Neglected Rural Women: Comparative Study on the Regional Differences of Agricultural Feminization in Mainland China

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**Abstract**

The main objective of the thesis was to analyze the structure, distribution, and impact of women farmers who have been neglected for a long time in the agricultural development of mainland China based on the national population census data from 1982 to 2020. Findings showed that the proportion of female agricultural labor force in 24 regions increased to varying degrees from 1990 to 2010. Areas where the distribution of female agricultural labor is relatively densely distributed largely overlap with cotton planting and growing areas and commodity grain bases, and nearly 1/4 of the areas have more female farmers than males. The feminization of agricultural labor force in China compared with developing regions of Latin America, Africa, and South Asia, has special because of balancing the relationship between rural women, rural families, and agricultural production and maximizing the economic efficiency of farmers during the transition period. The article recommends, in the promotion of rural revitalization
strategy, China needs to actively integrate gender awareness, cultivate more female elites in agricultural technology, marketing, and management, giving play to the “super half effect” of rural women in cultural inheritance.

Keywords

agricultural feminization – regional distribution difference – gender awareness – rural women's development

Introduction

With the migration of rural labor to cities, a new social differentiation has emerged in rural China. In traditional farming areas where the endowment of agricultural natural resources is not conducive to mechanization, the allocation of agricultural production labor is gradually showing the phenomenon that agricultural production and agricultural labor are increasingly undertaken and completed by rural women, that is, the phenomenon of agricultural feminization.1,2

Since 2009, the Food and Agriculture Organization of United Nations (FAO) and the World Bank (WB) have been paying more attention to the feminization of agricultural labor force in developing countries such as Asia, Africa, and Latin America, calling for attention to the economic contribution and unequal treatment of women in agricultural development. The Center for Agricultural Policy Research of the Chinese Academy of Sciences also issued a series of research reports on the feminization of agriculture in mainland China around 2010, discussing the existence of the feminization of agriculture in mainland China and its practical impact.

However, the research results have not attracted the attention of the society on the gender value of female farmers. Throughout the more than 40 years of China’s rural reform, China’s female farmers have been “hidden” in the modernization of agriculture and rural areas. For the first time, most Chinese

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female farmers entered the public view, but in the way of “left-behind women’s issues.” That is to say, for a long time, “problem orientation” has been the main perspective for studying the development of rural women in China, and the contribution of Chinese female farmers in agricultural development has not been recognized by society.

In 2014, Professor Tamara Jacka of the Australian National University first proposed to pay attention to the initiative and development contribution of left-behind women in rural China. She argues that current research is dominated by urban ultimate teleology, which sees young men and women who go to cities as agents of development, while women, children and the elderly left behind in rural areas are labelled as “left-behind” in a clearly derogatory sense and as “vulnerable groups”. As a result, the theoretical perspective of the study of rural women in China has gradually changed from the initial “problem orientation” to “value orientation” and “development orientation”. The importance of rural women in China to economic and social development has been re-emphasized, and their positive role in agricultural development, grassroots governance, village stability, and family development and their unpaid labor contributions have gradually been recognized.

Main objectives of the thesis were to focus on three issues by using census data, economic development data, and agricultural production data. First, the historical changes of gender structure and regional distribution characteristics of the agricultural labor force were depicted. Then, factors affecting regional distribution of the gender structure of the agricultural labor force were explored. Moreover, the particularity of the feminization of the agricultural labor force and its consequences was compared and analyzed, as well as countermeasures and suggestions for the gender value of female farmers in the promotion of rural revitalization strategy were offered.

1 Literature Reviews and Question Instructions

The phenomenon of agricultural feminization in the process of urbanization in Chinese Mainland is the direct consequence of the gender differentiated flow of rural surplus labor. Rural women do not have an advantage in non-farm mobility because of their lower level of formal education. To find a balance between “mobility” and “stay-behind”, most rural families have adopted a rational division of labor among “male workers and female farming”, which is “small cost and large benefit”. Meanwhile, the reform of agricultural management
system and the transformation of agricultural modernization provide opportunities for women to farm, so many rural women of working age have become the leading providers of nominal household agricultural production.3

According to the census data, the proportion of women in agriculture labor in 1982, 1990, 2000 and 2010 was 46.24%, 47.48%, 48.57%, and 49.22% respectively, and increased by 2.98% in the past 30 years.4 The agricultural labor force feminization tendency already appears at the quantity structure level of the labor force. However, from 2010 to 2020, the proportion of women in the agricultural labor force in Chinese Mainland has significantly decreased. According to the 2020 census, female agricultural labor accounted for 46.41%, 2.81 percentage points less than that in 2010, and basically returned to the level in 1982. Some studies have used the agricultural census data from 1996 to 2016 to analyze the changes in the gender structure of agricultural labor in Anhui Province and obtained a similar trend.5 Although the scale of female agricultural labor force is still huge, their proportion is gradually declining, and rural women are withdrawing from agricultural production.

So, what is agricultural feminization? For all we know, the feminization of agricultural labor force is not new recently. Chinese female scholars, such as Huang Xiyi (1990),6 Meng Xianfan (1995),7 Gao Xiaoxian (1994),8

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Tan Shen (1997), and Jin Yihong (1998, 1999), have paid attention to the economic transformation of rural women and discussed directly or indirectly the feminization of agriculture in mainland China since the late 1980s. The connotation, causes, consequences, and trends of the phenomenon were analyzed, which laid the theoretical foundation for the study of the agricultural feminization for more than 20 years.

From the perspective of the influence mechanism of the feminization of agriculture in mainland China, there are two different viewpoints. One point is that the feminization of agricultural labor restricts the personal development of rural women, and the pattern of separation affects the stability of families. Female farming also threatens food security, reduces the level of agricultural management, and hinders the modernization of agriculture. The divergence of another point is mainly concentrated on the level of agricultural development. It is generally believed that the productivity of rural women is not inferior to that of men. Feminization has not yet had a significant negative impact on China's food security and agricultural

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Judging from the influence of the feminization of agriculture in other developing countries, researchers focus more on the development of rural women themselves. In sub-Saharan Africa, rural women play a crucial role in agricultural production and food security. A study of the feminization of agriculture in six countries in sub-Saharan Africa shows that just because rural women have decision-making power in small-scale farming, it does not mean they are empowered. At the same time, the increase in rural women's production decisions has been accompanied by increased responsibility for production, which does not improve their well-being in the long run. Rural women in South America also play a key role in agricultural production and food security.

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but their sustainable livelihoods are not ideal. Deere, an American scholar, pointed out that the occupation they are engaged in is still a weak industry in the non-agricultural industry, women’s rights and interests are still not well protected, the wage income is still hovering at the lowest level in the region, and the family status and social status are still not fundamentally changed.\(^{29}\) That is to say, in either Africa or South America, the feminization of agriculture cannot be seen as a sign of women’s advancement.

In fact, the feminization of agriculture has been studied even longer than the more common problem of left-behind women. However, the heat, depth, and breadth of the research are not as good as the latter. Increasingly, research has confined the feminization of agricultural labor, which is considered as a branch or consequence, to the problem of left-behind women. It has not been investigated from the perspectives of rural institutional changes, production methods transformation and domestic labor gender division. The typical feature is that women farming is often seen as a problem rather than a resource.

Moreover, the area comparative approach has rarely been adopted into the research of agricultural feminization. The extent and causes of female agricultural labor deposition are also different due to differences in economic development, resource endowment and production methods among regions.

Considering the implementation path of the rural revitalization strategy in mainland China, most of the research is centered on rural systems, industries, ecology, and culture but rarely on people at present. Reviews show that the focus is on rural institutional innovation, ecological environment governance, cultural prosperity as well as urban-rural integration and development at the rural level;\(^{30,31,32}\) on agricultural modernization, structure optimization and three industries integration at the agricultural level;\(^{33,34}\) and on the cultivation

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of new professional farmers and the optimization of non-agricultural transfer at the peasant level.\textsuperscript{35,36}

It is worth considering that how to play female gender advantages in the implementation of rural revitalization strategy and how to create rural governance, agricultural production, and management model in the case of the larger-scale female agricultural labor force and uneven regional distribution.

This study is mainly devoted to analyzing the changes in gender structure in the agricultural labor force and the characteristics of its regional distribution and comparing the particularity of the way and impact of rural women's participation in agricultural labor in mainland China, which will lead to reconsideration of rural women's gender value, gender dividend and its realization process in the new period.

2 Historical Changes of Gender Structure and Regional Distribution Characteristics of the Agricultural Labor Force

2.1 Data Sources and Statistical Caliber

Agriculture is a multi-category term, so the definition of the agricultural labor force is not uniform in different studies. The agricultural workforce is only referred to as the crop labor force in some studies. For example, Yuan Xin (2015)\textsuperscript{37} discussed the structural changes in the agricultural labor force since the reform and opening up. The other part believes that the practitioners all belong to the category of agricultural labor in agriculture, forestry, animal husbandry, and fishery.

For instance, Cai Hong (2017) analyzed changes in the gender structure of the agricultural labor force in mainland China. There are also studies that equate agricultural labor with first labor and the labor force in the primary industry refers to the labor force of agriculture, forestry, animal husbandry, and fishery according to the “Notice on Amending the Regulations of the Three Industries (2012)”.

The research is based on the latest revision of the “2017 National Economic Industry Classification (GB/T 4754–2017)”, which includes five categories of


agriculture, forestry, animal husbandry and fishery. Among them, agriculture refers to the cultivation of various food crops and cash crops, which is basically consistent with the cropping industry category in the census employment data. Professional and auxiliary activities, among which agriculture refers to the planting of various food crops and cash crops, which is basically the same as the planting industry in the census employment data.

Therefore, the “agricultural labor force” in the statistical analysis process of this study refers specifically to the “planting industry labor force”. Since other statistics lack the gender structure of the labor force, this data is mainly derived from previous censuses. The Chinese government has only released data from the first six censuses so far, and the seventh census in 2020 has not been fully released.

2.2 Changes in the Proportion of Women in the Agricultural Labor Force by Region from 1990 to 2010

Most studies have shown that the feminization of agricultural labor has occurred in mainland China. Meantime, population flow theory, similar benefit flow theory, and rational choice theory are the main theoretical orientation to explain the formation mechanism of the phenomenon. However, it is worth noting that the overall trend does not represent individual characteristics. From Figure 1 below can be seen that, proportion of female agricultural labor force among different regions shows characteristics of “gap narrowing”, “slow growing” and “block distribution” by comparing the proportion of women in agricultural labor force of 31 provinces (municipalities and autonomous regions) in mainland China in 1990 and 2010.

Firstly, the regional gap in the proportion of female agricultural labor has been slowing narrowing. In 1990, the proportion of women in the national agricultural labor force was 47.67%, with 17 regions having a higher proportion than the whole country. Shanghai had the highest proportion, reaching 63.73% and the range with the lowest proportion of Heilongjiang reached 26.29%, as well as the median, was 48.29%. In 2010, the proportion of women in the domestic agricultural labor force increased to 49.21%. The number of regions which proportion was above the whole country dropped to 12, but the median proportion increased to 48.89%, an increase of 0.6% over 1990. The range narrowed to 15.31%, a decrease of 10.98% from 1990.

Secondly, the proportion of female agricultural labor force has steadily increased over the past 20 years in most regions. The dynamics of the proportion of female labor force in 24 regions have been consistent with the national level, increasing to varying degrees, namely Tianjin, Hebei, Shanxi, Inner Mongolia, Liaoning, Jilin, Heilongjiang, Jiangsu, Zhejiang, Anhui, Fujian,
Jiangxi, Shandong, Henan, Hubei, Hunan, Guangdong, Guangxi, Chongqing, Sichuan, Shaanxi, Gansu, Qinghai, Ningxia which including 13 major grain production areas.

Areas with abundant agricultural resources absorb more female agricultural labor. Only seven regions have seen a decline in the proportion of female agricultural labor, namely Shanghai, Beijing, Hainan, Guizhou, Yunnan, Xizang, and Xinjiang. The urbanization level of Beijing and Shanghai, which have had the most significant decline, being close to that of developed countries. The urbanization level of Guizhou, Yunnan, Xizang, and Xinjiang was relatively low, and the share of primary production in three industries was high, but the development of traditional grain agriculture is restricted by the special geographical features and farming structure, which is not conducive to women’s involvement in agricultural activities.

Thirdly, the change in the proportion of female agricultural labor force has shown regional characteristics, and the areas with a higher proportion and faster grown have been distributed in blocks. It can also be seen from Figure 1 that the proportion of women in the national agricultural labor force increased by 1.54% in 2010 compared to 1990. Among the 24 areas with an increase in the
proportion of female agricultural labor, there were 13 areas had an increase in a proportion above the national average, of which, Heilongjiang, Jiangsu, and Jilin had the most massive changes, with an increase of 7.23%, 6.28%, and 5.43% respectively.

Liaoning, Jilin, and Heilongjiang have become the regions with the most significant increase and the fastest growth rate in the proportion of female agricultural labor force in the past 20 years (the dashed line frame in Figure 1), combined with the changing characteristics of the proportion of female agricultural labor force in Liaoning. Meantime, agricultural mechanization in Liaoning, Jilin, and Heilongjiang was the earliest and highest, and the agricultural modernization has been mainly realized compared with other commodity grain bases. Modern agricultural development has crowding-out effects on the labor force, in which women are deposited in the agricultural sector, while men tend to be more profitable non-agricultural sectors. In addition to the northeast region, Jiangsu (56.86%), Anhui (51.97%) and Henan (51.51%) also formed a region where the proportion of female agricultural labor increased more rapidly. However, it differs from the northeast in that the absolute number of female agricultural labor force exceeds that of the male.

2.3 Significant Differences in the Regional Distribution of the Gender Structure of Agricultural Labor

China is drawn, taking the proportion of female agricultural labor force as the variable, and the country and city as the basic statistical unit based on a dynamic comparison of the 2010 census data. Due to the differences in statistical caliber between different regions, it is not the statistics of the gender structure of the agricultural labor force in each region that is accurate to the county. Therefore, the data processing process uses a combination of city and county data. Specifically, 14 provincial-level administrative districts of Hebei, Shanxi, Inner Mongolia, Liaoning, Heilongjiang, Henan, Hunan, Guangxi, Sichuan, Guizhou, Xizang and Xinjiang have used gender-specific employment data at the municipal level. The remaining 17 provincial prefectures used gender-specific employment data at the country level.

In the gender structure map (Figure 2), different gray scales represent areas where the absolute number of female agricultural labor exceeds that of men, and the darker the color, the higher the proportion of female agricultural labor. The white is used in areas where the female agricultural labor force is lower than that of the male.

Areas with a high proportion of female agricultural labor were mainly distributed in the south of the 400 mm isohyet, and the proportion of female agricultural labor in Northeast China, Northwest China, Qinghai-Xizang Plateau,
and Yunnan-Guizhou Plateau was relatively low when focusing on the gray area in Map 2 and combining with some important geographical indications. Precisely, there are the following four distribution characteristics.

Firstly, the core areas, where the proportion of female agricultural labor force was relatively high, were between the Yellow River and the Yangtze River. Map 2 is shown that the Yellow River and the Yangtze River are primarily covered by grey, except for the bordering areas of Hubei and Shaanxi, of Gansu, Shaanxi, and Sichuan, as well as of northern part of Shaanxi and Inner Mongolia. The largest grayscale areas are distributed between plains in the middle and lower reaches of the Yellow River and the Yangtze River as well as the zone between the two plains, mainly involving southern and eastern of Hebei, central and eastern of Henan, eastern of Hubei, Shandong, Anhui, and Jiangsu. East of Sichuan, Chongqing, and south of Gansu is covered by large gray blocks.

Secondly, distribution in the south of the Yangtze River is relatively scattered. The proportion of female agricultural labor force was the highest in

**FIGURE 2** The distribution of female agricultural labor force in mainland China in 2010 exceeded that of males (%)

**SOURCE:** NATIONAL BUREAU OF STATISTICS, 2012: 2010 CHINA CENSUS DATA, BEIJING: SCIENCE AND TECHNOLOGY LITERATURE PUBLISHING HOUSE
the bordering areas of Jiangxi, Guangzhou, and Fujian, as well as the regions bordering Guangdong and Guangxi. The Yunnan-Guizhou Plateau and the East Yunnan Plateau, involving the western part of Guizhou and the eastern, northern, and western parts of Yunnan, had a higher proportion. The proportion of female agricultural labor in the southeast hilly areas, mainly involving Zhejiang and Fujian, is low. Combined with specific data, the area is one of the regions with the lowest proportion of female agricultural labor force in mainland China.

Thirdly, the west and north of the Yellow River did not show a high proportion of women in the agricultural labor force. The northwest of the Yellow River is mainly composed of two regions, one of which is the Northeast Plain with developed planting, including the northeastern part of Inner Mongolia and Heilongjiang, Jilin, and Liaoning. Another region is Xizang, Xinjiang, Qinghai, Inner Mongolia, and Gansu, where animal husbandry is developed. Overall, the proportion of women's agricultural labor in the two parts was not too high, with the only high proportion of a certain region, such as middle and lower reaches of the Brahmaputra River in China. Special emphasis should be placed on the Northeast because the proportion of female agricultural labor force in the three provinces was the fastest growing area according to Figure 1.

Fourth, the region with a high proportion of agricultural labor force in mainland China was essentially the same as cotton growing areas and commodity grain bases. China can be divided into three major cotton regions, namely the middle and lower reaches of the Yangtze River, including Shanghai, Zhejiang, Jiangsu, Hubei, Chongqing, Sichuan, Chongqing, Hunan, etc.; the middle and lower reaches of the Yellow River, including Henan, Yunnan, Shandong, Shanxi, Shaanxi and so on; and Xinjiang cotton areas, including southern, northern, and eastern of Xinjiang as well as Gansu. The gray coverage area in Map is very similar to the cotton planting area mentioned above, and it is almost overlapped in Jianghuai Plain, Jianghan Plain, central, and southern of Hebei, northwest of Shandong, Yubei Plain, and the coastal plain along the Yangtze River. The regular coincidence is not accidental and is influenced by complex factors of social economy and agricultural production.

Presumably, one of the important reasons is that cotton planting and picking work require a large amount of labor, which is often borne by women. For example, more than 80% of cotton pickers going to the south of Xinjiang every year were female.38 It also can be seen from the Map that the Huang-Huai-Hai Plain and the middle and lower reaches of the Yangtze River, involving Henan, Shandong, Anhui, Jiangsu and Hubei, which are consistent with the original

high-yield commodity grain bases in the South and the commodity grain bases
Huaihe Plain; the border region of Gansu, Ningxia and Shaanxi is in line with
the commodity grain base in the arid area of Northwest China; the region com-
posed of Sichuan, Chongqing, Guizhou, and Yunnan can be linked to the com-
modity grain base in Chengdu Plain; the border areas of Jiangxi, Guangdong,
Fujian and the Pearl River Delta coincide with the original high-yield commod-
ity grain base in the south of China.39

In summary, the regions with a high proportion of female agricultural labor
are often those with more agricultural resources, earlier farming history, bet-
ter agricultural production conditions, higher grain yields, and greater labor
mobility. In other words, traditional agricultural areas with relatively.

3 Empirical Analysis on the Difference of Regional Distribution
of Agricultural Labor Gender Structure

3.1 Research Hypothesis

3.1.1 Population Status and Regional Distribution of Agricultural
Labor Gender Structure

Hypothesis 1: the proportion of women in the agricultural labor force is posi-
tively correlated with the proportion of the rural population.

This research hypothesis mainly reflects the relationship between the level
of regional industrialization and the division of labor between families. The
proportion of rural population reflects the level of urbanization in a region.
The higher the proportion of rural population, the lower the proportion of
urban population and the lower the level of urbanization. At the same time, it
also shows that the level of industrialization and modernization in the region
is poor, and there are shortages of non-agricultural employment opportunities
and jobs.

39 At present, China consists of four types of commodity grain bases. The first category
is the original high-yield commercial grain base in the south, including the Yangtze River
Delta, Jianghan Plain, Poyang Lake Plain, Dongting Lake Plain and Pearl River Delta. The
second kind, the newly developed commodity grain base of Huaihe Plain, including
northern Jiangsu and northern Fujian, is a major wheeling grain producing area in China.
The third type is the northeast commercial grain base with a low level and the great-
est development potential, including the Sanjiang Plain and Songnen Plain, the Central
Jilin Plain and the Central Liaoning Plain. The fourth category is the commodity grain
base in the arid regions of Northwest China, including Hexi Corridor, Inner Mongolia and
Ningxia Hetao.
In the case of limited non-agricultural employment opportunities, rural families have obvious gender preferences in decision-making family labor distribution decisions. Compared with women, men are more likely to have non-agricultural opportunities, while women are deposited in the agricultural sector and take responsibility for caring for families and responsible fields. For example, when Jin Yihong (1998)\textsuperscript{40} studied the division of labor in the process of urbanization in southern Jiangsu, she found that there was a “differential pattern” in the gender division of labor, and women, especially foreign women, were often placed at the bottom of non-agricultural employment. Some scholars regard this division of labor as a rational division of labor to maximize family interests.\textsuperscript{41} However, as the age structure of the rural labor force changes and the level of education increases, the gender segregation of non-agricultural employment is being weakened in the new generation of rural labor groups. The proportion of women in the new generation of migrant population has increased significantly.

**Hypothesis 2:** the proportion of women in the agricultural labor force is negatively correlated with the proportion of the floating population.

Rural population mobility is gender-selective but not gender priority. Studies have pointed out that the new generation of the floating population is not only more aggressive, but gender differences are diminishing. The social division of labor and the industry focus has shifted to the tertiary industry, creating more jobs for women. Therefore, the proportion of the floating female population will be higher and higher in the future. Correspondingly, the proportion of women who stay behind in agriculture will continue to decrease, including the relative proportion and the absolute scale.

In addition, the impact of human capital investment on farmers’ non-agricultural employment has long been concerned by the academic community. The low population quality restricts the non-agricultural employment transfer of farmers.\textsuperscript{42} A large number of empirical studies have shown that, rural women with higher levels of education have higher human capital, and their non-agricultural transfer willingness and non-agricultural transfer ability are correspondingly stronger. A typical phenomenon is that with the inter-generational replacement, rural women after 80s, 90s and even 00s are more

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frequent and easier to transfer than non-agricultural occupations after 60s and 70s. From December 2014 to January 2015, the survey on agricultural feminization in Anhui Province found that young women under the age of 30 were not seen in rural areas except for going home to confinement (Cai Hong, 2017). Therefore, the educational level of the employed female labor force is included in the model in the form of control variables.43

3.1.2 Agricultural Status and Regional Distribution of Agricultural Labor Gender Structure

Agricultural status includes all aspects of agricultural production. According to the investigation experience of Anhui, the degree of mechanization and the area of cultivated land are the core variables that affect whether women can participate and complete production in the absence of their husbands.44,45

**Hypothesis 3**: the proportion of women in the agricultural labor force is positively correlated with the planting area.

All agricultural types in history regard arable land resources as the foundation of agricultural development. The area of cultivated land directly determines the amount of labor and output at the same level of agricultural productivity. The proportion of women in the agricultural labor force with abundant cultivated land resources is often higher, in addition to the northeast region, where the mechanization level is leading, by comparing the distribution of cultivated land area in mainland China and Map 2. It can be speculated that the number of cultivated lands is closely correlated to the scale of female agricultural labor. The planting area, which can reflect the actual situation, is used to replace the area of cultivated land in the paper, considering that the cultivated land area cannot reflect the multiple cropping rates.

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43 The census data does not directly reflect the years of education, only the level of education. According to the following methods, not attending school is regarded as 1 year, primary school is regarded as 6 years, junior high school is regarded as 9 years, high school is regarded as 12 years, junior college is regarded as 15 years, undergraduate is regarded as 16 years, and graduate students are regarded as 19 years.
In addition to the area planted with grain, the total grain output can also reflect the labor input in the grain production process on the premise of a certain labor productivity. Especially for hilly and mountain agriculture, most of them rely on direct labor input when mechanization is difficult to implement. Under the division mechanism of “male work and women farm”, this direct labor input is often female, especially in the daily field management, which is basically undertaken by women. Therefore, this study also included total grain yield as a control variable into the model, although there is a statistically significant collinear risk.

**Hypothesis 4:** the proportion of women in the agricultural labor force is negatively correlated with the total power of agricultural machinery.47

Different mechanization levels affect the matching scale of the labor force in agricultural production. Statistical Bulletin on Agricultural Mechanization Development in China in 2020 shows that the general mechanization rate of farming in China is 71.25% at the end of 2020, and the mechanization degree of each process of tillage and harvest is not balanced, and the seeding rate is only 58.98%, which means that many aspects of grain production still depend on a large amount of labor input. Although agricultural mechanization has improved labor efficiency, it has strict technical gender barriers. The history of agricultural development shows that men are always at the top of technology, which means that the proportion of male agricultural labor in areas with high mechanization may be higher.

### 3.1.3 Economic Status and Regional Distribution of Agricultural Labor Gender Structure

**Hypothesis 5:** the proportion of women in the agricultural labor force is negatively correlated with the regional gross domestic product (GDP).

The feminization of the agricultural labor force is both a population phenomenon and an economic phenomenon. The emergence of this phenomenon is essentially the result of the gender division of labor in the rural households under the dual structure of urban and rural areas. The profit-seeking flow of rural surplus labor and the rational decision-making of women staying in agriculture are affected by social and economic development. Among the many indicators of regional economic development, GDP is the most common and

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47 The index of total power of agricultural machinery has partially erased the differences between regions. For example, the amount of cultivated land is small in some areas but the level of mechanization is high. Also, the amount of cultivated land is large in some areas but the degree of mechanization is low.
generally accepted. The experience of urbanization shows that the level of urbanization in areas with higher GDP is correspondingly higher, the modern industrial system is more perfect, the social division of labor is more refined, and the tertiary industry is more developed, which will provide more non-agricultural jobs suitable for rural women. Therefore, the research hypothesis suggests that rural women in areas with high socio-economic development have more opportunities for non-agricultural employment.

**Hypothesis 6:** the proportion of women in the agricultural labor force is positively correlated with the added value of the primary industry.

From the perspective of industrial structure division, the primary industry corresponds to agriculture, and its output value can reflect the overall development level of the agricultural economy in a certain region. For traditional farming areas and several commodity grain bases, the added value of the primary industry tends to be higher than that of non-agricultural areas. Combined with Figure 2, it can be found that these areas may also absorb more female agricultural labor. In other words, GDP comprehensively reflects the level of social industrialization in a certain region, and the added value of the primary industry reflects the level of agricultural production. The higher the likelihood that women with higher indicators will be put into production.

### 3.2 Model Construction and Regression Results

#### 3.2.1 Data Sources

The data consist of two parts, demography-related data from the 2010 census data of each province (autonomous region, municipalities). The data related to agricultural production and regional economies from the 2011 provincial statistical yearbooks and data of some areas come from the statistical yearbook of 2011 of each prefecture and city. The reason for not using the latest data for 2020 is to match the 2010 population data. In addition, it should be noted that in mainland China, a national census is conducted every 10 years. The latest census data is the sixth national census and released in 2012. The principle of mixed statistics of country and city is adopted, which is based on population data, agricultural data, and economic data, consistent with the principle of data processing of the regional distribution map of the gender structure of the agricultural labor force. Therefore, the total sample size is much lower than the number of counties in the country. On this basis, to maintain the regression sample integrity and eliminate the missing variables, a total of 993 samples entered the model. The basic conditions of the sample are shown in Table 1.
3.2.2 Model Construction and Regression

The OLS regression model was constructed to explore the influencing factors of the difference in the proportion of female labor in the agricultural labor force. The mathematical expression is:

\[ L_{\text{Sex}_i} = c + \alpha \text{pop}_i + \beta \text{agri}_i + \gamma \text{eco}_i + \sum_{i=1}^{n} \delta_i \mu_i + z_i \]

In the model, \( L_{\text{Sex}_i} \) is the proportion of women in the agricultural labor force; \( \text{pop}_i \) is the regional population status, which is measured by the ratio of rural population to the region total population and the floating population to the region total population; \( \text{agri}_i \) is the regional agricultural production situation, measured by the two variables of grain sowing area and the total power of agricultural machinery; \( \text{eco}_i \) is the regional economic condition, which is measured by the regional gross domestic product and the added value of the primary industry; \( c \) is a constant term; \( \alpha, \beta, \gamma \) is a coefficient, \( \mu \) is the control variable, \( z \) is the random disturbance term; \( i \) is the sample size and \( n \) is the number of control variables.

Except for the population data, the variables in the model are taken as natural logarithms since the variable units are not uniform and the order of magnitude difference is significant. The variables were put into the model one by one, using the software of Stata. The Model 1 contained only the population conditions, the Model 2 added the agricultural status based on the population conditions, and the Model 3 added the economic conditions as well. The model results are shown in Table 2.

### Table 1: Basic situation of variables

<table>
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<th>Statistics</th>
<th>Variables</th>
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<td>Sex %</td>
<td>Floating %</td>
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</tbody>
</table>

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3.3 Model Interpretation and Discussion

3.3.1 Population Status and Gender Structure of Agricultural Labor Force

Model I shows that the proportion of rural population is significantly positively correlated with the explanatory variables, while the proportion of the floating population is significantly negatively correlated with the explained variables, which is consistent with the research hypothesis.

The proportion of rural population reflects the urbanization level of the region. The higher the proportion of the rural population, the lower the urbanization rate in the area, and the lower the urbanization level, the lower the level of economic development, the weaker supply of public services and the fewer employment opportunities. Under the stimulus of related benefits, the agricultural surplus population flows to areas with more non-agricultural employment opportunities to obtain higher labor returns, and women are deposited in the process.

Table 2

<table>
<thead>
<tr>
<th>Variables</th>
<th>I</th>
<th>II</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>Rural</td>
<td>0.0507***</td>
<td>0.0545***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0126)</td>
<td>(0.0133)</td>
</tr>
<tr>
<td></td>
<td>Floating</td>
<td>−0.0843***</td>
<td>−0.0364**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0154)</td>
<td>(0.0167)</td>
</tr>
<tr>
<td>Agriculture</td>
<td>Land</td>
<td>0.4585***</td>
<td>0.3878*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(8.14)</td>
<td>(3.3973)</td>
</tr>
<tr>
<td></td>
<td>Machine</td>
<td>−1.4316***</td>
<td>−1.1105***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.3073)</td>
<td>(0.3486)</td>
</tr>
<tr>
<td>Economic</td>
<td>GDP</td>
<td></td>
<td>−1.4746***</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.4138)</td>
</tr>
<tr>
<td></td>
<td>First industry</td>
<td></td>
<td>0.7530**</td>
</tr>
<tr>
<td>Control variable</td>
<td>Education</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td></td>
<td>Grain</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>F</td>
<td>54.75</td>
<td>39.06</td>
<td>29.48</td>
</tr>
<tr>
<td>R²</td>
<td>0.0899</td>
<td>0.1645</td>
<td>0.1728</td>
</tr>
<tr>
<td>N</td>
<td>993</td>
<td>993</td>
<td>993</td>
</tr>
</tbody>
</table>

Note: *, **, *** indicate significant levels at 10%, 5%, and 1%, respectively.
However, why does the proportion of female agricultural labor force decrease with the increase in the proportion of migrants? One possible explanation is that it does not mean that only men move, and women remain static while mobility is sex selective. The gender gap in the process of population movement in rural areas is weakening with the new and old labor force replacement, the improvement of female education level, the desalination of traditional gender concept and the upgrading of industrial structure. According to the 1% national population sampling data in 2015, the proportion of women employed in agriculture under 35 years of age accounted for only 22.24% of the total female employed population, compared with 59.77 at the time of the fourth national census in 1990.\textsuperscript{48} Depending on the National Migrant Workers Monitoring Report, the total number of female migrant workers at the end of 2011 was 86.198 million,\textsuperscript{49} rising to 99.384 million at the end of 2020, an increase of 13.186 million in ten years.\textsuperscript{50}

Under the same conditions, areas with a higher proportion of the rural population and less urbanized are more prone to rural women's sedimentary agriculture. The social division of labor offers more suitable non-farm jobs for women with the continuous increase of female human capital, and the gender differences in population mobility will be weakened in the future.

### 3.3.2 Agricultural Status and Gender Structure of Agricultural Labor Force

It can be seen from Model II; there is a significant positive correlation between the newly added grain planting area and the explanatory variables and a significant negative correlation between the total power of agricultural machinery and the explained variables, which was consistent with the hypothesis of the study. The correlation between the two population variables and the explanatory variables is not changed as new variables entering the model.

The level of mechanization is an important index to measure agricultural modernization. The higher the mechanization level, the less the agricultural labor input and the higher agricultural production efficiency are. Compared with men, there are many gender barriers for women to participate in

\begin{itemize}
  \item Data from China Census Data in 1990 (Volume 2) Part vi “Occupation, Industry”, and National 1% Population Sample Survey Data in 2015” Volume 5 “Employment”.
\end{itemize}
traditional agricultural production. Physical restrictions and the shackles of traditional ethical values have caused them to be excluded from mainstream agricultural production activities. In the 1960s and 1970s, there were also popular slang with extremely strong sexist color in North China, such as “women go to the fields, drought for three consecutive years,” “women plough fields, struck by thunder,” “women drilled wells, Dragon King mads.” Then, the gender taboo in production has been broken, and the popularity of mechanization, in theory, can also make up for the physiological deficiencies of women. Why does the model show that mechanization has hindered women from farming?

An important reason is that although women account for a high proportion of the agricultural labor force, and they tend to be limited to simple labor assistance and daily field management. Men hold technological advantages, and most of the manipulators of agricultural machinery are men. Participation of production, marginal decision making, and lack of technology are the main characteristics of women’s participation in agriculture, which is still “male agriculture.” Taking Northeast China as an example, Sanjiang Plain, Songnen Plain, and Liaohe Plain are the most important commodity grain bases in China. However, the industrial structure adjustment in these areas is lagging, and the level of urbanization is not high. In theory, large numbers of women are stranded in rural areas, but in practice, there is no excessive concentration of female agricultural labor.

Meantime, the pattern of land distribution will also affect the participation of both genders in agricultural production. The fragmentation of land is more likely to lead to the feminization of agriculture. Once the scale of cultivated land reaches a certain number, women will gradually withdraw from agricultural production, and men will begin to occupy an absolute advantage. Compared with Northeast China, some of the southwestern regions have a higher proportion of female labor force. For example, the intersections of Yunnan, Guizhou, and Sichuan are mainly karst landforms with complex terrain, finely divided plains, and traffic obstruction, so the large agricultural machinery is not easy to enter, and the dependence on manpower is greatly increased. Women must be “bundled” on the land when men go to non-agricultural occupations.


3.3.3 Economics Status and Gender Structure of Agricultural Labor Force

From the Model III, there is a significant negative correlation between the regional GDP and the explanatory variables, and a significant positive correlation between the added value of the primary industry and the explanatory variables, which is consistent with the research hypothesis. The correlation between the variables and the explanatory variables in Model I and Model II has not changed after the inclusion of two economic variables.

The impact of economic factors on the regional distribution of the gender structure of the agricultural labor force is fundamental. First, the urban-rural dual development model determines the basic pattern of population flow from rural to urban, and the gender differences in the process directly lead to the deposition of rural women.

Second, the level of urbanization in areas with faster economic progress is higher. Urbanization has eroded the cultivated land resources for agriculture, and it has become extremely scarce in these areas, so the feminization of agriculture has lost the existing soil. In Figure 1, the sharp decline in the proportion of female agricultural labor in Beijing and Shanghai is closely connected with this.

Thirdly, the process of economic development is further the process of upgrading the industrial structure, refining the social division of labor, and developing the tertiary industry. Rural women living in economically developed areas have more non-agricultural employment opportunities and are less likely to be tied to the land. Referring to the Map, it can be seen that there is still a large discussion space for the conclusion. The proportion of female agricultural labor force in most areas with higher levels of economic development is indeed relatively low, such as Zhejiang, Fujian, Guangdong, Beijing. However, there are also some areas with better socio-economic conditions where the proportion of female agriculture is on the high side, typically Jiangsu, Shandong, and Chongqing.

There is a collinear risk between the added value variable of the primary industry with the regional GDP variable, but the situation reflected by the two is not consistent. The regions with a higher added value of the primary industry are abundant in agricultural resources and the most typical of which are Northeast China and Jianghuai region. Referring to Figure 1 and Figure 2, the proportion of female agricultural labor force in the former increases large and rapid but is low while the latter is not as fast as the former, but its proportion is high. The comparison between the two places conflicts with the research hypothesis and the model conclusion.
The reason is whether the deposition of rural women is influenced by factors such as planting structure, factor input, and social culture. Therefore, it should not only focus on a single factor when analyzing the regional differences in the gender structure of agricultural labor, because different regions show obvious regional heterogeneity due to different agricultural development environments.

It cannot be stipulated that agricultural development is a complicated process and the gender division of agricultural labor is also a grand historical issue. The simple descriptive analysis and econometric model are not enough to fully explain the regional differences in the gender structure of agricultural labor. The study only explained some of the key elements.

4 The Regional Comparison of the Influence Mechanism of Feminization of Agricultural Labor Force

There are regional differences in the influence mechanism of the feminization of the agricultural labor force on different regions like the regional distribution of the gender structure of the agricultural labor force. The feminization of the agricultural labor force has no significant negative impact on the individual development of rural women, agricultural production, and food security. However, female farming faces serious gender inequality and gender barriers of agricultural production in other developing countries.

4.1 The Gender Inequality of Women Farmers in Other Developing Countries

There are varying degrees of feminization of agricultural workforce in South Asia where agricultural production resource is abundant, such as Nepal (Gartaula, 2010; Maharjan, 2012),53,54 India (Ramamurthy, 2010; Pattnaik, 2010).

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2018),55,56 Bangladesh (Kelkar, 2009),57 and Latin America (Deere, 2005),58 including Ghana (Duncan, 2004),59 Nigeria (Oseni, 2015)60 and Tanzania (Slavchevska, 2015)61 in Africa.

The distribution and results of agricultural labor in these areas show the following five characteristics. First, there is a gender difference in the distribution of agricultural labor. The traditional male-dominated agricultural production pattern has changed, and women have increasingly participated in agricultural production as well as played a more prominent role. But under the same conditions, the productivity of female farmers is generally lower than that of males.

Second, the increasing proportion of women in the agricultural labor force does not mean that they have mastered the high-quality resources of production, and the gender division of labor does not lead to the gender transfer of agricultural production materials as well as men still have the superior means of agricultural production.

Third, women’s agricultural contribution and social evaluation are not equal. The outstanding economic contribution has not brought about the improvement of social status, and gender discrimination continues to be widespread. The living conditions of agricultural women are not ideal, especially the phenomenon of unequal pay for equal work is very common. Fourth, agriculture, as a weak industry, is the result of men’s choice of more profitable non-agricultural sectors and the transfer to women. The logic of “male first” family gender division of labor has not changed in the face of superior

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resources. Fifth, the feminization of agriculture is not just a family economic relationship, but more often a sociocultural relationship.

4.2 The Influence of Feminization of Agriculture has Its Particularity in China: The Experience from Anhui Province

Gender inequality is also found in the study of the feminization of agriculture and the issue of rural women left behind in mainland China. Most previous studies have been problem-oriented, treating it as a social issue and the most heated discussion is the status of women and individual development. It is generally accepted that the predicament is higher than the opportunity and is the performance of the era that women are further marginalized.

Female farming is regarded as a “replica” of “men outside and women inside,” but the scope of “outside” has extended from the village outside the home to the town outside the village, while the scope of “inside” has moved from the family to the field. In the process of family gender division, women are always on the “passive” side, and developmental resources are given priority to men. Therefore, some scholars believe that the feminization of the agricultural labor force, on the contrary, has impeded the personal development of rural women. They participate in productive activities but do not receive returns commensurate with productive activities. Typically, women are excluded from land contracting rights. In addition to the intrinsic influence on individuals, the feminization of agricultural labor force also has adverse effects on agricultural development, food security, management and so on, which hinders the process of agricultural modernization.

However, the mechanism of agricultural labor feminization is not so, in connection with the theory of labor gender division. While it is the past “male farming and female weaving,” “men and women farming together,” of the current “male working and female farming,” “men and women working together”, are the rational division mechanism of labor for rural families to combine gender characteristics and market arrangements. It should not measure the type of work and the speed of individual development by the rate of return on wages. Both genders have realized the value of life in the process of deducing their respective role.

62 From December 2014 to January 2015, the author investigated the gender division of household labor and its consequences in 19 rural villages in northern and southern Anhui, and collected 2073 valid questionnaires, including 1367 female samples. Later, in order to enrich the research, in August 2016, 2017 and the Spring Festival period of 2018, the author supplemented the case interviews of Qingchun Village in Dingyuan Country, Siwei Village in Shucheng Country and Jiabei Village in Shouxian Country, respectively.
On the contrary, women’s daily field care work not only does not affect food production, technological progress, agricultural development, nor does it undermine family harmony under the “absence” of men. The rural family development ability has been improved in the division of labor. The peasant status advantage of “returning to agricultural” has been preserved, and the role of rural communities as a stabilizer for carrying social risks has been consolidated.

According to the survey data of agricultural feminization in Anhui province, it can be seen that although rural women’s enthusiasm for agricultural participation is not high, agricultural production has not been significantly affected by women’s participation, and women in agricultural production activities have not encountered insurmountable gender barriers with the assistance of changes in agricultural production methods, male return during the busy period of agriculture, seasonal employment of agricultural supplies, distribution of production materials, government policy asylum and other resources.63

In other words, whether agriculture is developing, technology is progressing, and output is increasing, who leads and who manages family agricultural production activities is no longer a core factor in determining production outcomes and the gender boundaries in the actual agricultural production activities of the “decision-making power” and “management power” the academic circles have heatedly debated are also unclear in rural areas where agricultural mechanization and agricultural science and technology have been effectively popularized. Further, the results of the life satisfaction survey of Rural Women in Anhui Province indicate that rural (left-behind) women generally prefer the family gender division mechanism of “male working and female farming” which is the expression of men’s “ability”; but women in families that male cannot work for various reasons are not satisfied with the current life, mainly due to “economic pressure”.

The influence mechanism of agricultural feminization has particularity in mainland China. The biggest difference with other developing countries is the impact of non-agricultural mobility on China’s agricultural production is minimal, and farmers can compensate for the labor shortage caused by labor loss by reducing the rest time.64 Women do not experience gender inequality in the “male working and female farming” division mechanism of the labor force. They are competent for daily field management and beginning to lead

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the entire agricultural production activity. The gender division of labor has not had a significant adverse effect on agricultural production, rural households, and women’s development. On the contrary, most rural women tend to be even keen on this division of labor to accumulate resources for family development.

Therefore, it is necessary to actively change the inherent concept of gender weakness and transform the problem consciousness into the awareness of resources, as well as view the feminization of agricultural labor from the perspective of human resources and gender value in the face of the changes in the gender structure of agricultural labor force and the characteristics of female farmers’ agricultural participation in mainland China.

In the process of agricultural modernization, it is not only to change the primary living and productive environment of rural women, but to advocate the primary gender value orientation of “equality between men and women,” and to create a gender-friendly agricultural production environment with development and growth significance to develop women’s unique gender values.

It must be noted that the transition from traditional agriculture to modern agriculture is also a transformation from the physical participation of the labor force to the participation of ideas. The gender value of female farmers will gradually manifest with the advancement of agricultural technology and the digital economy into agricultural production and management.

5 Pay Attention to the Gender Value of Female Agricultural Labor

In fact, according to the data of China’s seventh national census in 2020, the 1% population sample survey in 2015 and the No.5 Bulletin of the Third China Agricultural Census in 2016, the proportion of women in the agricultural labor force has decreased.

Taking Anhui Province as an example, according to the data of the 2016 Agricultural Census of Anhui Province, the sex ratio of all agricultural production and operation personnel increased to 105.39 (female = 100), and the proportion of female agricultural employees decreased significantly. The 2020 census data of Anhui Province shows that the proportion of female agricultural labor force in the agricultural labor force has dropped to less than 50%.

down to 49.03%, a decrease of 2.94 percentage points from 2010, indicating that women are leaving the agricultural field.

Some scholars have keenly observed this change, and studies have pointed out that compared with other developing countries, the characteristics of agricultural feminization in my country are not so significant, and the vitality of agricultural labor feminization in mainland China is weakening, and the feminization of agriculture in China is not so significant compared with other developing countries as well as the vitality of feminization of agricultural labor force in mainland China is weakening.

However, this does not imply that the power of women can be ignored in the process of rural revitalization. The innovation of agricultural management system and the advancement of agricultural production methods have reduced the demand for labor quantity and physical strength in agricultural development. The physiological gap between the two sexes has been narrowed in technological progress, which provides an opportunity for female farmers to further participate in agricultural modernization.

### 5.1 Actively Integrate Gender Awareness into Rural Agricultural Reform and Development

Rural revitalization, including industrial revitalization, cultural revitalization, and ecological revitalization, all depend on population revitalization. Population (people), as consumers and producers, is the mainstay of rural revitalization. It is unimaginable to talk about revitalization without the support of agricultural population resources, and final results of rural revitalization also need to be implemented on the rural population. By defining “relying on who” and “for whom” of rural revitalization, we should re-understand the value of left-behind women and female peasants in rural revitalization, transform them from governance objects to governance subjects, and fully mobilize their production enthusiasm and management initiative.

First, establish a sense of scale for the female agricultural labor force. Regression model studies have shown (see Table 2) that accelerated population movements will reduce the proportion of women in the agricultural workforce. With the change in the age structure of the rural labor force, the phenomenon of gender difference has gradually weakened in the process of

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population movement, and the proportion of female has increased in the floating population. Especially in the low-age floating population, the gender selection phenomenon has disappeared.

At the same time, the correlation between mechanization and the proportion of women in the model is also proved (see Table 2) that the current agricultural modernization path with mechanization extension and land circulation as the primary manifestation will also reduce the proportion of women in agricultural production. However, the primary national conditions of the enormous agricultural labor force also remind us that their actual scale should not be underestimated. Therefore, it is necessary to incorporate the group into the policy research system in the implementation of the rural revitalization plan and establish the awareness of women's agricultural labor resources because women not only play an indispensable role in agricultural production, but also constitute an essential force to maintain grassroots stability, innovate grassroots governance, and increase grassroots vitality.

Second, establish a sense of regional distribution difference of female agricultural labor force. The historical dynamics of gender structure of agricultural labor force (see Figure 1) and regional distribution characteristics (see Figure 2) show that the proportion of female agricultural labor force in some regions is still rising, typically in the northeast provinces; the female agricultural labor force in some regions has surpassed that of males and women have become the leading force in agricultural production, typically in the Jianghuai area. The analysis of the two regions shows that the Northeast has the earliest and most complete agricultural modernization system. The highly mechanized production is the most important feature distinguishing the region from others.

However, both model conclusions and survey experience have found that women are frequently excluded from the threshold of technology. Then, how to improve the technical level and scientific literacy of female agricultural producers in Northeast China and how to carry out technical training and management training for female producers, is the key to make full advantages of the existing human resource in the northeast region as well as further improve the level of agricultural development, production efficiency and production quality. For the Jianghuai region, it also is required to focus on cultivating their grassroots governance and democratic participation in addition to skills training, cultivating the digital awareness of agricultural women and making them the builder of the rural digital governance system.

Third, integrate the gender value awareness of women's agricultural labor. Different studies have controversy about the actual utility of women's role play in agricultural production, and the deviation between their quantity and value
is the mainstream view, which also supports the assertion that women are future “marginalize.” On the contrary, a fact that cannot be ignored is that, in the context that the macro trend of population movements in rural areas has not been fundamentally reversed, as long as rural families have to adopt the gender division of “male working and female farming” in order to support family development, it would be a setback for agricultural of the country when the female agricultural workforce is no longer engaged in daily field management during the “absence” of men.

Agricultural production is just an integrated process. The value of labor is reflected in each production link, which has no inferior advantages and disadvantages. Both simple labor input and sophisticated technical support are equal importance and value for productive results. It should not deny or measure their value by the participation of women's agricultural labor and agricultural women are as important as men in food production and agricultural development. Therefore, it is necessary not only to affirm women’s contribution to agricultural modernization from the perspective of public opinion, to reserve the stereotypes about female agricultural labor and left-behind women, but also to integrate gender awareness into the rural strategic planning, so that rural women can be both the object and main body of revitalization and can play a more active role in the agricultural production.

5.2  Cultivate Elite Women in Agricultural Technology, Management, and Marketing

High-quality development of agriculture and rural areas is the basis of rural revitalization, and high-quality development of agriculture is the essence of agricultural modernization. The introduction of digital technology is an important means and way for the high-quality development of agriculture and rural areas. The physical and quantitative factors of the labor force will be continuously weakened, while the factors of quality, technology, and concept will be gradually strengthened with the further promotion of agricultural mechanization, science, and technology as well as a management system, that means that the female agricultural workforce with modern agricultural production knowledge and management concepts can also support the development of family farms and modern agriculture.

In the future, agricultural development will not only rely on natural resources such as land, water, and the climate but also be deeply affected by financial and social capital. The boundary between agriculture and non-agriculture will gradually become blurred. Agriculture will not only be limited to the primary industry but will develop into a comprehensive industry.
The trend of agricultural secondary and tertiary production conversion will become more prominent, and the integration of three agricultural industries will be concentrated in the upgrading of rural industrial structure.

At the same time, agricultural progress will continue to break through the previously established cognitive categories, especially in the establishment of logistics systems nationwide or even globally, and the integration of digital awareness into agricultural development. The agricultural labor force will also break through geographical attributes. Some urban women will enter the agricultural development field. For example, the socialized eco-agricultural development model (Community Supported Agriculture, “CSA”), which has just started in China, has spawned some female elites, all of whom have two labels, intellectual women, and the urban female.

Therefore, it is worth rethinking the positioning of traditional female farmers and modern intellectual women in the process of agricultural modernization. They can enter the agricultural field as communicators of professional technology, practitioners of advanced management ideas, promoters of digital agricultural production and advocates of ecological agriculture. In the process of transformation from traditional agriculture to modern agriculture, ecological agriculture, and social agriculture, they will try to eliminate potential gender inequality, breakthrough existing gender stereotypes, establish a new gender awareness, give full play to the gender advantage of women, cultivate and guide more female elites into agriculture production, management and marketing.

5.3 Giving Play to the “Super Half Effect” of Rural Women’s Cultural Inheritance

The proportion of women in the agricultural labor force on the Chinese mainland is decreasing, but according to the seventh census in 2020, the proportion of women in the agricultural labor force is still more than 46 percent, of which more than 80 percent are middle-aged women over the age of 40. These large scales rural women constitute the current rural population and agricultural production main body. Most of the time, rural women have taken on more responsibilities in rural life and production. They are the important subjects of rural cultural revitalization and have more gender advantages than men. It still plays a “half of the sky” role in rural development, and even plays a “super half effect” in some fields.

In promoting rural revitalization in the future, China needs to take a new look at these rural women from the perspective of development. They play different roles in rural production, ecology, village style, governance, and construction. In the performance of these roles, they can put the metaphysical culture into the real life, so as to be inherited. First, increase the intensity of
activities to lead rural women out of the dilemma of lack of mental motivation. Second, improve the validity of training and guide rural women to overcome the difficulties of low vocational skills. Third, improve the level of care and help rural women get rid of the problems of poor physical and mental quality. Fourth, strengthen political participation and lead rural women to free themselves from the embarrassment of weak political participation status. Fifth, to change the social evaluation, leading rural women in the family cultural inheritance encountered confusion.

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