



## مشاركة المرأة في الأعمال الزراعية النباتية في ريف السقيلية في محافظة حماة

### The Rural Women Contribution to The Agricultural Plant-Based Work in The Rural Area of Suqaylabiyah (Hama Governorate).

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#### الملخص

هدف البحث إلى تحديد مدى مشاركة المرأة في الأعمال الزراعية النباتية في ريف السقيلية في محافظة حماة، وتقدير طبيعة العلاقة بين درجة مشاركتها في العمليات الزراعية وبعض خصائصها. جُمعت البيانات من عينة عشوائية استناداً إلى استبانة بطريقة المقابلة الشخصية خلال عام 2019، بلغت نحو 142 مبحوثة ريفية من ريف السقيلية في محافظة حماة، تم اختيارهم من المجتمع الكلي الذي قُدِّر بنحو 4645 امرأة تقوم بالأعمال الزراعية، وبالتالي بلغ كسر العينة نحو 3%. أعتد أسلوب التحليل الإحصائي الوصفي كالمدي، والمتوسط الحسابي، والانحراف المعياري، إضافة إلى التحليل الإحصائي الكمي للبيانات كعامل الارتباط البسيط، ونموذج الانحدار المتعدد التدريجي (Step-Wise). بينت نتائج التحليل بأن عملية تصنيع المنتجات النباتية شغل المرتبة الأولى من بين الأعمال الزراعية النباتية التي تقوم بها المرأة في ريف السقيلية وبمجموع درجات قدرها (519) درجة، وهذه النتيجة تفسر مدى اهتمام المرأة بتصنيع المنتجات الضرورية للاستهلاك المنزلي، فضلاً عن توفير كميات للبيع وتحقيق مصدر رزق إضافي للأسرة. كما بينت نتائج التحليل الإحصائي إلى وجود علاقة ارتباط معنوية وسلبية إحصائياً عند مستوى (1%) بين درجة مشاركة المرأة الريفية في أعمال الإنتاج الزراعي النباتي والمتغيرات المستقلة: مهنة الزوج، عدد الأبناء الذين يعملون في الزراعة كمهنة ثانوية، وعلاقة ارتباط معنوية وإيجابية إحصائياً عند مستوى (1%) مع المتغيرات المستقلة عمر المبحوثة، وحجم الأسرة. كما بينت نتائج تحليل الانحدار المتعدد التدريجي (Step-Wise) أن المتغيرات المستقلة، عمر المبحوثة، مهنة الزوج وحجم الأسرة تفسر نحو (79.4%) من التغير في درجة مشاركة المرأة في أعمال الإنتاج الزراعي النباتي وتصنيع المنتجات وبيعها.

**الكلمات المفتاحية:** السقيلية، المرأة الريفية، الأعمال، الزراعة، الأولوية.

#### Abstract

The research aimed to determine the contribution of women in agricultural work in the rural area of Suqaylabiyah in the governorate of Hama and assess the nature of the relationship between the degree

of their contribution to agricultural activities and some of their traits. Data were collected from a random sample of about 142 rural respondents from the countryside of Suqaylabiyah in Hama's governorate, based on a questionnaire using interview method during 2019. They were selected from the total community of about 4645 women involving in agricultural work so the sample fraction reached about 3%. The research followed the descriptive statistical analysis method using the rang, the arithmetic mean and the standard deviation, and also the quantitative statistical analysis method using the simple correlation and the stepwise multiple regression model. The analysis results showed that the processing of plant products occupied the first place among the plant-based agricultural work carried out by women in the rural area of Suqaylabiyah, with a total of 519 degrees. This result explains the extent of women's interest in process products that are essential for domestic consumption, in addition to providing products for sale and offering additional family income source. The results of the statistical analysis also showed that there is a significant and negative statistically correlation at the level of (1%) between the degree of rural women's contribution in agricultural plant production work and the following independent variables: the husband's occupation, the total number of children who work in agriculture as a secondary business. Moreover, the results showed a significant and positive statistical relationship at the level of (1%) with the following independent variables, the respondents' age and the size of the family. The results of the multiple regression analysis (step-wise) showed that, the age of the respondents, the husband's occupation, and the size of the family as independent variables explain about 79.4% of the change in the degree of women's contribution to the work of agricultural plant production and the processing and selling of products.

**Key words:** Suqaylabiyah, rural women, business, agriculture, priority.

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## Introduction

Rural women in the Arab world contribute to the field of agricultural activity in its two parts (livestock and plants) and are considered producers of some products that help raise family income and welfare, in addition to their social role in the family. Furthermore, they work in agriculture in the irrigated and rain-fed area and in the cultivation of food crops such as corn, rice, wheat, vegetables, fruits and oilseeds (FAO, 2011).

Rural women represent the majority of workers in agriculture in many developing countries, but they receive very little support, and in many African countries, women form more than 60% of the workforce in agriculture (The Arab Organization for Agricultural Development 1,2, 1999). In the rural areas, women play a prominent role in the rural economy, as they assist men in various fieldworks, including arduous work, such as hoeing, and women are directly responsible for family and productive stores (Khushboo, 2018).

According to the researchs, in northern Syria, harvesting, planting, thinning, collecting hay, seedlings, and hoeing were the priority among rural women in agricultural and plant production (Ninal, 2005; Abdelali-Martini and Dey de Pryck, 2015). First, the nature of works was the main reason, and the social customs in the rural areas was the second.

Previous research, in Nigeria, found the percentage of women consulted by men in agricultural processes including (land preparation – the time of sowing - the time of weeding - the time of harvest)

was 20% of the total sample while considering this opinion fluctuated between 1-14%, the consultation for obtaining Agricultural Finance sources (28%) (Damisa, Yohana, 2007).

In rural Africa, women do more than 60% of agricultural work, and it is their responsibility to market and produce nearly 70% of food (United Nations, 2011). Also, women and men participate equally in animal care and fieldwork, while the men contribution to rural industries is 13.8%, and women contribution is 86.7% (Abdullah and Essa, 2014).

The role of Syrian rural women in development cannot be neglected, as they play a major role in agricultural production. They often implement agricultural processes and activities and manage agricultural and non-agricultural economic activities to improve the family's income and livelihood. Therefore, a concern for women in general and rural women in particular is important (Khaldi, 2007).

Furthermore, Nasra (2013) outlined that, in Syria (Masyaf), 45.7% of the respondents had a moderate degree of contribution to agricultural plant production work, and 55.1% of them had a high degree of contribution to the work of breeding farm animals, while 89% of them had a moderate degree of contribution to household decision-making, and 46.5% of them had a low and medium degree of contribution to farm decision-making processes.

A research was conducted by Al- Zoubi,( 2010) showed that, in Syria (Daraa), there was significant relationship between the age and the educational level of respondent as independent variables and dependent variables of women's role in the economic field at level (0.01). Also, there was insignificant relationship between the number of children as an independent variable and the role of women in the economic field as a dependent variable at level (0.05), but the significant relationship has not been proved result indicated that the following variables, respondent's job, respondents income, the social status of respondent, kind of respondent family .

**The research problem:** The above discussion has highlighted the role of the rural women, but until now, contemporary analysts have made little attempt to analyze in details the level of women's contribution to the agricultural plant-based activities in Syria. This research problem is compounded by the fact that the last decade was characterized by the provision of government assistance to rural families through the implemented development projects; such projects were represented by cash and in-kind loans and the training courses carried out by these projects. So this raise question: What is the degree of rural women contribution to agricultural and plant activities (plant production sector) in the rural area of Suqaylabiyah?

**The research important:** The rural development is vital to the economic social and environmental viability of nations. It is essential for poverty eradication since global poverty is overwhelmingly rural. As food security has become the most important and crucial issue, the local and international communities have to emphasize the importance of agricultural production and examine factors affecting this production. Plant production is an essential component of the agricultural output, as it contributes to providing various plant commodities and products necessary to feed the population in Syria, and its share value accounted for 65% of the value of agricultural production in 2010. It increased to 65.2% in 2017 (Central Bureau of Statistics, 2018). Rural women contribute to most agricultural activities in the various Syrian governorates, where the percentage of their contribution to manual harvesting, packing, hoeing, weeding, and sowing processes ranges from 40-50%, while their contribution to soil preparation and fertilization practices ranges from 20-40%.

Meanwhile, women's contribution to the rest of agricultural practices such as harvesting, pest control, plowing, pruning, and grafting reduced to less than 20% (Ministry of Agriculture and Agrarian Reform, 2003). Based on the importance of women in the Syrian society; it has become imperative to empower rural women to exercise their rights, especially those represented in productive economic practices (which play a major role in increasing production and improving family income) through developing plans and assessing actual needs to implement programs for the development of rural women; raising their productive efficiency and improving their skills in agricultural work in various activities. From the preceding, it can be argued that the research importance is relayed on the great importance of the role of rural women in contributing to agricultural work and thus improving the economic return of the rural population.

**Research objectives:** The general objective of this research is to determine the women's contribution to agricultural plant- based production activities in the rural area of Suqaylabiyah in Hama Governorate. The specific objectives of this research are:

- 1- Determining the priority and the level of rural women's contribution to the agricultural plant-based production practices and the processing and selling of plant production.
- 2- Determining the nature of the relationship between some of women personal traits and the level of rural women contribution to agricultural plant- based production activities.

**Research variables:**

**Dependent variable:** the level of women's contribution to the agricultural plant-based activities (Y), the value of this variable was calculated by assigning a score to the contribution of each respondent in relation to the work of agricultural plant-based production activities and the process and sale of products, based on the Likert scale, then the total scores were calculated.

Thirteen independent variables were selected, these independent variables are:

- 1- Age of the respondent (x1), it is measured by the total number of years.
- 2- The educational level of the respondent's (X2).
- 3- The educational level of the respondent's husband (X3).
- 4- The husband's occupation (X4).
- 5- The husband presence in the family (X5).
- 6- Family size (x6). It is calculated by the total number of family.
- 7- The total number of children who work in agriculture as a main occupation (X7).
- 8- The total number of children who work in agriculture as a secondary occupation (X8).
- 9- Carrying out housework (x9).
- 10- Family holding size of land (X10).
- 11- The respondent's holding size of land (X11).
- 12- Process some agricultural products (X12).
- 13- Selling some products that they made (X13).

**Research hypotheses:**

- 1- There are no significant relationships between the level of rural women's contribution to agricultural plant -based production (y) on one side and each of the thirteen mentioned independent variables on the other side.
- 2- There is significant relationships between the level of rural women's contribution to agricultural plant based production practices on one side and each of the thirteen mentioned independent variables on the other side.

**Research Methodology:****1- Data source:**

- Primary data: primary data were collected based on personal interview using a questionnaire specially designed for this research. Data were collected from a sample of 142 interviewee, They were selected from the total community of about 4645 women who contribute to plant production, the questionnaire included a set of questions about some personal, social and economic characteristics.

-Secondary data: the main sources were previous research studies, censuses, government, department records (e.g. Department of Agriculture and Agrarian Reform in Al-Ghab region) .

**2- Research sample:** Using the simple random sample method, a sample of 142 rural women in the study area was selected randomly. the total community of about 4645 women involving in agricultural work so the sample fraction reached about 3% (Department of Agriculture and Agrarian Reform in Al-Ghab region, 2019). The questionnaire data were collected during the year 2019. The SPSS program was used to conduct Statistical analysis and to analyze the research data. Also, all percentages, range, arithmetic mean, standard deviation, simple correlation coefficient, and step-wise regression model were used.

**3-Research methodology:**

**Basis of scoring the dependent variable:** The values of the first dependent variable were calculated by assigning a score to the contribution of each respondent in relation to the work of agricultural plant-based production activities and the process and sale of products, based on the Likert scale (Ktabachnick and Fidell, 2001). Then the total scores were calculated for the different plant agricultural production processes and manufacturing and sale products. Nineteen agricultural practices have been selected and the practicing behavior for each practice was recorded for every interviewed woman, these practices were (1- Land preparation 2- planting 3- Seedling preparation 4- Seedling 5- Fertilization 6- thinning 7- Patching 8- Peeling 9- Seed preparation 10- Hoeing 11- Irrigation 12- Pest control 13- Harvesting or picking 14- Collection of products 15- Agricultural Residue collection 16- Haying 17- Agricultural Residue transportation 18- processing 19- Selling products), the theoretical range ranged between (19-76) degrees, and Table (1) shows the level of the respondents' contribution to the agricultural plant-based production practices and the processing and selling of products.

**Table (1). The level of the respondents' contribution to the agricultural plant –based production practices and the manufacturing of products**

Statement	Grads
Always participate	4
Sometimes participate	3
Rarely participate	2
Never participate	1

Source: Likert Scale (Ktabachnick , Fidell, 2001)

The analytical analyses of dependent variable is illustrated below:

**Table (2). The analytical analyses of the dependent variable.**

Activities	Mean	Standard Deviation	Sum	Lower-bound	Upper-bound
Land preparation	1.387	0.594	197	1	4
Planting	1.634	0.821	232	1	4
Seedling preparation	3.423	0.728	486	1	4
Planting seedling	3.035	0.941	431	1	4
Fertilization	1.472	0.805	209	1	4
Thinning	3.437	0.719	488	1	4
Replanting	3.254	0.709	462	1	4
Uprooting	3.458	0.721	491	1	4
Seedling preparation	3.577	0.645	508	1	4
Hoeing	3.563	0.668	506	1	4
Irrigation	1.662	0.890	236	1	4
Pest Control	1.613	0.921	229	1	4
Harvesting or Picking	2.317	1.257	329	1	4
Collection of products	3.014	0.674	428	1	4
Agricultural Residue collection	2.986	0.684	424	1	4
Haying	2.838	0.769	403	1	4
Agricultural Residue transportation	2.979	0.679	423	1	4
Processing of products	3.655	0.725	519	1	4
Selling products	2.099	1.061	298	1	4
Sum	51.401	4.246	7299	38	62

Basis of scoring the independent variables: Table (3) the scoring of the independent variables.

**Table (3). Basis of scoring the independent variables**

Number	Variable	Basis of scoring the independent variables
1	Age of the respondent (X1)	the total number of years
2	The respondent's educational level (X2)	1 - Illiterate 2 – primary school 9 – preparatory school 12 – secondary school 14 – college 16-university
3	The educational level of the respondent's husband (X3)	1 - Illiterate 2 – primary school 9 – preparatory school 12 – secondary school 14 – college 16-university
4	The husband's occupation (X4)	1 - dead 2 - employee 3 - self-employment 4- farmer
5	The husband presence with the family(X5)	1 - always 2- sometimes
6	Family size (X6)	A total number of individuals
7	Total number of children who work in agriculture as a main occupation (X7)	A total number of individuals
8	Total number of children who work in agriculture as a secondary occupation (X8)	A total number of individuals
9	Carrying out housework (X9)	1 – carrying housework by herself 2- getting help
10	Family holding size of land (X10)	The total area in donums
11	Respondents holding size of land (X11)	The total area in donums
12	Process some agricultural products (X12)	0- do not process 1- processing
13	Selling some products that they made (X13)	0- Do not sell 1- Sell

### Results and discussion:

**1- The level of contribution in plant-based agricultural production activities, processing and selling of products:** the total scores of plant -based production activities, processing, and selling of the products were calculated, 19 practices, and the actual range ranged between (62-38) degrees, with an average of 51.4 degrees and a standard deviation of (4.25) degrees, and by dividing the range into three groups of equal length and ascending ordered, it was found that 49.3% of the respondents had low contribution to the agricultural plant- based production practices and processing of products and their sale, ( Table 4).



**Table (4): The distribution of the respondents according to the level of their contribution to the plant-based agricultural production practices, processing and selling of their products**

Level	Frequency	%
low (38- 45)	70	49.3
Medium (46-53)	49	34.5
High (54-62)	23	16.2
Total	142	100

Source: Calculated and analyzed from the sample data, 2019

**2- Age of the respondent:** the number of years was used to calculate the values of this variable, as the actual range of the respondents ranged between 26-65 years, with an average of 40.9 years, and a standard deviation of 5.76 degrees, and by dividing the range into three equal length groups and ascending ordered, the result showed that 62% of the respondents belong to the age group 38- 65 years, which is an economic age group, however, this is a good indicator to their ability in doing all agricultural works and improve their families income, (Table 5).

**Table (5): The distribution of the respondents according to their ages**

Category	Frequency	%
26-38	50	35.2
>38- 51	88	62.0
>51- 65	4	2.8
Total	142	100

Source: Calculated and analyzed from the sample data, 2019.

**3- The educational level of the respondent:** to calculate the values of this variable, one score was given to the illiterate respondent, two scores for the respondent with primary education, nine scores for middle education, and so on according to the total number of years of schooling. Moreover, the actual range ranged from 1- 16 degrees, with an average of 4.56 degree, and a standard deviation of 3.98 degrees, and by dividing the theoretical range into six categories, it was found that (31%) of the sample hold a high school, and about 20.4% had college certificate. It is concluded that 62% of the respondents with reasonable educational level which help to be informed by the latest results and instructions of scientific research institute to apply and implement in agricultural process (Table 6).

**Table (6) the distribution of the respondents according to the educational level**

Category	Frequency	%
Illiterate	4	2.8
Primary school	18	12.7
Preparatory school	22	15.5
Secondary school	44	31.0
Institute	29	20.4
University	25	17.6
Total	142	100

Source: Calculated and analyzed from the sample data, 2019.



**4-The educational level of husband:** the actual range ranged between (1-17) degrees, with an average of 7.73 degrees and a standard deviation of (4.38) degrees. By dividing the theoretical range into six categories, it was found that 28.9% of the respondents' spouses hold high school education, the result showed that 72% of the respondents' husbands have good educational skills which is a good index reflects their ability in monitoring and control project, and then following up with a later agricultural information to improve and develop production (Table 7).

**Table (7) Distribution of the respondents' spouses according to the educational status in the study sample**

Level	Frequency	%
Illiterate	2	1.4
Primary school	14	9.9
Preparatory school	24	16.9
Secondary school	41	28.9
Institute	33	23.2
University	28	19.7
Total	142	100

Source: Calculated and analyzed from the sample data, 2019

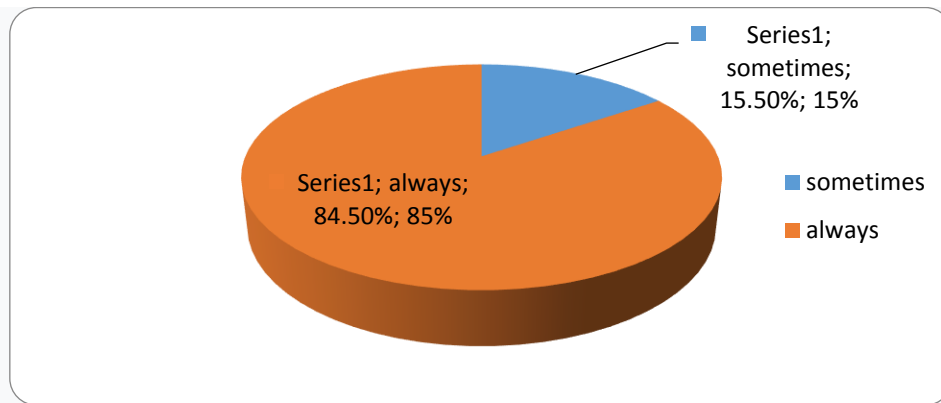
**5- The husband's occupation:** The actual range ranged between (1-4) degrees, and by dividing the range up to four groups, 66.9 % of the respondents' husbands were farmers (Table 8). Thus, husbands could be assumed to be women supporter with their work in agriculture.

**Table (8) The distribution of the respondent's husbands according to their Occupation**

Category	Frequency	%
Dead	6	4.2
Works in agriculture	95	66.9
Work in public sector institutions	22	15.5
Work in private sector	19	13.4
The total	142	100

Source: Calculated and analyzed from the sample data, 2019.

**6-The husband's presence with the family:** the actual range of this variable ranged between 1-2 degrees, and by dividing the range into two groups, 84.5% of the respondents declared that husbands tend to be with the family all the time, Figure (1).



**Figure (1): The husband's presence with the family**

Source: Calculated and analyzed from the sample data, 2019.

**7- Family size:** it was calculated by the total number of individuals in a family. The size of the smallest family was found to be 2 individuals, while the largest was found to be 7 individuals. The average size was found to be (5) and standard deviation was found to be (0.99), and by dividing the range into three groups, it was found that 92.3% of the respondents had family members ranging between 4-6 members (Table 9). This might be related to that the nature of the agricultural work which encourage families to have more children who might engaged in the farm activities

**Table (9): The distribution of the sample according to their family size**

Size	Frequency	%
Less than 4 individuals	9	6.3
From 4-6 individuals	131	92.3
More than 6 individuals	2	1.4
The total	142	100

Source: Calculated and analyzed from the sample data, 2019

**8- The total number of children who work in agriculture as a main occupation:** it was calculated by the total number of individuals who work in agriculture as main, as the actual number range ranged between 1-4 individuals, and by dividing the range into three groups of equal length. It was found that 85.2% of the sample individuals ranged from 1-2 children who work in agriculture as a main occupation, (Table 10). This reflects that children in rural areas work with their parents' farm and indicates that children offer support to their families.

**Table (10): The distribution of the respondents according to the total number of children who work in agriculture as a main occupation**

Group	Frequency	%
< 2 individuals	13	9.2
2-3 individuals	121	85.2
> 3 individuals	8	5.6
Total	142	100

Source: Calculated and analyzed from the sample data, 2019.

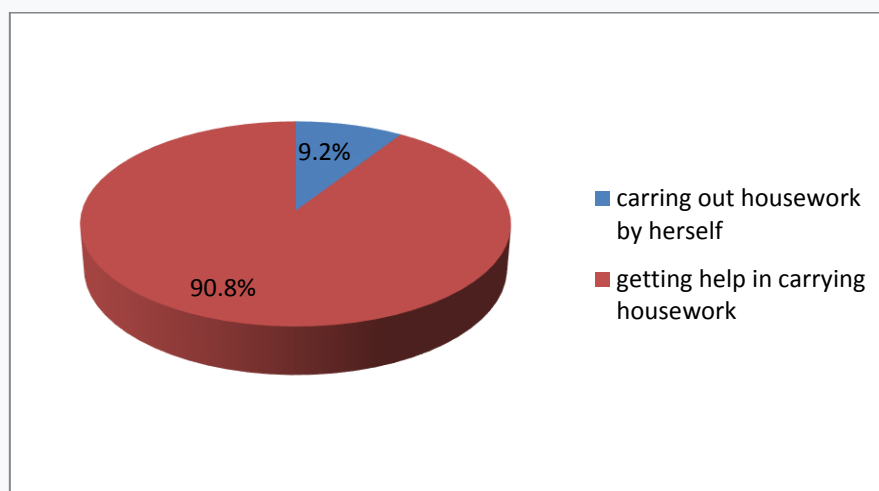
**9 - Children who work in agriculture as a secondary occupation:** it was calculated by the total number of children who work in agriculture as a secondary occupation, as the actual number range ranged between 1-3 individuals, and by dividing the range into three groups of equal length and ascending ordered, the results revealed that 88.7% of the respondents had two children who work in agriculture as a secondary occupation (Table 11). It raises awareness to the importance of the child labour in agriculture, and traditional attitudes towards children's participation in agricultural activities .Such activities are not always child labour. Age- appropriate tasks that are of lower risk and do not interfere with child's schooling and leisure time can be a normal part of growing up in a rural environment.

**Table (11): the distribution of the respondents according to the total number of children who work in agriculture as a secondary profession**

Group	Frequency	%
Less than 2 people	11	7.7
2 people	126	88.7
More than 2 people	5	3.5
Total	142	100

**Source: Calculated and analyzed from the sample data, 2019.**

**10 – Carrying out housework:** To calculate the variable's values, one score was given in case the respondent do housework by herself, and two scores in the case of getting help in doing housework, where the theoretical and actual range number ranged between 1-2 degrees, and by dividing the theoretical range into two groups of equal length, It was found that 90.8% of the respondents do their household work by themselves Figure (2). This reflects that rural women simultaneously manage double responsibilities



**Figure (2). The respondents distribution according to the carrying out**

**Source: Calculated and analyzed from the sample data, 2019.**

**11- Family holding size of land:** To calculate the variable's values, the total number of donums owned by the family was used as a numerical indicator of the area of an agricultural holding, where the actual range of this variable ranged between 8-47 donums, the average of holding size was 23.32 donums, and the standard deviation was found to be (8.23) degree. By dividing the range into Three groups of equal length, the results showed that 56.3% of the respondent's family holds more than 20-33 donums (Table 12).

**Table (12): The respondents` distribution according to the family holding size of land**

Size	Frequency	%
< 8-20 donums	57	40.1
> 20-33 donums	80	56.3
>33 donums	5	3.5
Total	142	100

**Source: Calculated and analyzed from the sample data, 2019.**

**12- The respondent's agricultural holding size:** to calculate the variable's values, the total number of donums owned by the respondent was used as a numerical indicator of the agricultural holding size, where the actual number range ranged from 2-37, with an avareage of 15.6 donums and a standard deviation 6.55 degrees. By dividing the actual range into three groups of equal length, it was found that 50% of the respondents hold more than 2-13 donums. Thus, in spite of the small size of holding lands, most respondents hold their owns, and by exploiting sush lands family income can be improved.

**Table (13): The respondents' distribution according to the holding size of land**

Size	Frequency	%
> 2-13 donums	71	50.0
>13-24 donums	61	43.0
>24- 37 donums	10	7.0
Total	142	100

**Source: Calculated and analyzed from the sample data, 2019.**

**13- processing of some plant products:** To calculate the variable's values, seven products were identified these were, wheat bulgur ,tomato paste , pickles , dried vegetables , jams , raisins ,and vermicelli. to calculate the variable's values, one scors was given in case the respondent did not process the plant products. And two scores for processing plant products, where the actual number range ranged between 0-1, and by dividing the range into two groups, it was found that 88.7% of the respondents processing plant products, and 11.3% of the respondents do not process plant products at all, (Table 14). The high percentage of respondents who process plant products encourage to start training courses targeted rural women in the study area to develop and improve their processing skills and making more income related to such activity.

**Table (14): The respondent's distribution according to the processing of plant products**

Category	Frequency	%
Processing	126	88.7
not processing	16	11.3
Total	142	100

**Source: Calculated and analyzed from the sample data, 2019.**

**14 - Selling the processed products:** to calculate the variable's values, one score is given for not selling, and two scores for selling some processed products, the actual range ranged between 1-2, and by dividing the range into two groups, 76.2% of the respondents sell their processed plant products (Table 15). It could be concluded that most respondents help their family by selling processed plant products which is a good indicator that illustrates the level respondents contribute to the husband's participation in additional work, such as the sale process, in order to improve family income.

**Table (15): The respondent's distribution according to the sale of the processed plant products**

Category	Frequency	%
Sell products	96	76.2
Do not sell products	30	23.8
Total	126	100

**Source: Calculated and analyzed from the sample data, 2019.**

**15-The level of rural women contribution in plant- based agricultural production activities:** it can be shown from Table 16 the level of rural women contribution to the plant -based agricultural production activities, , and selling of their products in the study area for the year 2019.

The results in Table (16) present that the rank order of rural women contribution to the agricultural production plant-based works was as follow: plant products processing was the highest with a total score of 519 degrees; the result explains the women's interest in processing agricultural products that are essential for home consumption, in addition, provide products for sale which offer an additional source of income to their families.

Activities such as, seed preparation, hoeing, uprooting, thinning, seedling preparation, replanting, and planting seedlings) ranked from second to eighth respectively. These tasks are preparatory agricultural procedures during the production process, and the results of statistical analysis indicated that 53.9% of the respondents, on average, had the degree of their contribution to these actions permanently. These results explain the great role of women played was formed in helping men do non-stressful work and save the costs of using paid labour, which could be important in lacking labour availability.

**Table (16) The level of rural women contribution in the plant-based agricultural production activities, processing, and selling their products**

Activity	Always		Sometimes		Rarely		Never		Total	Score	Rank
	Frequency	%	Frequency	%	Frequency	%	Frequency	%			
Processing of products	109	76.8	22	15.5	6	4.2	5	3.5	142	519	1
Seed preparation	93	65.5	39	27.5	9	6.3	1	0.7	142	508	2
Hoeing	93	65.5	37	26.1	11	7.7	1	0.7	142	506	3
Uprooting	82	57.7	45	31.7	13	9.2	2	1.4	142	491	4
Thinning	79	55.6	48	33.8	13	9.2	2	1.4	142	488	5
Seedling preparation	78	54.9	48	33.8	14	9.9	2	1.4	142	486	6
Replanting	57	40.1	65	45.8	19	13.4	1	0.7	142	462	7
Planting seedlings	54	38.0	50	35.2	27	19.0	11	7.7	142	431	8
Collection of products	32	22.5	81	57.0	28	19.7	1	0.7	142	428	9
Agricultural residue collection	31	21.8	79	55.6	31	21.8	1	0.7	142	424	10
Agricultural residue transportation	30	21.1	80	56.3	31	21.8	1	0.7	142	423	11
Haying	24	16.9	79	55.6	31	21.8	8	5.6	142	403	12
Harvesting or picking	42	29.6	15	10.6	31	21.8	54	38.0	142	329	13
Selling products	19	13.4	30	21.1	39	27.5	54	38.0	142	298	14
Irrigation	1	0.7	37	26.1	17	12.0	87	61.3	142	236	15
planting	2	1.4	25	17.6	34	23.9	81	57.0	142	232	16
Pest Control	11	7.7	10	7.0	34	23.9	87	61.3	142	229	17
Fertilization	1	0.7	25	17.6	14	9.9	102	71.8	142	209	18
Land preparation	2	1.4	2	1.4	45	31.7	93	65.5	142	197	19

**Source: Calculated and analyzed from the sample data, 2019.**

The results present that the processes of packing production in packaging, collecting and transporting the residue, haying and harvesting occupied the ninth and thirteenth place, respectively, and these works fall within the post-harvest agricultural processes. The statistical analysis results indicated that 22.4% of the respondents, on average, had the degree of their contribution permanently, these results explain the extent of women's contribution in helping men do work after the harvest.

Selling products, irrigation, agriculture, pest control, fertilization, and land preparation occupied the fourteenth and nineteenth place, respectively, these activities are stressful agricultural tasks. The statistical analysis results indicated that 4.4% of the respondents on average had the degree of their

contribution permanently; these results describe women's reluctance to contribution to these stressful tasks that are likely to be masculine businesses.

#### 16- The relationship between the degree of contribution and the studied independent variables:

The results of the statistical analysis presented in Table (17) show the nature of the relationship between the degree of rural women's contribution to the work of plant-based agricultural production, processing, and selling of plant products and the independent variables.

Using simple correlation coefficient value (r) pearson, the results indicate that there are significant and statistically negative correlations at the level 1% between the degree of rural women's contribution to agricultural plant –based production work on one side and the followings independent variables on the other side. The independent variables are: the husband's occupation, the total number of children who work in agriculture as a secondary occupation. Whereas, there are significant and statistically positive correlations at the level 1 % with the following independent variables: the age of the respondent, and the size of the family, while the total number of children who work in agriculture as a main occupation correlated positively and significantly at 5%.

**Table (17): The contribution of rural women in the work of agricultural plant production, the processing and selling of plant products and their relationship to independent variables.**

Variables		Correlation Coefficient Value (r)	Probability (p)
(X1)	Age of the respondent	0.514	**
(X2)	The educational level of the respondent	-0.004	
(X3)	Husband's educational level	-0.016	
(X4)	Husband occupation	-0.397	**
(X5)	Husband's presence in the family	-0.059	
(X6)	Family size	0.505	**
(X7)	Total number of children who work in agriculture as main occupation	0.215	*
(X8)	Total number of children who work in agriculture as a secondary occupation	-0.358	**
(X9)	Carrying out houseworks	-0.005	
(X10)	Family holding size of land	-0.082	
(X11)	Respondents holding size of land	-0.131	
(X12)	The degree to which some vegetables are processed	0.029	
(X13)	The degree of selling some products they made	-0.089	

**Source: the study sample. \*: Significant at the level of 5%. \*\*: significant at 1%.**

The results of the statistical analysis decide the nature of the relationship between the degree of rural women's contribution to the work of plant-based production and the processing and selling of the plant products and the independent variables, using the multiple-regression correlational (step-wise) analysis. The results present the possibility of reaching a model that includes only three independent variables. The equation can be as follows:



$$Y = 40.147 + 0.215 X_1 - 1.446 X_4 + 1.137 X_6$$

$$(12.559) (3.391) (-2.287) (3.063)$$

$$R = 0.794 \quad R^2 = 0.63 \quad F = 25.117 \quad \text{sig} = 0.00$$

Whereas:

Y: the degree of rural women contribution to the work of agricultural and plant-based production and the processing and selling of products.

X1: Age of the respondents. X4: Husband occupation. X6: Family size.

The previous equation shows the significance of the model used for the estimation at the level of (1%), where the calculated value of (F) reached (25.117), and the value of the coefficient of determination ( $R^2 = 0.63$ ) indicates that the age of the respondent, the husband's profession and the size of the family explain about (63%) of the change in the degree of The contribution of women in the work of agricultural plant-based production and the processing and selling of products, while the remaining proportion (37%) of this change is explained by other variables that have not been studied.

## Conclusions

The analysis results showed that the processing of plant products occupied the first place among the plant-based agricultural work carried out by women in the countryside of Suqaylabiyah, with a total of 519 degrees. This result would emphasise women's interest in processing products that are essential for family consumption, and getting cash money. The results indicated that there is a significant and negative statistically correlation at the level of (1%) between the degree of rural women's contribution to agricultural plant-based production work and the following independent variables. These variables are: the husband's occupation, the total number of children who work in agriculture as a secondary occupation. Moreover, the results showed a significant and positive statistical relationship at the level of (1%) with the following independent variables, the age of respondents and the family size. The results of the multiple regression analysis (step-wise) showed that the independent variables, the age of the respondents, the husband's occupation, and the family size explain about (79.4%) of the change in the degree of women's contribution to the work of agricultural plant-based production and the processing and selling of products. The results stresses the importance of contribution that rural women in Suqaylabiyah offer to community in general and to family in particular, this remarkable contribution might spurs productivity gains, enhance growth and improv development prospects for rural communities.

## Recommendations

1. Conducting training courses in the study area of Suqaylabiyah that aim to raise women awareness about the importance of processing plants products due to its role in increasing family income and improving the standard of living.
2. Intensifying training programs that concentrate on providing services to agricultural crops, and focusing on the optimal agricultural dates set by Ministry of Agriculture to enhance the efficiency of rural women and develop their skills.
3. Increases the women awareness about the importance of their role in shaping strategies on all issues that affect their life, including improved food and better rural livelihood.

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