



## **A comparative analysis of participation of women to agricultural activities and utilization possibilities of agricultural extension (survey at center of Tokat province)**

**Nuray Kizilaslan\*, Murat Ercoban**

**Gaziosmanpasa University, Faculty of Agriculture, Department of Agricultural Economics, 60240, Tokat, (TURKEY)**

**E-mail : nkizilaslan@yahoo.com.tr**

### **ABSTRACT**

In this study, possibilities of participation of women in agricultural activities and utilization of facilities of publication at mountain and at plain villages of Tokat were investigated. 13 villages (20% of the villages at the center) were selected according to purpose-sample-method. Amongst the villages, 101 female farmers were built up as sample volume according to method of proportional sample distribution (one of laminar sample methods). According to the research results, women in rural areas participate in agricultural production activities significantly and contributes to family income. 91.9% of female farmers participates in crop production activities. At mountain and plain villages, most women work for their own needs such as crop production for the home. This ratio is 88.14% at the mountain villages and 83.34% at the villages at plains. 90.1% of the women participates in the activities of animal breeding. Female farmers taking part in animal production, mainly work on production of dairy products and milking the animals. Despite these important contributions, women cannot benefit from educational opportunities and extension services sufficiently. Only 13.55% of female farmers in mountain villages and 30.95% in the lowland villages stated that they benefited agricultural extension services. 60.78% of women not attending extension activities at mountains declared they have heavy work load; meanwhile 33.33% of them stated that they cannot find spare time for extension services. Female farmers' participation at decision-making of family varies according to the villages. In general, women stay passive among decision-making process. According to these results, by taking into account of contribution and participation of the female population in production activities, more opportunities shall be provided to female farmers to improve themselves. Moreover, roles within the family must be activated. In this context, agricultural extension services intended to education of women, shall be emphasized more often.

© 2013 Trade Science Inc. - INDIA

### **KEYWORDS**

Participation of women in agriculture;  
Agricultural extension for woman;  
rural women.

## Regular Paper

### INTRODUCTION

The focal point of development can be considered as human and development of human resources is directly proportional with training. Education can be said as the best investment for people. In some countries, due to discrimination against women, women cannot use training opportunities sufficiently. Although women at rural area undertaking an important role at all stages of production do not get an equal share of development opportunities.

Peasant women in Turkish society greatly contribute to production and participate in economic life. According to 2008 data, 41.2% of total female population as employee in Turkey is in the agricultural sector<sup>[1]</sup>. Women at rural area work as family labor, as agricultural wage-labor and farming, as a business manager and also contribute to the family budget with non-agricultural economic activities. In other words, they take more responsibility than men at society and family life in every area, production, education, health, food and nutrition<sup>[10]</sup>. Women at rural areas have to plan to carry out house works without disrupting the agricultural affairs. Taking into account these activities, contribution of women to agricultural activities cannot be ignored at rural areas.

The place of women in society is determined by the country's level of development and cultural values. Especially in agricultural sector and village life, working of women much more than men is seen normal in Turkey in terms of social values<sup>[11,23]</sup>.

The role of women in agricultural production often depends on the family's economic and legal place in agricultural structure. In contrast to urbanite women in Turkey, the vast majority of women population in rural areas are working and producing. Involvement of women in agriculture production depends on the family income and agricultural activities. Understanding structure and contributions of women in agricultural production is important for the development of new approaches as well as the implementation of the existing extension policies. However, because of restraints at both women social life and extension system, implementation of these policies and developing new ones were failed. Housework and agricultural activities are seemed very closed to each other and many housework activities support or assist agricultural business. Thus, these factors result

in gender inequality in rural areas while benefiting from extension services. In this context, appropriate delivery of really useful information and extension services to women depends on identifying working conditions of women in rural areas clearly<sup>[9]</sup>.

With authentic climate, regional geography and productivity Tokat region is one of the major centers of producing poly-culture in the country. 25,04% of population of Turkey and 43,93% population of Tokat province locate at rural area. Female population constitutes 50.16% of the population at rural<sup>[2,3]</sup>. This also shows that, agricultural production is the main source of living for a large proportion of the population. Especially female population plays an important role in agricultural production. Proportion of role of women in agricultural production and what extent women can utilize from extension services in order to make production consciously need to be researched because Tokat has very important place in agriculture of Turkey.

In the study, participation of women to agricultural activities at Tokat and possibilities of utilization from extension services were researched among villages at plains and mountains. Determination of importance was intended with examination of factors of women in rural areas such as contribution to production, working conditions, income etc. In addition, ideas of women on agricultural extension, participation in these programs, constraints of non-participation were examined. For this purpose, some results were found by learning opinions and expectations of women farmers. Women living at mountains and plains villages were compared via statistical analysis in terms of utilization from extension opportunities and some social-economic indicators.

### Agricultural extension service in Turkey

Agricultural extension services in Turkey mainly carried out by the Ministry of Food, Agriculture and Livestock. Because of differences in ecological and geographical regions of Turkey, agricultural activities are diversifying and the training and extension programs differ in parallel. In other words, the different agricultural programs are implemented at different times for each zone. Taking into consideration the status of existing agricultural, agriculture-related institutions and organizations at each province, training and extension program are suggested in meetings held with the participation of farmers and District Directorates. "Education and Extension Program" consists of efforts by recon-

ciliation to achieve the goals identified in training and extension activities. Within the context of prepared annual programs, guiding training and extension program put into practice to improve farmers' knowledge and skills with the needs of new techniques.

This program is carried out by extension staff such as Agricultural Engineers, Veterinarians, Food Engineers working in Provincial Directorates of Ministry of Food, Agriculture and Livestock. Extension staff are working at city center, district center or villages according to their profession. Information and technological innovations related with problems/requirements of people living in rural areas are transferred by extension methods (demonstration, conference, agricultural tours etc.) via extension staff. Agricultural Extension and Consultancy System was entered into force by Ministry of Food, Agriculture and Livestock in 2006. Technical staff of public or private sector intending to perform agricultural consultancy can only be certified after passing Agricultural Extension and Consultancy Exams. Staff having this certificate can work for public sector or also for private sector by opening consultancy offices to transfer agricultural information and technologies to farmers. Furthermore, farmers paying for consultants and taking consultancy services for their agricultural problems or requirements have been subsidized by Ministry according to "Communique of Supporting Payment of Agricultural Extension and Consultancy Services" since 2009. Extension staff working at Provincial Directorates of Ministry of Food, Agriculture and Livestock are called as "agriculture publisher" and staff at private offices are called as "agriculture consultants".

Mainly, public extension is performed in Turkey. But, also producers associations (dairy producers associations, beekeeping associations, vegetable producers associations etc.), industrial organizations based on agriculture which are buying/selling raw materials, private press, private agriculture consultancy offices, voluntary organizations (Turkey Development Foundation, Turkey Combating Soil Erosion, Forestation and Natural Resources Conservation Foundation etc.) give extension services to producers regarding their own area. The Ministry, producers associations, voluntary organizations do not demand any cost for publishing from producers, on the contrary they put forward social profitability. Industrial organizations based on agriculture give extension services for their sustainability and do not

demand any cost but capacity raise and economic profitability are aimed indirectly. Private consultancy offices offer agricultural extension services directly to producers for a fee. There seems a major increase at number of technical staff opening private consultancy offices. However, producers' level of benefit from those private offices is insufficient and producers have not well adapted to the system yet. Provincial Directorates of Ministry of Food, Agriculture and Livestock are still the major information resources of the producers.

### **Agricultural and geographical properties of Tokat province**

Tokat is surrounded by Samsun from North, by Ordu from northeast, by Sivas from south, by Yozgat from southwest and finally by Amasya from west. Area of the province is 10 073 km<sup>2</sup>. Mountains are located parallel at Black Sea region and there are plains and plateaus where rivers flow between the mountains. Major geographical formations are followings: Kelkit, Tozanly and Çekerek water basins; heights between these basins, alluvial plains and mountains from north to south with increasing heights. Plains covers approximately 15.4% of the province area and suitable for agriculture. Kelkit, Tozanly and Çekerek Valleys are the three major valleys located through east-west direction. Yepilyrmak river and its arms are the irrigation source of the territory of Tokat. Approximately 48,8% of the territory of Tokat is covered by forest and heaths, cultivated and planted areas constitutes 34,8% of it and 14,5% of the territory is covered by meadows and pastures. Rest 1,9% of the area is not suitable for agriculture. Population of Tokat is 617 802 inhabitants according to the results of Address Based Population Registration System Population of 2010. 363 944 inhabitants are living in cities and 253 858 inhabitants are living in towns and villages. 59% of population live in the city and 41% of the inhabitants live in the villages. Provincial economy is dominated by the agricultural sector due to natural structure of the province, fertile plains irrigated by river Yepilyrmak, altitude changes and climate variety leading to a wide production range for crops. Level of productivity in Tokat is usually higher than the average of Turkey. Sugar beets, wheat, barley, sunflower, beans, corn, tobacco and sunflower are the main products produced. Producing products with high value-added (tomatoes, beans, etc.) and

## Regular Paper

factors such as climate, soil structure, irrigation increase the importance of agriculture in the economy of province. Crop production is followed by livestock in Tokat. Region can be considered as having a rich fauna, therefore in order to develop dairy farming all types of the breeding researches are performed. There is a wide variety of flora and scientific system in beekeeping is quite advanced.

### MATERIAL AND METHOD

The main material of the study is the data obtained through direct interview method from 101 women in the 13 villages of mountain and plain. The research area involves mountains and plains villages of central district of Tokat province.

According to objected-sampling-method for 65 villages at the target area, 13 villages (20% of target area) were taken as samples to interview. 7 villages at mountains of and 6 villages at the plains were selected randomly according to geographical structure of the research area as well as taking into account the records of the Provincial Directorate of Agriculture.

After selecting the villages, number of households and land assets of these villages were determined by the help of records of the Provincial Directorate of Agriculture and Tokat City Hall. Laminar random sampling method was used in the research stage of sampling. "Size of land" was taken as the basic variable for sampling. 95% confidence interval ( $t = 1.96$ ) and the average deviation of 5% were used in the study. 101 agriculture farm were classified as follows by using the sampling method.

Layer No	Layer width (da)	Mountain Villages		Plain Villages	
		Farm Number	Sample Number	Farm Number	Sample Number
1	0-25	138	15	142	15
2	25,1-50	116	15	89	12
3	50,1-100	83	22	47	11
4	100,1 +	21	7	9	4
TOTAL		358	59	287	42

According to this:

- (I) Layer : 30(15 Mountain villages, 15 Plain Villages)
  - (II) Layer : 27(15 Mountain villages, 12 Plain Villages)
  - (III) Layer : 33(22 Mountain villages, 11 Plain Villages)
  - (IV) Layer : 11(7 Mountain villages, 4 Plain Villages)
- Totally 101 farm were taken as samples.

During the evaluation of the data, chi-square test was used as analysis method. Dependency coefficient (Coefficient of Contingency) showed the strength of the relationship.

Variance Analysis was used to compare the average of the numerical data. As a result of the analysis of variance; rejection of zero hypothesis does not mean that there are important differences between the averages of the entire group. Source of these differences must be revealed. In this regard, differences between the averages of all combinations of two groups were evaluated with Least Significant Difference (LSD) control.

### RESULTS AND CONCLUSION

#### Socio-economic characteristics of woman farmers in research zone

##### Age

Examination of ages of women plays an important role in terms of assessment of relationships between and age and other characteristics. In Turkish society, age is an important factor for acceptance of the individuals in the community usually, also a factor influencing their environment<sup>[25]</sup>. As age increases, effectiveness of women in the labor force declines in production activities but participation in the process of decision making increases.

In this context 42.38% of female farmers living mountain villages and 57.14% of female farmers living in the villages of plains are in 31-45 age group. 46-60 age group is set up 35.59% of women living in mountain villages and 28.57% of female farmers living in plains.

##### Training

Training, in terms of the individual, is the process of behavior changes in the desired direction by activation of the hidden forces<sup>[19]</sup>. This process can be said as it would help at understanding, solving problems and at monitoring the developments. According to Talug<sup>[20]</sup> a significant relationship is not seemed between the proposed adoption of agricultural techniques and education levels of producers.

After evaluation of educational status of women; 76.27% at the mountain villages graduated from primary school, while it is 83,33% in plain villages. The

percentage of illiterates is 8,48% at mountain villages and 9,53% at plain villages. There were no high school graduate and bachelors at the villages of mountain and plain through research area.

### **Martial status**

In rural areas, marriage is much more important in social life when compared with the city. Marriage in rural areas is almost a “sine qua non” condition due to bringing up children and participation in labor force. In this regard, women’s marital status is a socio-economic property<sup>[7]</sup>. Marital status of women in the research area was examined and 91,53% of those is married at the mountain villages, while 88,10% is married at the plain villages, respectively. There was no unmarried female farmer at the mountain villages but 4,76% female farmers were single in the villages of the plain.

### **Family style**

Families are in variety forms because of social, economic, psychological, or traditional reasons. Nuclear family is the family type including mother, father and children. A “defect family” appears In case of death of any of spouses and usually when the father dies defect family occurs in Turkish villages. Because, man often re-marries after the death of his wife. Defect families extends to large families by marrying singles children<sup>[24]</sup>. Except from mother, father and child in family, living with grandparents or married child’s family (his wife and grandchildren) are common features of family structure at rural areas<sup>[7]</sup>.

In the study, ratio of the women living in nuclear families is 35,60% at mountain villages and 66,67% at plain villages. The proportion of women living with large families is 59.32% at mountain villages, while it is 30,95% at plain villages. And rest is set up by defect family. According to Chi-square test, statistically an important difference was identified among the family types. The dependency coefficient showing this significant relationship was calculated as 0,293.

### **Position and task of woman in the family**

Women living in rural areas are responsible for all household works and child care and also work as a “free agricultural worker” in their own agricultural enterprises.

Women at the mountain villages describe their place and task in the family, as motherhood with a ratio of 98.30%, as housewives with a ratio of 98.30% and 98.30% of the women describe their position as agri-

cultural assistance. These percentages do not differ significantly when compared with the percentages of plain villages. 97.61% of women identify themselves as motherhood, 100% as housewives and 90.47% as agricultural assistants at plain villages. Option to provide income by working outside of agriculture is not defined as woman’s task or responsibility. Women working in agriculture as a producer still consider themselves as assistants to men at home. They are not aware of their production activities and additional benefits.

Followings are found in another survey done in Tokat. While the rate of the females agreeing with the opinion that “the contribution of the females to the operation of agricultural activities is substantial” was found to be 87.72 %, the rate of the males having the same opinion was found to be 67.84 %. The rate of the males disagreeing with this opinion (19.88 %) was found to be higher than the females disagreeing with the same opinion (6.43 %). According to the calculated z value, the difference between the responses of the males and females agreeing and disagreeing with this opinion was significant. It may be concluded from this result that males have a tendency to ignore the labor provided by women. It is also possible to say that males may deem the work of women in agricultural activities not as a contribution, but as duties they have to perform<sup>[15]</sup>.

### **Family size**

Presence of any help for any work of a female farmer is important at both domestic and outside agricultural work. Expansion of the family at least partially eliminates the need for the foreign labor force.

Research shows that ratio of women working with 2-4 individuals was 23.73% in the mountain villages, while it was 38.10% in the plain villages. The percentage of women working with 5-7 individuals was 42.37% in the mountain villages, while it was 47.62% in the villages of the plain. Women working with 11 individuals or higher was 6.78% in mountain villages while it was 2.38% in the villages of the plain. In general, the majority of communities were composed of 5-7 individuals. According to the chi-square test, any significant differences was not observed between the variables in order to observe changes of the size of households among villages.

### **Female farmers’ partners profession**

In rural life, business or profession is referred by the common name “farmer”. However, different professions are observed due to social development, lack

## Regular Paper

of farm land in rural areas, being close to town centers and reasons such as ease of transportation. Economic characteristics of women especially depends on the husband's profession and also husband's occupation is important for understanding the determination factors of women at decision-making<sup>[24]</sup>.

There observed 30 women (50.85%) in the mountain villages and 31 women (73.80%) in plain villages when professions of husbands of female farmers at villages were examined according to groups of in the research. Overall, the ration of the women whose husbands were farmer was found to be 60.40% and 24.75% of the husbands were self-employed (craftsmen, etc.) and 14.75% of the husbands were worker.

### Land asset held by families of female farmers

In rural areas, the most important criteria for determining the family's economic situation is presence of a land providing an agricultural production. Although, the rural labor force is increasingly shifting to other sectors, the real main source of livelihood is determined by owned land asset<sup>[21]</sup>.

Rogers and Shoemaker stated that in many studies size of the business has been considered to be a factor affecting the behavior of adoption of agricultural innovations. Furthermore, a significant correlation was found in 67% of 277 studies examining the correlation between business size and agricultural producers attitudes against the innovations and in 33% of them there was

not indicated any significant correlation<sup>[17]</sup>.

Farm land is the largest area in each of two group (mountain village: has a percentage of 92.97% with an average of 37.98 decares; lowland village: with a percentage of 52.20% and average of 12.6 decares). Farm land in mountain villages is covering a larger area, however, fields of fruit and vegetable crop cover (approximately 50.00%) a larger area in the villages of the plain.

### Relationships between family types and land size

In the research, relations were investigated between land size and family types. The relevant information about the mountain villages are given in TABLE 1.

**TABLE 1 : The Results of analysis of variance according to family types and average land size in mountain villages**

	Family Type			Total
	Nuclear Family	Large Family	Defect Family	
Total	833	1544	101	2478
Observations	21	35	3	59
Average	39,67	44,11	33,67	42

  

The Results of Analysis of Variance				
Resource of Variance	Total of Squares	Degree of Independence	Average of Squares	F
Between Groups	479,1	2	239,6	0,23
Inside Groups	58562,9	56	1045,8	
General	59042	58		

**Result: Difference between groups are not important according to P=0,05**

**TABLE 2 : The results of analysis of variance according to family types and average land size in plain villages**

	Family Type			Total
	Nuclear Family	Large Family	Defect Family	
Total	439	504	12	955
Observations	28	13	1	42
Average	15,68	38,77	12	22,74

  

The Results of Analysis of Variance				
Resource of Variance	Total of Squares	Degree of Independence	Average of Squares	F
Between Groups	4851,7	2	2425,85	5,35
Inside Groups	17680,4	39	453,34	
General	22532,12	41		

### LSD CONTROLS TABLE

Groups compared	Means Difference	Standard Error of Difference between Group Means		LSD (0.05)	Result
		$S_{x_1} - S_{x_2}$			
Nuclear-Large	-23,09	7,15		-8,647	Important
Nuclear-Defect	3,68	21,67		47,45	Negligible
Large-Defect	26,77	22,10		53,54	Negligible

**Result: difference between groups are important according to P=0,05**

Average land size of 59 families surveyed in Mountain villages is found to be 42 da, 39.67 da in nuclear families, 44.11 da in large families and 33.67 da in defect families. As far as these results, the average land size at the mountain villages is low in defect families and high in large families. According to the analysis of variance test results for family types at mountain villages; no difference was found between the land sizes.

The results of the plain villages are given in TABLE 2.

The Average Land Size and Results of Analysis of Variance According to the Family Types in Plain among 42 families in the villages at plains, average land size is 22.74 da., in nuclear families average size is 15.68 da., 38.77 da. in large families and 12 da. in defect families. According to these results, the average land size at the plain villages is low in defect families and high in large families.

Statistically, a significant difference was observed between the land size and family types according to test results of analysis of variance for the plain villages.

As a result of LSD test, differences were determined among the nuclear-large families between the groups of having  $P = 0.05$  level of significance between average land size and family types.

### **Participation to agricultural production**

Woman activities in production vary depending on the size of business, plant and animal production activities<sup>[18]</sup>. In another study in Tokat, according to the survey results, women are participating in every stage of crop and animal production. However, it was found out that the majority of women took part in tilling and cleaning the hoes and weeds in the crop production and milking in the animal breeding<sup>[16]</sup>.

### **Role of woman farmers in plant production**

Most of the production in the mountain villages of research are arable crops and forage plants. Forage crop production is performed in the field of maximum 11-25 da. Arable crop production is performed in the fields up to 6-10 da. Vegetables, fruit production is carried out in the small sizes and ratio of the farmers who does not cultivate fruit and vegetables is greater than the farmers who cultivates.

In the plain villages of research fruits and vegetables are produced mostly. In the field of 1-5 da. vegetable production is carried out at ratio of 61.91% and fruit production is performed at a ratio of 45.24% maxi-

mum. Moreover, in the field 1-5 da., mostly forage crop production is performed, arable crop production is mostly carried out in the fields of 6-10 da.

Planting is carried out with participation of 49 people (83.05%) at most in crop production at mountain villages. It is followed by anchorage (50.85%), irrigation-harvest (32.20%) respectively. In the villages of the plains attendance is up to 36 people (85.71%) in planting, weeding, irrigation. And it is followed by harvest (80.95%), applying pesticides (57.14) respectively. Especially 1 person applies spraying of pesticides (% 1.69) in the mountain villages while 24 people (57.14%) apply in plain villages.

Women in the villages of mountain and plain plant crops to fulfill their family needs mostly. This ratio is found to be 88.14% at the mountain villages while 83.34% at the plains villages. The percentage of production for both house and market is found to be 8.48% in the mountain villages and 16.66% in the plain villages.

Women in mountain villages determined as a single annual generation of 66.10% as the main production activity. Livestock is the second place with percentage of 30.50%. Fruit and vegetables planting which is the main production in the plain villages has a ratio of 88.09%. Single year production is located in second place with a ratio of 11.91%.

According to the results of the chi-square test within the groups in villages, statistically a significant difference was found with regard to the main production activity. Coefficient of Contingency was found as 0.662.

Annual income of female farmers in the research area mainly consists of plant and animal production. This ratio was 81.36% at mountain villages and 83.33% at the villages of plains. Rate of earning a live only with animal production is 16.95% at the mountain villages while such a situation does not exist in plains. The ratio of just earning a live by vegetable production is 1.69% at mountain villages and 14.29% at plain villages.

According to the results of Chi-square test, statistically a significant difference was found between production activities and groups in villages. Coefficient of Contingency was found to be 0.351.

### **Role of women farmers in animal production**

Care and feeding of animals are the tasks of the housewife and other family members (mostly other women in the house) except man (husband) in rural life

## Regular Paper

in general. Female farmers spend more time and labor than men at all stages of animal production but they do take any part at getting income and marketing of animal products.

The success of all stages of production in rural areas such as livestock, dairy etc. and chances of survival depend on women's commitments, efforts and skills in their life. When people are aware of this quite difficult fact, women would be respected more in the family<sup>[24]</sup>.

Production of dairy products, milking, barn cleaning are the main activities in animal production through research area. Ratio of production of dairy products of women at mountain villages is 94.92% and 80.95% at plain villages. Milking rate of those mountain villages is 96.61% and 80.95% at plain villages. Rate of non-attendance to animal production activities such as cleaning barns, milking, feeding is found to be 3.39% at mountain villages and 19.05% at plain villages. No woman in the groups involved in birth and selling process. According to the results of the chi-square test in order to measure the differences between the groups about participation of women in animal production, no significant differences was observed between the variables.

Furthermore, most women at mountains and the plains are performed animal production for their home needs and market. This ratio is 50.85% at mountain villages and 47.62% for plain villages. Production just for house needs has a proportion of 33.89% at mountain villages and 42.86% at plain villages. Rate of women without any production is found to be 15.26% at mountain villages while 9.52% at plain villages.

### Animal possession of families of female farmers

The second important factor in determining the income level of people in rural areas is the presence of animal property. Presence of farm animals in the families of female farmers is important in terms of family income and as well as projects.

At the farms in the mountain villages among research area generally families have 1-6 (57.63%) farm animals. Families in the plain villages have 1-3(59.53%) farm animals in general. This is followed by the farms having 4-6(19.04%) animals. The limited number of cattle is depending on the fact that families are economically weak and milk production is carried out mainly due to household consumption. For conversion of animal possession to BBHB, coefficients are used as cow

= 1.00; heifers, pregnant heifers = 0.70; beef = 0.40; 0-6 month calf = 0.20; sheep-goat = 0.06<sup>[5]</sup>.

### Quality and presence of the barns of families of female farmers

One of the most important factor affecting the efficiency of barns are technical and hygienic conditions. Most of the farms in mountain villages have wooden barns (76.28%). Concrete barns are located mostly at plain villages (52.38%). According to the results of chi-square test, statistically a significant difference was found between barns throughout the groups. Dependence coefficient is 0,387 that shows the strength of this relationship.

In addition, a large proportion of barns at mountain and plain villages have electricity and water facilities. 7.55% of the barns at mountain villages is lack of electricity and 2,57% in the villages of the plain. 35.85% of the barns at mountain villages has lack of water and it is 5,13% at plain villages.

### Role of female farmers in decision-making process

Even though the family formats vary, for both urban and rural families in Turkey, authority in the family belongs to men generally<sup>[22]</sup>. In rural families, men, women and children are found in different status and the importance varies. Authority is usually at the father and then followed my male children. Women are standing at secondary place in decision-making of family. Participation of women in decision-making at rural areas can be classified as agricultural and non-agricultural, economic and social fields.

Rate of decision making of married women about production and marketing of products was found as 70.6% in the study performed by Abay and his friends<sup>[4]</sup>.

In this study, at mountain villages, participation of women in the decision-making for purchase of is found to be 71.19%, participation in the decision-making to spend the income is found to be 74.58%, participation in the decision-making of the planning of agricultural production is 72.88% and participation in the decision for marrying of children is found to be 71.19% but on the other hand all participations in decision making is found to be 100% at the plain villages. Non-Participation in decision-making at mountain villages is found as 18.64%.

According to chi-square test of differences of par-



ticipations of female farmers in decision-making process, there seemed differences among groups in the villages at all decisions. This difference could be occurred due to participation of all the women of plain villages in decision-making process.

In another study in Tokat, the approach of the males towards the roles of the women has been found to be based on traditional values. On the other hand, the females have been found to have adopted more equalitarian, more democratic and more actively participatory roles both in the context of agricultural activities and also in the context of the family life<sup>[1]</sup>. In another study, although women take role in decisions regarding the purchase of household goods and in the matters related to the education of their children alongside her husband, men are more effective in sorting out the financial matters of the family. In case of investments and credit loaning matters in particular, men take the foreground<sup>[2]</sup>.

### Agricultural extension services

The most effective tool for development of agricultural farms is the applicable high-level knowledge transfer in practice. Agricultural extension, information transfer, degree of quality and knowledge received by farmers have a great importance. On the other hand, education and training of extension expert play a major role. Success of extension services is directly related to extension policies, structures of extension organizations, qualifications of extension staff and approaches applied to the extension system.

Social, economic and cultural development of community depend on equal opportunities for all the individuals and adoption of a balanced approach to genders.

Woman concentrate on housework and men work outside the house in accordance with their gender roles and thus a hierarchical structure against women is formed<sup>[6]</sup>.

Especially women living in rural areas have very low social and economic state than women living in urbanized area. In this respect, women should gain new skills to facilitate and to empower their lives. To achieve this, role of education take place. Necessity of taking extension training for women is emphasized even on environmental protection<sup>[14]</sup>.

There stands many barriers for women in practice at participation to extension services although many women work farmers in their own businesses and par-

ticipate in production activities<sup>[8,12]</sup>.searched on obstacles and barriers at agricultural extension services reaching the women in his study and developed recommendations for the elimination of these. Each country offers extension services together or separately to men and women producers taking into account the properties of socio-cultural and economic structures.

As the head of the house, the man's opinion is important due to the patriarchal family structure in rural areas in Turkey. For this reason, men are addressed and focused in trainings. Women are hardly talked with male publishers when they are without male relatives at different rates according to the destination. Source and time of issue allocated to women are less than services for male producers. In this case, female farmers in agricultural production remained with information given by their partners mostly.

Agricultural extension service only for female farmers are not given in rural areas in Turkey (except for some special projects in pilot areas). Required information in a limited way is given to women by home economists

Hablemitoglu<sup>[9]</sup> states gender inequality faced by women in benefiting from extension services and emphasized a non-discriminatory framework that can be developed especially at planning and implementation stages of the extension work for women.

According to UNDP (United Nations Development Program) indexes, Kizilaslan and Kizilaslan<sup>[12,13]</sup> present that the dimensions of inequality between women and men is getting higher in Turkey and less-developed countries in their study.

### Perspective of husbands to agricultural extension services for female farmers

Attitudes of husbands to training of women in agricultural issues are examined in TABLE 3.

**TABLE 3 : Attitudes of husbands to training of women at agricultural issues**

Attitudes to training for female farmers	Mountain Villages		Plain Villages		General	
	Number	%	Number	%	Number	%
Accept	43	72,88	25	59,52	68	67,33
Do not accept	6	10,17	3	7,14	9	8,91
Do not care	8	13,56	12	28,57	20	19,80
No reply	2	3,39	2	4,76	4	3,96
Total	59	100,00	42	100,00	101	100,00

$\chi^2 = 3,811$ ;  $SD = 3$ ;  $P > 0,05$

## Regular Paper

72.88% of female farmers at mountain villages and 59.52% of the female farmers at plain villages reported that they would ask their husbands for receiving extension service provision (the provision of information). Groups in villages and the attitudes of the husbands for information of women at agricultural issues were tested by the analysis of chi-square and no significant differences were found between them. Consultative status of the husbands in agricultural matters were examined and given TABLE 4.

**TABLE 4 : Demand for consultancy service of women to their husbands**

Consultation	Mountain Villages		Plain Villages		General	
	Number	%	Number	%	Number	%
Yes-every-time	39	66,10	27	64,29	66	65,35
No - never	9	15,25	-	-	9	8,91
Sometimes	9	15,25	13	30,95	22	21,78
No Reply	2	3,39	2	4,76	4	3,96
TOTAL	59	100,00	42	100,00	101	100,00

$\chi^2 = 9,312$ ;  $SD = 3$ ;  $P < 0,05$

66.10% of women in mountain villages stated that their husbands consult them every time for agricultural issues while 64.29% of female farmers in the villages of the plains expressed same attitude. Percentage of husbands who took no advice was 15.25% in mountain villages and 0% at plain villages. According to chi-square test in order to investigate whether there is significant difference between the consultancy of women to their partners in agricultural issues, no statistically significant difference was found. Dependency coefficient was found as 0.291.

### Knowledge and participation status of women at agricultural extension services

Awareness of extension staffs visits to the villages for women is given in TABLE 5.

**TABLE 5 : Awareness of extension staffs visits to the village.**

Awareness	Mountain Villages		Plain Villages		General	
	Number	%	Number	%	Number	%
Yes	25	42,37	23	54,76	41	40,60
No	34	57,63	18	45,24	60	59,40
Total	59	100,00	42	100,00	101	100,00

$\chi^2 = 1,826$ ;  $SD = 1$ ;  $P > 0,05$

42.37% of female farmers at mountain villages were aware of extension staffs visit to their villages and this rate was 54.76% at plain villages.

Traditional values of rural society provide us significant information about the appropriateness of agri-

cultural extension services for women. Traditions, customs and moral judgments should have taken into account to carry out a successful extension work towards rural areas, especially to women in rural and to rural communities. For example, majority of agricultural extension staff are composed of males in Costa Rica. According to the cultural values, male extension staffs cannot communicate with female farmers individually (face to face) in rural<sup>[8]</sup>.

Preference of female extension staffs at agricultural extension for female farmers was studied during the study and results are given in TABLE 6.

**TABLE 6 : Preference of female extension staffs at agricultural extension**

Preference of female extension staff	Mountain Villages		Plain Villages		General	
	Number	%	Number	%	Number	%
Yes	56	94,91	31	73,81	87	86,14
No	3	5,09	4	9,52	7	6,93
It doesn't matter	-	-	7	16,67	7	6,93

$\chi^2 = 11,800$ ;  $SD = 2$ ;  $P < 0,05$

94.91% of women in mountain villages declared it is appropriate that extension services can be given by female extension staffs, on the other hand it was found to be 73.81% at plain villages. Rate of those who does not care is 16.67% at plain villages and there seen no declaration like that at mountain villages.

In order to understand whether there is a relationship between groups at mountain and plain villages according to preference of female extension staffs chi-square test was applied and statistically a significant differences was found. Coefficient of Contingency was found as 0.323. These data indicate that female extension staff would rather work with female farmers particularly at the mountain villages. Benefiting of woman at agricultural extension services were given in TABLE 7.

**TABLE 7 : Utilization of female farmers from agricultural extension services**

Utilization from agricultural Extension services	Mountain Villages		Plain Villages		General	
	Number	%	Number	%	Number	%
Yes	8	13,55	13	30,95	21	20,80
No	51	86,45	29	69,05	80	79,20
Total	59	100,00	42	100,00	101	100,00

$\chi^2 = 4,507$ ;  $SD = 1$ ;  $P < 0,05$

Only 13.55% of female farmers at mountain villages and 30.95% at plain villages stated that they uti-

lized from agricultural extension services. Vast majority of women (79.20%) in research stated that they did not benefit these services. Statistically, a significant difference was found between groups of mountain and plain villages about agricultural extension services. Coefficient of Contingency was found as 0,207. These data indicates that vast majority of female farmers at the mountain villages cannot benefit from agricultural extension services.

At mountain villages, 50% of female farmers benefited from agricultural extension services attended farmer meetings, 25% attended to demonstrations and 25% participated in activities such as handicrafts. 53.85% of the female farmers at plain villages participated to farmers courses, 23,8% participated in activities such as crafts, % 15.38 to demonstrations and 7.69% participated in the farmer meetings. Women did not participate in any activities of exhibitions and promoting events on the days of production.

60.78% of female farmers at mountain villages stated dense work load as the reason of not attending extension activities, 33.33% of them stated that they cannot find enough time. 41.37% of female farmers at plain villages complaint about intense work and % 34.49 said that they cannot find enough time.

Women benefiting from agricultural extension activities were asked to apply what they have learned. 57.15% of women in the study area could apply what they had learned partially. 19.05% said they could not apply what they had learned. They emphasized difficulties such as negligence, lack of land and difficulty of implementation as causes for that. But on the other hand, they stated that they were inclined to try.

Women were asked about the source of information and agricultural activities. Rate of learning from agricultural extension staff is found to be 5.08% at mountain villages meanwhile 21.43% at the villages at plains. None of the female farmers learned agricultural activity from newspaper, television and radio. In order to determine the diversity of women's agricultural activities learning in villages, statistically there was found significant differences according to the chi-square test. Coefficient of Contingency or the dependence coefficient was found to be 0,281.

83.05% of women in mountain villages said that they did not communicate with any extension staff, 15.26% 's reported that extension staff came in when

farmers need them. 64.29% of female farmers at plain villages reported no communication and % 35.71 expressed that extension staffs came when needed. According to the results of the chi-square tests in terms of contacts with extension staff in the villages, statistically significant differences were found. To show what extent this relationship was strong, significant dependence coefficient (Coefficient of Contingency) was found as 0.240.

Women were asked whether they took printed materials from extension services. Only 5.09% of female farmers at mountain villages reported that they received printed material and 19.05% at plain villages stated that. A significant difference was identified according to receiving printed materials from extension services through villages. Coefficient of Contingency was 0,216. Regarding to these data, female farmers at plain villages can receive and utilize from more printed material.

62.72% of female farmers at mountain villages wanted to receive trainings related to handicrafts and 23.73% of them asked to get information about agricultural production techniques. 21.43% of women in the villages of the plains wanted to get trained in the handicrafts and % 64.29 of them stated that they wanted to get information about agricultural production techniques. No woman wanted to study about the training of mechanization. Statistically significant differences were found between the groups according to the information given to women in terms of chi-square test. This difference is due to differences in agricultural tasks between mountain and plain villages. Strength of this relationship was determined with the dependency coefficient of 0,409.

Female farmers were asked for the biggest problem they faced within agricultural activities.

83.05% of women at mountain villages stated the biggest problem as input supply and 15.25% of them stated the biggest problem as marketing. 59.52% of female farmers at plain villages reported the biggest problem as marketing and 28.57% reported the biggest problem as input supply. Differences of problems faced by female producers between the groups were found statistically significant. Coefficient of Contingency was found as 0,482.

### **Features of extension unit**

There seems a clear relationship between productivity and success of organizations, also between num-

## Regular Paper

bers of staff and qualifications of organization. Because extension is based on human training, education stands at the highest level of this relationship. Undoubtedly the most important elements of extension organizations are staff members<sup>[20]</sup>.

Extension unit in the research area was divided into units such as garden, vineyard, farm, livestock, mechanization, irrigation, economics, women's training, ground tests, leaflet-banner-advertisement, computer use and information. Women's training unit consists of only 3 people. One of those three persons is agricultural engineer and other two are technician home economics. A total of 28 staff are working at extension unit in the research area.

32.14% of extension staff working in Farmer Training and Extension Department of Provincial Directorate of Agriculture of Tokat under Ministry of Food, Agriculture and Livestock was composed of 26-35 years old staff and 46.43% was at 36-45 years old and 17.86% of them was between ages 46 - 55. Ratio of 64.29% of extension staff between 36-55 years of age can be said to be an important indicator showing sufficient professional experience of unit.

Qualities of the staff giving training to farmers significantly affect impact and quality of the training. For example, veterinarian or health technician shall lead training because they would be more helpful for questions and problems of rural areas than other extension staff. But there is not sufficient number of veterinarians in extension unit. Livestock unit carries out by technical staff graduated from department of zootechnics in agriculture faculties.

60.72% of the extension staff in the region works as agricultural engineers and profession of 14.28% of them consists of home economics and 25% of them are agricultural technicians.

Personnel responsible for the training of female farmers are usually home economics technicians therefore it is expected to result in lack of information and the ability to solve any problem.

### Extension Unit Studies

Farmers meetings, courses, field days, incentive events have been made as demonstration activities; brochure various on topics, leaflets, circular letters and posters and so on were carried out as training and extension activities. In addition, in-service training programs for extension staff were organized.

Within the scope of women's training; Foods and Nutrition Training and Extension Project, Training and Extension Project for Food Preservation, Home Economics Trainings and Extension Project, Education and Extension project to use iodized salt, Family and Children's Education Project and Agricultural Extension and Applied Research Project (TYUAP) training meetings were held and at the end 1563 female farmers were trained. Female farmers have still participated trainings of "importance of iodine and the use of iodised salt". In addition, the Regional Workshop on Women in Rural Areas was held between 13 -15 October 2010 in Tokat.

Books and booklets were distributed about Food Production and Storage Technologies, Nutrition Education, Practical Cattle Breeding and Storage of Agricultural Products within the scope of Common Farmer Training Project (YAYÇEP).

Veterinarians and agricultural engineers work as agricultural extension officials under the Ministry of Agriculture and Rural Affairs at Tokat province within Project of Development of Agricultural Extension (Tar-Gel). In addition, agricultural consultants participate in the agricultural extension within legal scope of Regulation of Execution of Extension and Consulting Services.

### In Summary

In this study, a comparative analysis of participation of female farmers and possibilities of benefiting from agricultural activities is aimed to perform among the villages of the mountains and plains in Tokat province. Female farmers at the villages of mountains and plains were observed to participate in both plant and animal production during all agricultural tasks in the research area. Despite this active role, women did not take any roles in family decision-making processes and economic issues; they were not very active at social and cultural activities within the family. This situation seems more clear especially in mountain villages. In addition, the level of utilization of female farmers from agricultural extension services was very low.

Furthermore, infrastructures such as roads, health, education and drinking water facilities were found to be inadequate in majority of the villages.

Farmers as individuals can increase their communication skills with their environment by increase of transport facilities, roads. Thus then they can compare their living conditions, urban systems and social systems other

than their local rural area. Thus, farmers as individuals may wish to switch to a lifestyle which is more complex rather than local and traditional lifestyles.

As a result of the research, women in rural society and family are observed at a passive position and automatically perform the behaviors and activities which are expected from them as a woman in of rural.

Problems of female farmers can be overcome at a large extent by the development projects performed by a wide range of public and private institutions. Different methods of training can help female farmers for their self-recognition and real position. Not just women but also men can be trained at the same time because participation of woman in an event without approval of their husband is not possible because of the village society views.

In order to increase the success of agricultural extension for female farmers, organizational structure of agricultural extension may be revised.

A "Branch of Rural Women" carrying out agricultural extension work at the provincial level can be recommended to set up under the Department of Extension and Training of Farmers in Provincial Directorate of Agriculture.

Additionally, increasing and re-performing sociological studies in universities and other research institutions in rural area periodically are considered to be important to observe the changes in the structure of rural society and to find possible solutions.

## REFERENCES

- [1] Anonymous; Hanehalki Isgucu Anketi Sonuclari, T.C.Başbakanlik Türkiye İstatistik Kurumu Yayinlari, Sayi, Mart 2009, Ankara, 38, (2009a).
- [2] Anonymous; Adrese Dayali Nufus Kayit Sistemi 2008 Nufus Sayimi Sonuclari, T.C.Başbakanlik Türkiye İstatistik Kurumu Yayinlari, Sayi, Ocak 2009, Ankara, 14, 26 (2009b).
- [3] Anonymous; Tarim ve Koyisleri Bakanligi, Tokat Tarim İl Mudurlugu 2008 Yili Faaliyet Raporu, Tokat, (2009c).
- [4] C.Abay, G.Saner, E.Atýs; İzmir'de Kırsal Kadýna Yonelik Egitimin İstihdama Etkisi, T.C.Başbakanlik Kadinin Statusu ve Sorunlari Genel Mudurlugu Yayinlari, Ankara, (1999).
- [5] K.Abromeýt; Landwirtschaftliche Betriebslehre, Dlg-Verlag, Frankfurt., (1964).
- [6] A.Arslan; Ders Kitaplarında Cinsiyetçilik, T.C. Başbakanlik Kadin Statusu Ve Sorunlari Genel Mudurlugu Yayinlari, Tasnif No: 07.07 Kssgm 2000, Isbn: 975-19-2612-2 Beyda Ofset Matbaacilik, Ankara, (2000).
- [7] A.Aziz, S.Hasipek, N.Aktas, Y.Ergun, A.Bora, E.Aziz, Ý.Aziz; Kırsal Alan Kadinin İstihdama Katkisi, T.C.Başbakanlik Kadýnın Statusu Ve Sorunlari Genel Mudurlugu Yayinlari, Tasnif No: 13.04 Kssgm 2000, Isbn:975-19-2335-2, Subat, Ankara, (2000).
- [8] S.M.Fallas; Gender Analysis Of Agricultural Extension Service In Costa Rica, Case Study,Central Region Directorate Of The Mimistry Of Agriculture And Livestock.University Of Reading, Agricultural Extension And Rural Development Department.U.K., (1995).
- [9] S.Hablemitoglu; Kırsal Alanda Kadinlara Yonelik Yayim Calismalari İcýn Toplumsal Cinsiyet Analizinin Onemi, Ciftci Ve Koy Dunyasi Dergisi,Sayý, Ankara,179 (1999).
- [10] K.İþýk, A.Saltuk; TKK ILO Ortak Danýþma Toplantýsý, Ankara, (1991).
- [11] G.Kazgan; Turk Toplumunda Kadin, 2.Basým, Kent Basimevi, Istanbul, (1982).
- [12] N.Kizilaslan, H.Kizilaslan; Gender Inequalities In The World And In Turkey, Journal Of Applied Sciences Research, 3(10), 1056-1061 (2007).
- [13] N.Kizilaslan; Rural Woman In Agricultural Extension Training, Research Journal Of Social Sciences, 2, 23-27 (2007).
- [14] N.Kizilaslan; Kırsal Kadinin Cevre Korunmasindaki Rolu, Turkiye 4. Ulusal Tarým Ekonomisi Kongresi, Tekirdag, (2000).
- [15] N.Kizilaslan, A.Yamanoglu; Social Gender Analysis in a Turkish Province. The Province Of Tokat: a case study, New Medit - Mediterranean Journal of Economics, Agriculture and Environment, 9(3), 76-80 (2010a).
- [16] N.Kizilaslan, A.Yamanoglu; Participation of Women In Rural Areas Of Agricultural Production And Domestic Matters In Decision-Making: A Case Study For Tokat Province, The Journal of International Social Research, Woman Studies (Special Issue), 3(13), (2010b).
- [17] E.M.Rogers, F.F.Shoemaker; Communication Of Innovations, The Free Press, London, (1972).
- [18] M.Soyсал; Koy Sosyolojisi, C.Ü.Ziraat Fakóltesi Genel Yayin No:211, Adana, (1998).
- [19] C.Talug,H.Tatlidil; Tarýmsal Yayim Ve Haberlesme Ders Kitabý, Ankara Üniversitesi Ziraat Fakóltesi Baski Ofset Unitesi, Ankara,(1993).
- [20] C.Talug; Meyseb Tarımsal Yayim Calismalarinin Degerlendirilmesi Uzerine Bir Arastýrma, Ankara

## *Regular Paper*

---

- Universitesi Ziraat Fakultesi, Tarým Ekonomisi Bolumu, Yayınlanmamıs Docentlik Tezi, Ankara, (1982).
- [21] H.Tatlidil, Tarımsal Yayım Çalışmalarında Onder Ciftci Yaklaşımı Uzerine Bir Arastırma, Ankara Universitesi Ziraat Fakultesi Yayinlari: 893, Bilimsel Arastırmalar Ve Incelemeler Ankara, **526**, 36-75 (1984).
- [22] S.Timur; Turkiye’de Aile Yapisi, Hacettepe Universitesi Yayinlari, D Serisi, 15 (1972).
- [23] N.Yildirak; Koy Toplumunda Kadin, Ayyildiz Matbaasi, Ankara, 1-14 (1987).
- [24] N.Yildirak; Koy Kadinlarinin Sosyo Ekonomik Ve Kulturel Konumlari, Friederich Ebert Vakfi, Ankara, (1992).
- [25] N.Yildirak, B.Gulcubuk, S.Gun, E.Olhan, M.Kilic; Turkiye’de Gezici Ve Gecici Tarým Iscilerinin Çalışma Ve Yasam Kosullari Ve Sorunlari, Isbn:975-96265-4-3, Ankara, (2003).