV. Analysis of women workers' working environment	7
V. Analysis of policy demands to improve women construction workers' working environment	13
VI. Policy suggestions for the improvement of women construction workers' working environment	16
References	29

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I . Introduction

1. Necessity and purpose of research

- Construction work is traditionally an area of men's employment, and considered too hard for women to find and sustain a job. Despite the obstacles facing women entering the male-dominated construction industry, the proportion of women workers employed as temporary or daily workers in construction sector has been steadily increasing.
- Because women are generally allocated to jobs which require a low level of skill in the beginning, women are paid much lower even when they do the same work as men. Also, while men move up to higher level positions as a professional skilled workers, women frequently remain as assistants even long into their careers (Kim K. et al., 2018: 73-74).
- In the construction field, women workers are exposed to constant

sexual harassment and violence, while working alongside male workers or taking supporting roles for professional skilled male workers. Also, due to a lack of awareness of the inconveniences women face when making plans for the provisional facilities of a construction site, in many places no bathroom or shower rooms for women are provided (Park S., 2018: 63; Shin & Lee, 2016: 448).

- There are a significant number of women working as skilled labourers in the construction field, where they experience sexual discrimination, and yet women are completely excluded from the policy-making process.

- This study aims to explore the current situation and working environment of women employed in the construction industry, and analyse the kinds of sexual discrimination women construction workers experience in such a male-centred field of work. Further, an analysis is made on the process through which women enter the construction industry and develop their skills to maintain employment. Following this analysis suggestions are made for ways to support women entering male-dominant industries, for policy improvements, and for ways to improve working environments for women construction workers.

- Research questions
 - What process do women follow when they enter the male-dominant construction industry? What factors bring women to enter the construction industry?

- What kind of sexual discrimination do women experience in terms of wage, working hours, vocational training, promotion opportunities, working environment, career development, and so on?
- What demands do women employed in the construction industry make for policy improvements? What needs do women have for betterment of job opportunities, skill development, working environment; including wages, working hours, vocational training, safety equipment, facilities, child-caring, and so on?

2. Research contents and methods

- This study is composed of a literature review on the employment structure of the construction industry and women's employment therein, a review of overseas case studies of policies for women construction workers, the current gender composition in the construction industry, and the policy demands of women construction workers.
- In terms of research methods, as well as literature review and data analysis, a questionnaire and interviews were also undertaken.

3. Bodies involved in this research

- This research has been conducted by the research team of the Centre for Gender Impact Assessment at the Korea Women's Development Institute(KWDI), with consultations and assistance from experts on construction work and women's labour, the National Federation of Construction Industry Unions under the Korean Confederation of

Trade Unions (KCTU), the Korean Construction Industry Workers' Union under the Federation of Korean Trade Unions (FKTU), the Construction Worker Mutual Aid Association, and the Ministry of Gender Equality and Family.

II. Overseas case studies on women construction workers

- In order to lessen sexual discrimination in the construction field, governments in developed countries such as the US, UK, and Australia have established laws and runs programmes for women construction workers in cooperation with trade unions and local labour organizations.
 - The US government launched an initiative to foster women skilled workers through the Women in Apprenticeship & Nontraditional Occupations (WANTO) Act, enacted as a federal law in the early 1990s.
 - In the UK, a short term programme to experience work in construction aims to encourage women to get interested in the many jobs of the sector. Also, a programme has been run to connect women preparing for employment with women already working in the construction field.
 - In the US and Canada, trade unions and local labour organizations funded by the government have opened women-only job training programmes for construction craftspeople.

- The Australian government has set up a plan to support women construction workers and provides services such as job counselling, recruitment, and vocational training for women.
 - In the US and Canada working uniforms, safety shoes, and safety hats which are adapted to women's figures are provided so as to reduce the inconvenience that women working in the construction field experience.
 - The Canadian government include sexual harrassment as well as physical threats, discrimination, and bullying into regulations on safety in the operational field.
- As such, governmental support for women construction workers may contribute to improving the working environment - which can be hostile or even violent against women working in such a male-dominant field - towards gender equality. Also, when the government systematically runs programmes to support women construction workers, many construction women workers may be better protected from sexual harrassment and discrimination, and have opportunities to enhance the level of their skills in a safe working environment.

III. Gender analysis on construction workers' working environments

- This chapter aims to explore current situation of gender in employment of construction workers by using available construction industry employment data.

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- Firstly, while the number of women employed in the construction industry has been steadily increasing, the proportion of women employees is only around 10 per cent, which suggests that women's entry and participation in the construction industry remains very low.
 - The average age of women employed in the construction industry is 46.58 years, which is lower than that of their male counterparts; however, the age of women when they enter the industry is higher than men, and the period of employment is shorter.
 - In terms of employment status, the proportion of daily labourers is high for both women and men. However, amongst permanent workers the proportion of men is higher than that of women, and this trend is reversed for temporary workers.
 - In terms of wages, the average wage of women construction workers is less than that of men. This could be attributed to wage disparity due to the level of skill and qualifications, which leads to disparity by gender.
 - Considering facilities for construction workers, it appears that women have many difficulties due to lack of access to bathrooms, shower rooms, and changing rooms; and their reported level of satisfaction is low.
- In consequence, the number of women in the construction industry remains low, and they tend to be allocated to simple jobs. It can be predicted that the lack of facilities also leads to low levels of

job satisfaction.

- In order to stop discrimination against women and foster women in male-dominated working environments, it is necessary to have specific policies to support women. Also, there is a need for vocational training programmes and recruitment programmes for young women, in order to enhance the level of women's skills.
- Since current official statistical data does not give a full picture of the current situation of construction workers by gender, it is difficult to make a gender analysis of the construction sector. Hence, it is necessary to include gender segregated statistics of construction workers in the official data.

IV. Analysis of women workers' working environment

- This chapter contains the results of questionnaires on the employment situation, working conditions, work experience, and policy demands of 507 women construction workers. Firstly, on the question of the employment process and their motivation to work in construction field, the most women workers obtained work in the construction field through personal networks, and their motivation was financial need.
- 80.3 per cent of respondents selected personal network as their employment channel. Similarly, 60 per cent of respondents selected the motivation for employment as due to financial need: to make a living or to get higher income.
- Prior to their employment in the construction field, respondents

reported working in the service sector, in the manufacturing sector, as self-employed, and so on. Only 11.8 per cent of respondents said that construction work was their first job, which means that most women construction workers have experienced work in other sectors before.

- Secondly, looking at experience of vocational training programmes in relation to construction, less than half of respondents (46.0%) have said that they had vocational training before employment. This means that women workers are likely to be initially employed without capacity or skills relevant to construction work.
 - Most of those who had vocational training received it from private institutes or vocational schools run by trade unions. They found out about the institutes providing such vocational training mostly through personal networks (70 per cent).
 - Of those respondents who had not had vocational training prior to employment in the construction field, 60 per cent reported that the reason for lack of training was because they don't know when and where it was available and because they could not financially support themselves during the training period. This suggests that women have difficulties accessing information on vocational training programmes related to construction and it is necessary to improve communication channels on the institutes of vocational training, so they do not have to rely on personal networks.
 - The proportion that respondents having obtained certificates (professional qualifications) on construction work is only 20.5

per cent, and on average they have 1.5 certificates. Respondents who have a plan to obtain certificates mostly prefer to have the training provided by vocational schools run by women's organizations such as the New Job Centre (Sae-il Centre) or run by trade unions (63 per cent), with 19.3 per cent indicating preference for private institutes. In particular, the reason that women workers have a preference to be trained in vocational schools run by women's organizations seems to be due to the expectation that they may be more aware of the realities women workers face and more considerate of women's physical features, and the opportunities to build networks amongst women.

- Thirdly, regarding the working environment of women construction workers, the facilities provided are insufficient in general and safety equipment is difficult to use in particular. Furthermore, women workers are exposed to risks of illness such as musculoskeletal system disorders, cystitis, and dermatitis.
- About 85 per cent of respondents are working in large-scale construction and plant fields. When asked the number of days they have worked over the last one year, respondents report working 257.5 days on average. In terms of work contract, 80.3 per cent of women construction workers report having a written contract. In response to a question about their level of social insurance coverage, 80.9 per cent report that they are covered by the retirement aid programme for construction workers, 78.1 per cent by employment insurance, and 65.9 per cent both by national pension (for company employed) and health insurance (for company employed).

- As for a question on the current facilities for women in the construction field, 66.5 per cent report having access to a women's bathroom without a sink, 33.7 per cent have a women's lounge, 31.8 per cent have women's bathroom with a sink, and 8.5 per cent have no bathroom or lounge access. As a whole, facilities for women workers in the construction sector are poor.
- Considering the provision of safety equipment, 56 per cent of respondents say the kits provided are uncomfortable for them to use. When protective kits are uncomfortable because they are the wrong shape, old, or broken, it can cause accidents which threaten the safety of women workers and lead to illnesses such as musculoskeletal system disorder. This requires urgent improvement.
- In response to a question on illnesses experienced during their employment, musculoskeletal system disorder is the highest reported ailment with 42.5 per cent, followed by cystitis with 19.0 per cent, and dermatitis with 12.8 per cent. In particular, illnesses such as cystitis and dermatitis may have been caused by the lack of facilities where women workers have access to the use clean water for washing or showering, which suggests a need for the expansion of facilities for women.
- Fourthly, considering experiences of sexual discrimination and harrassment, a large number of women workers report having had such experiences.
- In terms of sexual discrimination against women, 31.2 per cent of respondents have experienced discrimination in wages, 23.3 per cent discrimination in recruitment, and 17.2 per cent

discrimination in extra work allocation. Women tend to be allocated jobs which require a low level of skills, so that they are likely to remain as unskilled labour regardless of the length of their career. This leads to discrimination in wages and makes it difficult for women to have opportunities to gain skills.

- In terms of sexual harrassment, 25.6 per cent of respondents report harrassment such as obscene jokes and physical contact without agreement. The frequency of experiences varies: 48.5 per cent of respondents who have experienced sexual harrassment report one to three such experiences, and 34.3 per cent report more than ten. These results suggests that sexual harrassment against women occurs repeatedly. As for the types of sexual harrassment, verbal harrassment is the most common at 95.0 per cent, and as for the place where the harrassment occurs, the construction site is the highest at 76.9 per cent. This suggests that sexual harrassment occurs in open spaces with many people, which demonstrates that there is a lack of awareness that such harrassment is outlawed. 51.5 per cent report sexual harrassment by leaders of their occupation or team leaders, and 50.0 per cent report sexual harrassment by coworkers. In terms of response to sexual harrassment, only 20.1 per cent reported it to a manager or to the company and had counselling, whereas 70.1 per cent said they did not react and tried to endure it. That is to say, a large number of women did not feel able to take action against harrassment.
- Only 26.2 per cent of respondents report that there is a designated unit (or person) with which those who have

experienced sexual harassment can have a counselling within the company. Also, only 41 per cent of respondents have had education about preventing sexual harassment. As sexual harassment is an issue which keeps women from entering the construction field and from sustaining their careers, it should be designated as an industrial safety issue, and requires institutional measures to prevent it and protect workers when it does occur. Also, there is a need for regular monitoring of the issues of sexual harassment and discrimination in the construction field in order to take proactive measures to address them.

- Fifthly, examining how respondents foresee the development of women's careers in the construction field, 78.5 per cent of respondents predict that there will be greater numbers of women entering the construction industry in the future.
 - The reasons given for such prediction are because they can make greater income (30.2 per cent), the working environment of the construction industry is improving (29.1 per cent), and they can start work without particular skills (22.6 per cent).
 - The question of how satisfied women construction workers are about their occupations, graded on a scale of one to five, resulted in an average of 3.40. The most common reasons for satisfaction were because the level of wages is higher than other jobs (50.7 per cent), and because they can work within fixed working hours and are paid for overtime work (16.7 per cent). In contrast, the reasons for dissatisfaction include the lack of welfare for workers (36.5 per cent), low level of wages in comparison with the

intensity of labour (28.8 per cent), and the insecurity of jobs due to repeated unemployment (13.5 per cent).

- Lastly, in response to a question on what policy respondents think is most necessary in order to foster women's employment in the construction sector, 34.5 per cent say it is necessary to expand training programmes in order for women to obtain new skills, 22.7 per cent say education to prevent sexual harassment and discrimination against women should be strengthened and expanded to all managers and workers, and 17.6 per cent say there is a need to provide women with more facilities, such as women's bathrooms.
- As seen in the results of the questionnaire, it is necessary to expand education programmes where women can obtain construction-related skills, in order to increase and maintain women's employment in the construction sector, and also action needs to be taken to prevent sexual harassment and discrimination and to make a support system to address it. In addition, protective gear which is suitable for women workers needs to be developed and provided.

V. Analysis of policy demands to improve women construction workers' working environment

- This chapter examines the working environments of women construction workers and their policy demands in detail, and also considers the features of women's work and sex discriminative practices caused by the predominance of male workers in team

leader positions. Research contents are focused on how women construction workers enter into the construction industry, their working conditions, education and training, sexual discrimination and harrassment, facilities and protective kits, and reported inconveniences and demands for improvement.

- The results of interviews on demands for improvement suggest that it is necessary to advertise and provide more information to inform women of the wage level in the construction industry and common job descriptions, in order to help women make a choice of occupation.
- In comparison with other industries where women are present, the construction sector can have some advantages such as the relatively high wage and regular working hours. These advantages encourage many women to start working in the construction industry, and yet the employment of women in this industry is limited by reliance on personal networks. In order to enable more women to enter the construction industry, institutes of job recruitment or vocational training need to offer opportunities and related information so that women can obtain the necessary capacity and skills for employment.
- Construction workers can have opportunities to gain skills while they work in the field. However, most women workers are allocated simple jobs, so that they have little opportunity to learn and improve their skills. In order for women construction workers to improve their level of skills in the long term, it is necessary to offer vocational training and make information on

obtaining certificates more widely available. In particular, it is necessary to support those women who have financial difficulties by providing education opportunities with financial support. Further policy supports are required to lead those who have had such education into stable employment.

- In order for women to maintain their career and improve their skills after they enter the construction industry, efforts should be made to provide women-friendly environments.
- It is important to build a network of women workers to provide mutual support so that they are not frustrated by the male dominant environment after entering the construction industry. Furthermore, changes to the environment are necessary to give women more access, such as technological innovation to reduce the weight of machinery, and education programmes so that women can develop their careers and undertake roles in management as well as supportive roles.
- Action needs to be taken to prevent sexual discrimination and harrassment. Above all, there is a tendency to within the industry to undermine women's capability rather than objectively assess their skills, and there are cases where this leads to delays in employment or a reduction of wages. In order to stop discrimination against women, objective and clear criterion in the process of recruitment and wage calculation are necessary. Also, in order to challenge practices which belittle women or undervalue women's labour, an emphasis should be placed on education of gender equality. In particular, education to prevent

sexual harassment is essential as well as punishment against perpetrators when it does occur.

- Lastly, as there are increasing number of women in the construction field, women-only bathrooms, changing rooms, and lounges should be provided.
 - Most facilities are provided only or mainly for men, and there is a high demand for gender segregated facilities for women to give them a safe environment at construction sites.
 - Protective kit such as hats, shoes, and gloves, are made to a male standard which make them difficult for women workers to use and hence become a safety risk. Since women and men have different physical features, not only the size but also the shape of kit suited to women's body figures should be considered when they are provided.

VI. Policy suggestions for the improvement of women construction workers' working environment

- Enactment of the Unusual Jobs for Women Act (Provision)
 - In the US since the 1990s, two acts have been implemented which help women enter into industries where they make up less than 25 per cent of the workforce. In order to increase women's participation in these areas the Women in Apprenticeship & Nontraditional Occupations (WANTO) Act was enacted.
 - This act was an acknowledgement that women have a desire to

work in male-dominated industries, and when women take these nontraditional jobs they face obstacles due to male-centred culture and sex discriminative practices.

- Accordingly, the government gives support for women workers in these sectors to develop and enhance their skills, for employers to employ women in nontraditional positions, and provides financial aid for trade unions and local organizations to offer vocational training to women.
- The results of the questionnaires surveying women construction workers in this study show that most respondents are financially responsible for their families. Most have experienced work in the service and manufacturing sectors with low wages beforehand, and entered in the construction industry as they know that they can get a higher rate of pay. Thus, they tend to be content with the level of wage. And yet, those who have participated in the interviews have complained that there are very few opportunities for women who are interested and want to be employed in the construction industry to learn and enhance their skills, and requested that vocational training should be systematically made available and that the government should provide proactive support.
- In order to help more women enter male-dominanted sectors such as the construction industry, and thereby alleviate occupational gender segregation in the labour market and reduce the wage gap between men and women, it is necessary to enact an independent legislation to support women to participate in nontraditional jobs.

- Fostering construction craftswomen and expanding training programmes to enhance women's construction skills
 - Development of education programmes to foster women lecturers in the construction sector
 - According to the questionnaire, many respondents expect that more women will enter the construction field in the future. The reasons include the higher wages (30.2%), and that working environments in the construction industry are improving (29.1%). What is interesting is that while 45 per cent of respondents have said that they plan to obtain certificates relevant to the construction industry, they prefer to learn in the vocational schools run by women's organizations like Saeil Centre (35.5%) and by trade unions (27.6%), rather than private institutes (19.3%).
 - According to interviews, women construction workers tend to prefer to be taught by women lecturers, because practical exercise, which involves frequent physical contact with lecturers, takes up a large proportion of construction skill education. Also, since most apprentices are men, women tend to be given relatively fewer opportunity to practice. Therefore, it can be expected that providing a space for women who are interested in employment in the construction industry to meet together, and providing training by women lecturers with experience in the sector, will make the training more effective. Once women skilled workers are employed as lecturers on training courses, they can also act as role models for other women. Furthermore, in order to get more women interested in the construction sector, educational institutes should produce publicity, such as brochures, which include

pictures of women workers in the construction field, such as welders and carpenters.

- The UK government has developed a women-only two day course to experience brick laying. On the first day, women learn to lay bricks in hands-on training, and on the second day a workshop is run where a skilled women worker gives diverse advice on career and job descriptions in the construction industry. In the US, the government has been running a separate training programme in cooperation with construction trade unions and local organizations to foster skilled women workers such as welders and plumbers. The California State Government also supports many women construction workers employed in public sector construction programmes, such as highway building, or those in contracts with the state government, as a way to foster women workers.
- Developing training programmes to build the capacity of women construction workers
- It is known that more than half of women in the construction sector are general or unskilled workers. However, according to the questionnaire, 16.6 per cent out of the roughly 500 respondents are working as technicians, and 12.0 per cent in semi-technical positions. Also, women working as team leaders or unit leaders account for 9.1 per cent of respondents. These women say that they want to continue to work in the construction industry, and that although it is physically challenging, the working environment at the construction field have improved compared to the past. Within the sector, women tend to have a preference for jobs such

as carpenter, heat insulation worker, plaster worker, paper hanger, tiler, and operator of heavy equipment like a tower crane.

- In order for women to learn skills and enhance the level of skills in the male dominant construction field, there is a need for new programmes, for example, a weekend course of capacity-building programmes for women in semi-technical positions in the industry. Leadership programmes are also needed in order to enable women technicians to take a leadership roles within a unit or team. Amongst participants in the interviews for this study, there were women leaders in carpentry and steel work who state that they have difficulties in learning new techniques and enhancing skills, because the work is led by men and carried out in a male-centred manner. It is necessary to find ways to support women technicians in the construction industry so they can undertake managing roles.
- In the UK, there is a scholarship for women participating in training courses for skilled workers, which is designed to foster craftswomen in the construction industry. In Australia, the Women in Construction Strategy has been established to systematically foster skilled women workers and support women's employment in the sector.
- Inclusion of an item to increase women's presence into the criteria for selection and assessment of vocational training institutes
- The Ministry of Employment and Labour(MOEL) annually selects vocational training institutes for construction craftwork through Construction Worker Mutual Aid Association(CWMAA). This could be used to provide better opportunities for capability-building

and skill enhancement for construction craftswomen. Incentives could be offered to institutes which recruit a certain number or proportion of women trainees. As a five-point incentive is currently given to recruitment of young adults and the middle-aged, a similar incentive system needs to be applied to women (Kim, Kyung-Hee et al., 2018: 92).

- The CWMAA is focused not only on training for capacity-building, but also on the fostering of skilled workers. There is a need for training programmes and curricula which help women without basic knowledge on construction work complete the training courses offered to both men and women.
 - As seen above, proactive support should be provided to enable women employed or seeking employment in the construction industry to learn skills and have adequate training, so as to improve their working conditions in the male-dominated industry. Also, a gender perspective should be incorporated into training courses of capacity-building and programmes fostering skilled workers, so as to reduce the disparity in skill development between men and women, which worsens the gender wage gap.
- Reduction of sexual discrimination in employment practices and education on prevention of sexual harrassment
- According to the questionnaire, many respondents have experienced sexual discrimination; in particular wage discrimination was the most common form of discrimination reported (31.2 per cent), followed by discrimination in recruitment (23.3 per cent), and discrimination in the allocation of extra work (17.2 per cent).

Women who have entered the construction industry have experienced that they struggled to find employment or were allocated to simple tasks such as cleaning because they are women, and hence they have had little chance to build up their skills. Despite the fact that women undertake similar work, women experience significant wage discrimination because their work is generally less physically demanding than that performed by men.

- The first clause of Article 8(wage) in the Act to Support Gender Equality in Employment and Work & Family Balance stipulates that employers should provide equal pay to equal value work within the business. The criteria of equal value work are determined by task performance, such as skill, effort, level of responsibility, operational conditions, and so on. This rule of equal pay for equal work needs to be enforced in order to prevent women working in the construction industry experiencing wage discrimination.
- According to the results of the questionnaires, 26.4 per cent of women respondents have experienced sexual harrasment, and among them 34.3 per cent have had ten or more such experiences. Although women construction workers report verbal harrasment (94.0%), physical harrasment (35.8%), and ogling (9.7%), most of them were unsure of how to respond, and hence the most common response was just to endure it (70.1%). In terms of the perpetrators of the sexual harrasment, they were named as leaders of operational units or teams (51.5% of respondents who experienced harrasment), co-workers (50.0%), subcontract managers (23.9%), and main contract managers

(17.2%), which suggests that women in the construction industry are working in environments where they are exposed to sexual harrasment from male managers, unit and team leaders, and co-workers.

- Male workers may speak and behave in a way which causes sexual harrasment against women at work, whilst being unaware that it is sexual harrasment. Therefore, education to prevent sexual harrasment is absolutely necessary in male-dominated construction industry, in order to create an environment where women and men can work together. Targets of such education should include both men and women workers, including managers. According to Article 13(Education to Prevent Sexual Harrasment in the Workplace) in the Act to Support Gender Equality in Employment and Work & Family Balance, it is stipulated that employers must offer education to prevent sexual harrasment in the workplace (henceforth sexual harrasment preventive education) in order to prevent sexual harrasment in the workplace to create a safe working environment for workers. However, since the majority of construction workers are temporary and daily workers, and the Act to Support Gender Equality in Employment and Work & Family Balance is usually not applied to these workers, it is easy for them to miss the sexual harrasment preventive education that most employers provide only once a year.
- Article 3 of Enforcement Ordinance of the Industrial Health and Safety Act (Preparation of Measures to Raise Awareness of Health and Safety) stipulates that the Minister of the MOEL

should prepare measures to promote education on health and safety, create publicity, and encourage citizens to carry out independent activism, in order to raise awareness of health and safety issues.

- Sexual harrassment in the workplace occurs due to workers' respective status and roles, and incidents create disadvantages in the workplace as well as inflicting bodily and mental pain onto women workers. Accordingly, there has been a case where sexual harrassment has been regarded as an industrial accident in South Korea (Choi, 2019: 113). In this regard, sexual harrassment preventive education should be included in education on health and safety in order to root out the sexual harrassment common in the construction sector. Also, it is necessary for employers to put up notices about how to prevent sexual harrassment and violence, and how to report it, at sites where construction workers frequently meet.

□ Provision of gender-segregated facilities and protective gear

- According to the results of the questionnaires, a high proportion of women construction workers find that facilities and protective gear, such as hats and shoes, are made with to a male standard and are therefore uncomfortable. In terms of gender-segregated facilities, the most common is a women's bathroom without a sink (66.5 per cent), while the proportion of respondents with access to women's changing rooms or women's shower rooms is very low (14.6 per cent and 9.5 per cent, respectively). During interviews, interviewees made strong demands that when it is not

possible to provide a separate shower room for women, a sink and a simple shower needs to be built so as to enable women workers to wash after work, particularly at dusty construction sites during the summer. Also, women construction workers raised complaints that often there is no space for women to change clothes or to take a rest, since there women's changing rooms or lounges were not provided. Article 4 (Duties on Installment of Employment-related Facilities) in the Enforcement Ordinance of the Act to Improve Construction Workers' Employment states that constructions that costs more than one hundred million won must build or enable use of facilities, such as toilets, canteens, and changing rooms (when several construction businesses are involved, the associated costs should be shared among them in line with the total estimated construction costs). However, such facilities are rarely provided for women and rarely consider gender, worsening women's working environment.

- The requirement that gender be considered when providing facilities at construction sites should be included in the relevant regulations. Similarly, Article 4 of the Enforcement Regulations of the Act to Improve Construction Workers' Employment should specifically state that gender should be considered when building facilities. For instance, there needs to be guidance to build lounges separately for men and women or to enable women and men to use them separately, when men and women work together.
- More than half of women construction workers (56.6 per cent)

participating in the questionnaires reported that the protective gear they are provided with is unsuitable. The most reasons for this is that the protective gear does not fit them (57.4 per cent). In the countries like the US, women working in the construction sector are provided with personal protective clothes(PPC) and personal protective equipment(PPE) designed specifically for women. These kits are developed and supplied to women construction workers are because unsuitable PPC and PPE not only threaten women workers' safety, but also have a negative impact on performance. Women workers who have to wear safety shoes bigger than their feet suffer difficulties when they go up and down stairs or ladders, and also the front of their feet may be inadequately protected. Thus unsuitable protective gear can cause accidents and a loss of productivity, which may create a vicious circle which undermines recruitment of women workers.

- Protective gear which is unsuitable to women may give a wrong impression that women are unable to undertake their assigned tasks and hence can reinforce gender stereotypes which are hostile to women. In interviews, it was found that many women whose feet are small feel uncomfortable when wearing safety shoes designed to a male body standard. In order to encourage women to become skilled construction workers, the current male-biased protective gear - which make women feel uncomfortable, threaten women workers' safety, and disturbs women's work - need to be improved.

- Gender education for job counsellors and systematic support for women construction workers

- The majority of women construction workers taking part in the interviews learnt construction work through relatives and acquaintances. In order to alleviate the occupational gender segregation in the labour market, there should be more pathways for women who are interested in male-dominated occupations, including the construction work, to enter the relevant sector. If job counsellors have stereotypical ideas of occupational gender segregation, they may be reluctant to recommend construction work, which is regarded as men's job, to women. Rather than simply giving women advice on how to get employed in traditional women's sectors, job counsellors should inform them of a wide range of occupations from a gender perspective, so as to help plan and prepare for a job which fits their aptitudes, and where appropriate introduce skill training related to women's employment in the construction industry. In order to do so, training programmes for job counsellors should include education to enhance awareness of gender and gender equality.
- Some interviewees in their thirties and forties, who experienced discontinuity in their career after marriage and giving birth, obtained certificates of construction craftwork by funding their own training at private institutes, and others learnt skills by registering at construction-related vocational training institutes. Also, one interviewee obtained a construction-related certificate and got employed in the sector after being disappointed with the reality of low pay and long hours in her first job in the service sector while in her twenties. Due to changes in the social environment, there is an increasing tendency for women in their twenties and thirties to want to challenge themselves and learn

skills in sectors traditionally regarded as exclusively jobs for men. However, policies related to construction work have not yet recognized this reality and embraced the demands of women construction workers. Therefore, in order to improve the gender equality of policies related to construction work it is necessary to undertake a special gender impact assessment and analyse the diverse factors that hinder women from entering the construction sector, and also to find ways to foster skilled women workers and support their employment.

- A grade system for skilled construction workers got a legal basis in the reform of the Act to Improve Construction Workers' Employment on 27th May 2021. In this system, the current skill grades (assistant, semi-technical, and technical) have been converted to a new grade system (preliminary, middle, advanced, and expert), and differential wage system is applied to each grade. Further, the grade is now determined with consideration of work experience based on the database of employment insurance and the CWMAA, certificates, completion of training programmes, and so on. The previous grade system for skilled construction workers received criticism by skilled workers that their skills were not recognized. It is therefore necessary to ensure that the new system provides a positive support to women construction workers in which their skills are recognised and that they have access to education and training. Systematic support should be made to enable women working in the construction field to become skilled workers and to better participate in this male-dominant high-wage sector.

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