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Socio-economic characteristics of Tomato Farmers in Renk County of Upper Nile State - South Sudan

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Abstract

This study was initiated with the objectives to analyze socio-economic characteristics of tomato farmers in Renk county of Upper Nile state - South Sudan in the period of 2015. A survey was conducted using structured questionnaires to collect primary data from 100 tomato farmers. These questionnaires distributed randomly among the farmers of tomato in Renk County.

The study revealed that the majority of respondents ages ranged between 30 - 40 years (37%) and minority less than 30 years and above 50 years (16%). All respondents were male gender (100%). Furthermore, majority of respondents for educational level were in primary (36%), work experience of majority of respondents ranged between 5-10 years (38.0%) while minority ranged between 20 – 30 years, for land ownership respondents revealed that majority of farmers are renting land (61%) in addition to that minority were owners (29%). Moreover, majority of respondent revealed that they do not have access to extension services (98%) and minority have access (2%). Lastly for credit services vast majority of respondents revealed that they do not have access (99%) while minority have access (1%). The most significant finding is that the farmers lack extension services, this indicates that they do not have technical knowhow for the tomato production.

Keywords: Socio-economic characteristics, Tomato farmers and Renk County

1. Introduction

Tomato (*Lycopersion esculentum* mill.) is one of the leading vegetable crops worldwide, with average under production estimated at 4.421 million hectares and production of a total output close to 120.384 million metric tons in 2003 **(FAO, 2004)**.

The crop is used fresh for green salad, for cooking and provides raw material for manufacturing of tomato paste industry and juice. There is an increasing demand for tomato as fresh crop among consumers. Tomato ranks next to potato and sweet potato in production, but as canning crops, it takes the first rank among the vegetables **(Michele, 1996)**.

Tomato is one of the highest nutritive values of human food. It is a good source of vitamins A, B (Thiamin) and excellent source of vitamin C (Ascorbic acid) which is commonly deficient in the diet. Also tomato is a good source of minerals. Tomato and citrus are considered as the most dependable sources for supply of vitamin A and B. It is beautiful to look upon and most people eat it with great relish, as fresh or cooked. It is processed into cannery vegetable as paste and pure concentrates, packed whole or processed as soup, as a ketchup and tomato enters into various other condiments. Tomatoes are baked, escalloped and used in countless dishes with rice cheese and macaroni **(Hassan, 1986)**.

In South Sudan tomato are grown all around the country as a winter crop (main season) and as an off-season crop during summer and autumn. In Upper state the farmers are growing tomato by pump irrigation system a long Nile bank, while in greater equatorial states were Produce by rain-fed irrigation system in small scale for purpose of self- sufficiency and marketing. This study aimed to analyze socio-economic characteristics of Tomato farmers in Renk County northern part of Upper state in South Sudan these informations of socio-economic characteristics analysis could indicate opportunities for improving tomato production through involving definite categories of ages, gender, experience, extension services and credit services which play a key role in influencing production planning.

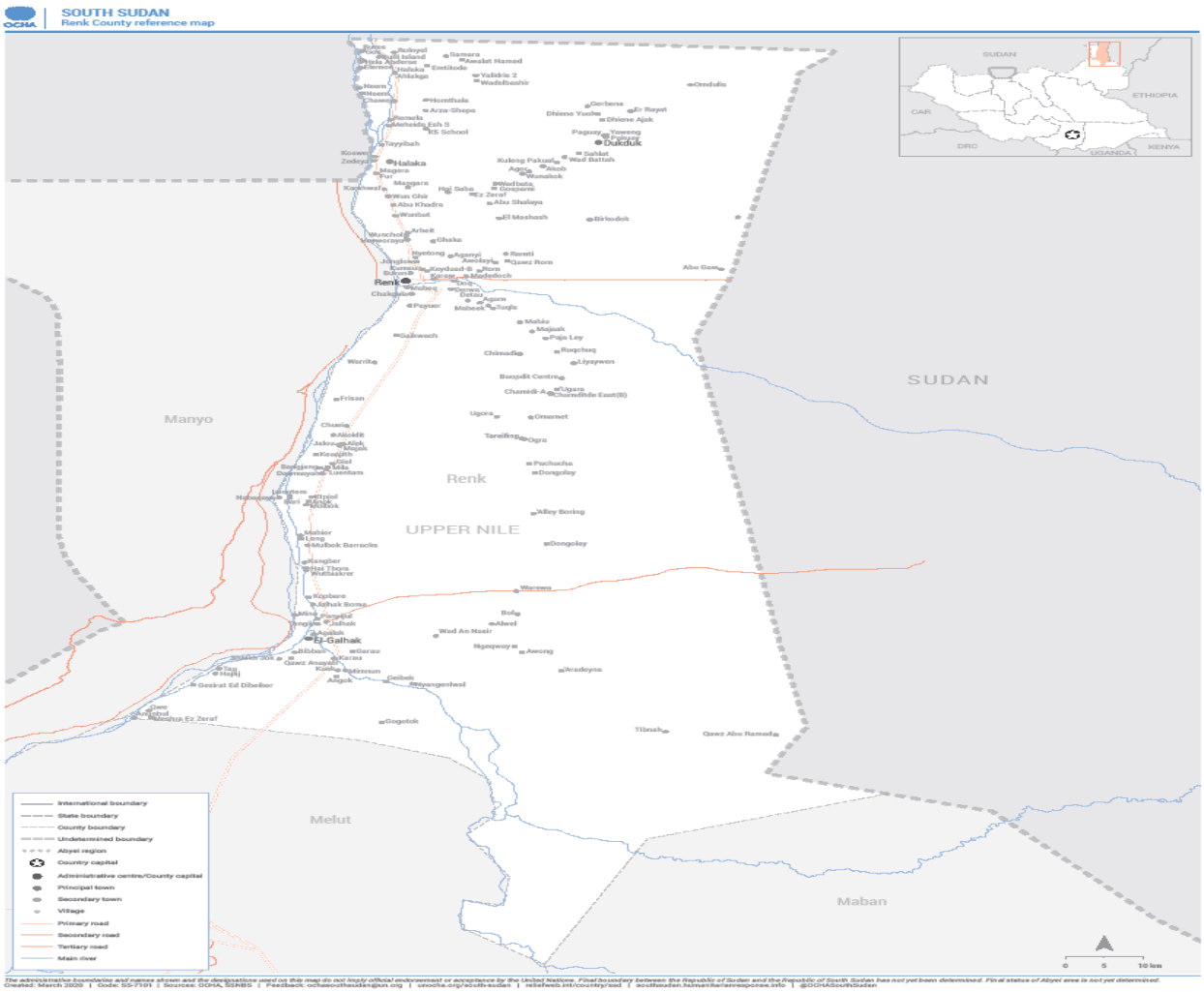
2. Materials and Methods:

2.1 The study area:

The study was conducted in Upper Nile State (Renk County). It is one of the ten states of the Republic of the South Sudan covering total area of 77,773 square km, with population estimates about 137750 persons according to Sudan population and housing **(Sudan Census . 2008).** Sharing borders with Ethiopia from the East and the Republic of Sudan from the north. From inside South Sudan sharing borders with unity state in the west and Jonglei state in the south according to National Statistic Bureau of South Sudan **(2008)**.

Tomato ranks the top of crops grown in Upper Nile state in terms of area coverage which constituted about 80% of the total horticultural crop cultivated areas. Due of its large areas of fertile soil, abundant amount of water from Nile, rains as well as water pump irrigation system and suitable wide range of climate which allows variability of crops **(Ministry of agriculture and forestry – Upper Nile State 2010)**. There was an increase of population growth in Renk County after comprehensive peace agreement CPA in 2005 due to revel of the peace in the country and some many of people were involve in a subsistence economy and small-scale farming on clay and heavy loamy soil.

2.2 Map of Renk County



Source: UN-OCHA

2.3 Seasons of production of tomato in Renk County

2.3.1 Summer season

In the summer season (dry season) the farmers started plating or seedling in February and transplanting in the end of march, this season is characterize by a few number of producers due to high risk which involve high temperature, Both high temperature and hot winds have negative impact on flowering and fruit setting reducing the effectiveness of pollen grains and drying of the stigma surface, thereby prevent pollen grain germination.

2.3.2 Autumn Season

In autumn season the farmers start seedling at the end of May and transplanting in the end of June. This season is characterize by outbreak of diseases and insects.

2.3.3 Winter Season

Tomato is winter crop the farmer start planting in the beginning of august and transplanting it's in October this season is characterize by increasing numbers of producers due to proper condition for planted and reduce numbers of diseases infection.

2.4 Sample size

Study population is a larger group with one or more characteristic in common from which a sample is obtained, sample size was 100 farmers selected randomly among the farmers of tomato from five villages in Renk County they are Geiger, Abu khadura, Jalhak, Juoda and Remila area.

2.5 Method of data collection

The research depend on two methods for generating the necessary data they are primary and secondary data.

2.5.1 Primary Data

Primary data was collected by using structured questionnaire for one factor (Farmer) and selected respondents were interviewed through visiting Farmers field of tomato in Rank County Upper Nile state in the period of 2015.

2.5.2 Secondary Data

Secondary data was collected from, annual reports of the National Ministry of Agricultural and Forestry, technical documents and information from different references and sources related to the subject.

2.6 Data Analysis

The primary data was analyzed using the Statistical Packages for Social Sciences (SPSS). The results which were obtained from the analysis were presented in form of tables of frequency and percentage**.**

Descriptive analysis was used to analyze the data of the study. Tabular, and simple statistical tools were used to analyze the socio-economic characteristics.

3. Results and Discussion

3.1 Socioeconomic Characteristics

3.1.1 Distribution of gender and marital status of tomato farmers in Renk County

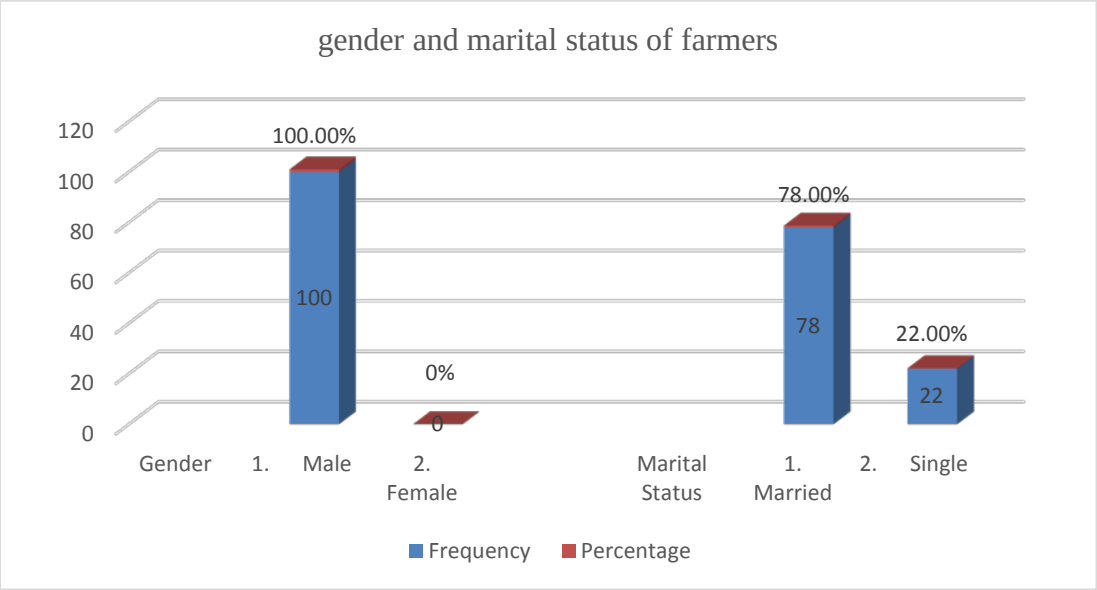
Table 1 and figure 1 below showed gender and marital status of tomato farmers respondents in Renk county, revealed that gender of tomato farmers in Renk County were all male (100%), while no female gender found among tomato farmers. These finding agree mostly with what was found by **Ajibade et al. (2021)** in analysis of gender roles in tomato production in Municipal area council in Abuja Nigeria socio-economic revealed that 69.2% of respondents were male gender, this may be attributed to that men tend to venture into production of cash crops and that they are risky takers compared to women who tend to grow crops for home consumption according to **Venance et al. (2016)**. In another study by **Ibitoye et al. (2015)** in analysis of resource use efficiency in tomato production in Kogi state in Nigeria they reported that majority of farmers were male (82.5%) and this agree with current study.

In terms of marital status, the results of current study revealed that majority of respondents were married (78.0%) while minority were single (22.0%). These results agree with what was reported by **Ibitoye et al. (2015)** that majority of tomato farmers were married (87.95%). Also current study findings agree with what was stated by **Charles et al. (2022)** who found that 95.1% of respondents are married and this could be attributed to the fact that majority of respondents are of reproductive age making it obvious that they should be married.

Table (1) Distribution of gender and marital status

Items	Frequency	Percentage
Gender		
1. Male	100	100.0%
2. Female	0	0%
Marital Status		
1. Married	78	78.0%
2. Single	22	22.0%

Figure (1) Distribution of gender and marital status



3.1.2 Distribution of ages of tomato farmers in Renk County

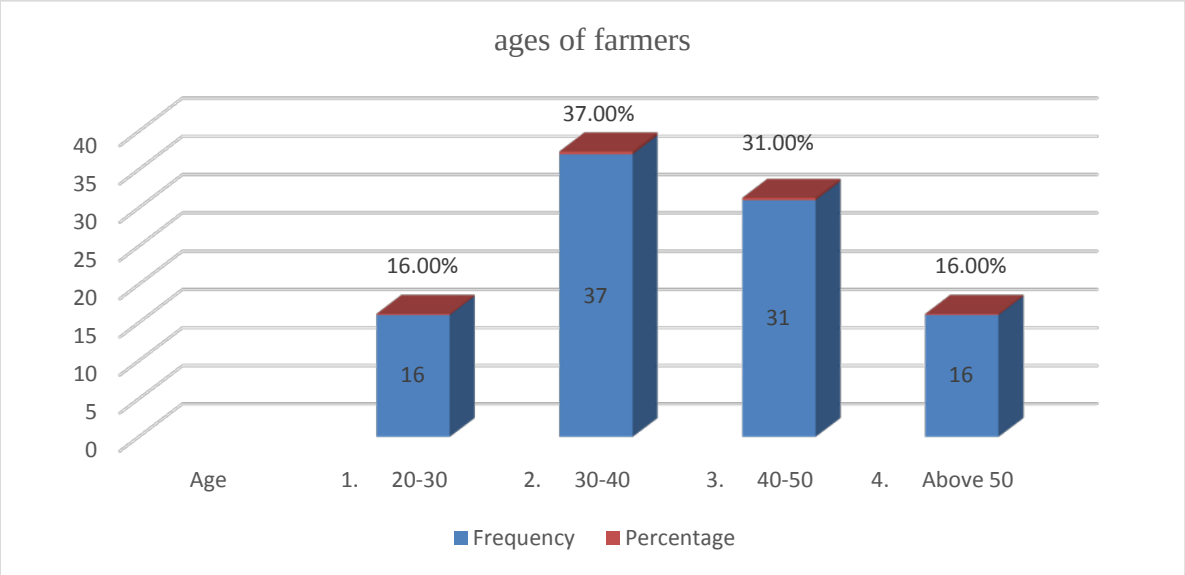
Table 2 and figure 2 below shows age group of respondents of tomato farmers in Renk County which consider as an important factor involve in income generation through participation in agricultural activity. The results of current study indicated that majority of respondents ages of tomato farmer ranged between 30 - 40 years (37.0%), this agree with the finding of **Alam et al (2016)** who studied socio-economic characteristics of tomato farmers in Chapamawabganj district in Bangladesh and found that age group 31 – 40 years were the largest group among tomato farmers. The findings of this study mostly agree with what was stated by **Charles et al.**

(2022) that majority of tomato farmers ages ranged between 31 – 52 years and also agree with what was reported by **Simotawe et al. (2010**) who found that middle age farmers appear to be productive.

Table (2) Distribution of ages of tomato farmers in Renk County

Items	**Frequency**	**Percentage**
Age		
1. 20-30	16	16.0%
2. 30-40	37	37.0%
3. 40-50	31	31.0%
4. Above 50	16	16.0%

Figure (2) Distribution of ages of tomato farmers in Renk County



3.1.3 Distribution of educational level characteristics

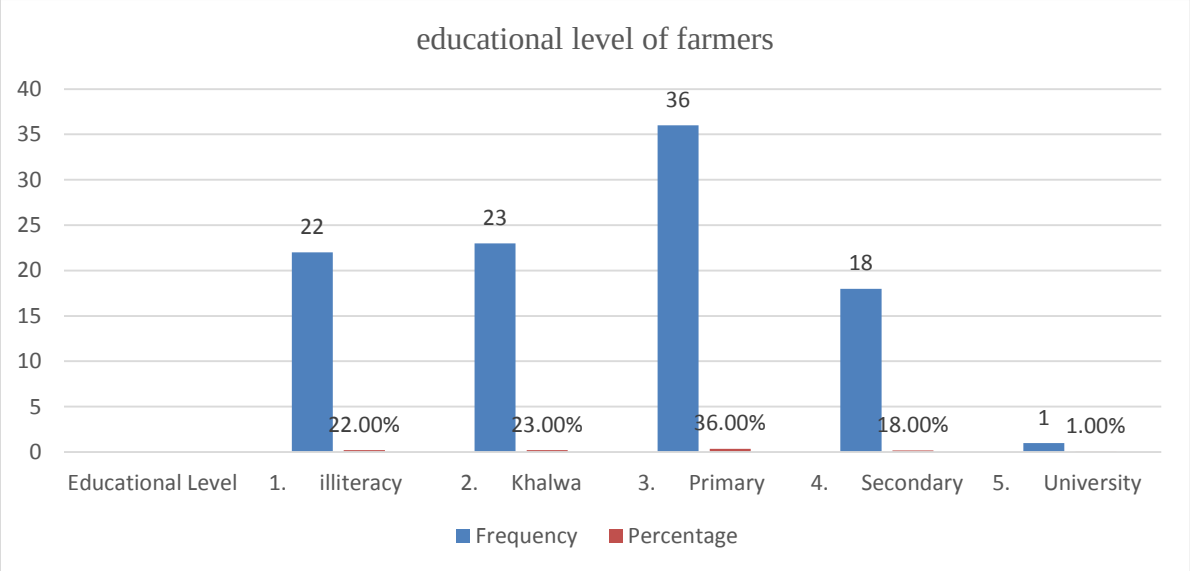
Table 3 and figure 3 below shows educational level of tomato farmers in Renk county revealed that the majority of tomato farmers are at primary level (36%) while minority were university

level (1%). These findings disagree with what found by **Alam et al (2016)** who studied socio-economic characteristics of tomato farmers in Chapamawabganj district in Bangladesh who reported that literacy rate of tomato farmers is high. Also **Bezabih and Hadera (2007)** stated that education is a crucial factor for skill development and enhancing effective production and marketing decisions**.** Furthermore, educational level increase access to credit services because high education awareness increases awareness about the rules of financial institutions according to **Masudul (2018).**

Table (3) Distribution of educational level characteristics

Items	**Frequency**	**Percentage**
Educational Level		
1. illiteracy	22	22.0%
2. Khalwa	23	23.0%
3. Primary	36	36.0%
4. Secondary	18	18.0%
5. University	1	1.0%

Figure (3) Distribution of educational level characteristics



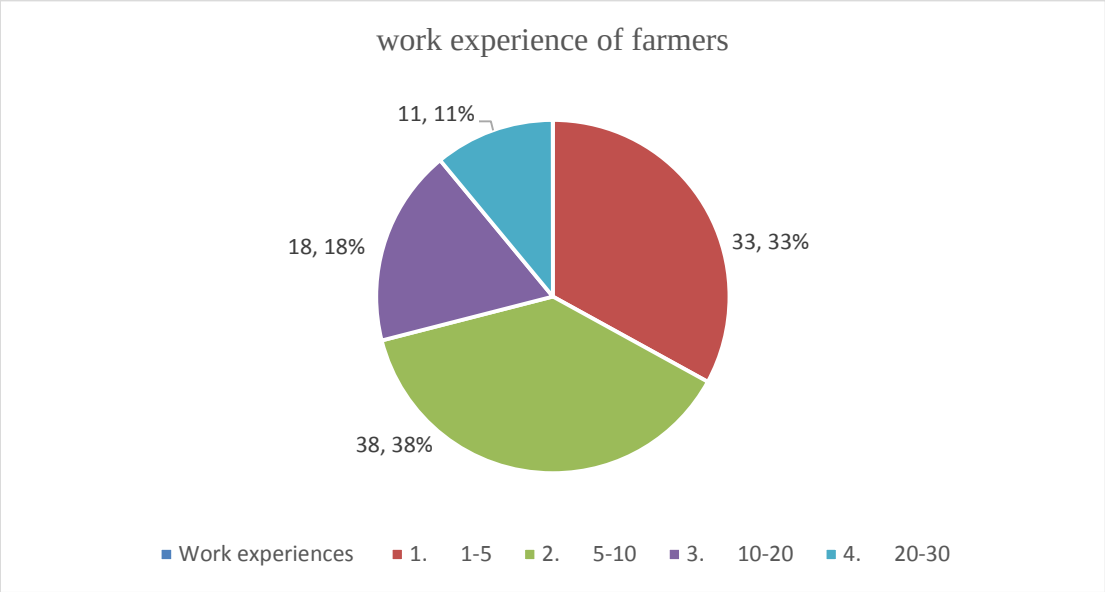
3.1.4 Distribution of work experiences of tomato farmers

Table 4 and figure 4 below showed that majority of tomato farmers have work experience range between 5 – 10 years (38%). The findings of current study with what was stated by **Charles et al. (2022)** in Malawi who found that 74.7% of tomato farmers had farming experience less than ten years and this implies that they had less experience in tomato production, this could be attributed the fact that majority of them still young hence may not be into tomato production for long time. Furthermore, the same author found that experience of majority of tomato farmers in Malawi ranged between 6 – 10 years (38% of respondents) and this exactly agree with current study findings which showed majority of tomato farmers experiences ranged between 5 – 10 years (38% of respondents) and this mean that majority of tomato farmers in Renk county still young in tomato farming activities. While minority experience in this study ranged between 10 – 20 years and 20 -30 years (29%) and this agree with findings of **Charles et al. (2022)** who reported that very few tomato farmers (25.3%) had farming experience above ten years.

Table (4) Distribution of work experiences of tomato farmers

Items	Frequency	Percentage
Work experiences		
1. 1-5	33	33.0%
2. 5-10	38	38.0%
3. 10-20	18	18.0%
4. 20-30	11	11.0%

Figure (4) Distribution of work experiences of tomato farmers



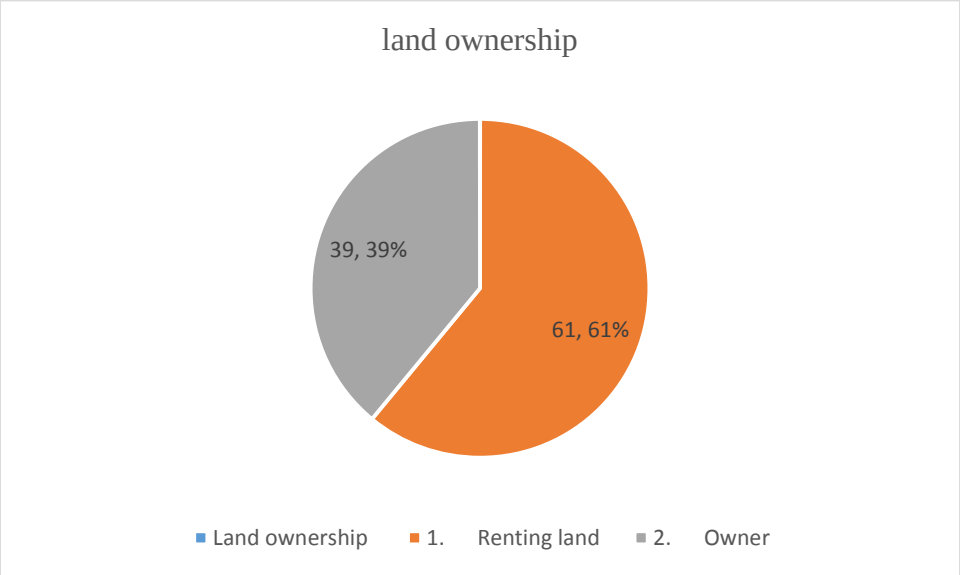
3.1.5 Distribution of land ownership among tomato farmers

Table 5 and figure 5 below showed that majority of tomato farmers were renting land (61.0%) these findings disagree with what was reported by **Charles et al. (2022)** in Malawi that 68.5% of respondents use their own land, this may be due to less experience of local land owners in tomato farming or may be due to no easy access to owned land.

Table (5) Distribution of land ownership among tomato farmers

Items	**Frequency**	**Percentage**
Land ownership		
1. Renting land	61	61.0%
2. Owner	39	39.0%

Figure (5) Distribution of land ownership among tomato farmers



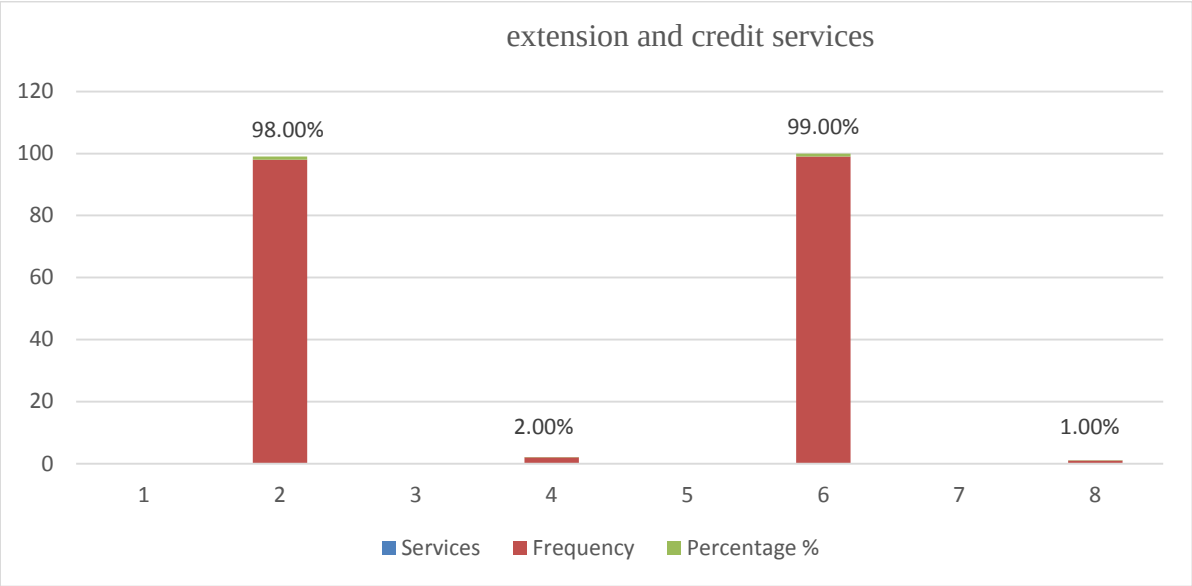
3.1.6 Availability of Extension and Credit Services to tomato farmers in Renk County

Table 6 and figure 6 below showed that majority of respondents do not have access to extension services (98%) while minority have access (2%), also majority of respondents do not have access to credit services (99%) while minority have (1%). Extension services reported that (57.83%) of respondents assure to have contact with extension agents according to **Ibitoye et al. (2015)** in analysis of resource use efficiency in tomato production in Nigeria. Also it has been found that extension agents visits is an opportunity to transfer skills, knowledge and information facilitate farming operations **Ibitoye et al. (2015)** and this also agree with **Onu (2006)** who reported that farmers who have access to extension adopted improve farming technologies than those who have no access, those results disagree with current study finding may due government paying high attention for tomato farming Renk county as it do concern with sorghum farming in Renk county which is the foot hole for sorghum production in south Sudan. For of credit access it was found in Bangladesh that about 66% of tomato farmers have not yet got credit access according to **Masudul (2018)** in study of factors determining credit access of tomato farmers, and those findings are mostly high due to high awareness of educated farmers who are aware about the rules of financial institutions while in current study low education level of majority is low and that may be the reason for low credit access.

Table (6) Extension and Credit services

Services	Frequency	Percentage %
Extension Services 1. Did not have access Extension Services 2. Have access Extension Services	 98 2	 98.0% 2.0%
Credit Services 1. Did not have access credit services 2. Have access to credit services	 99 1	 99.0% 1.0%

Figure (6) Extension and Credit services



Conclusion

The study found that gender of tomato farmers in Renk County were all males (100%), while no female gender among tomato farmers and this may be attributed to that men tend to produce cash crops and that they are risky takers compared to women who tend to grow crops for home consumption. In terms of marital status, the results of current study revealed that majority of respondents were married (78.0%) this could be attributed to the fact that majority of respondents are of reproductive age making it obvious that they should be married hence tomato farming activity considered as a livelihood source for their them.

The study also revealed that lack of extension and credit services were the main constraints facing tomato farmers to carry out their works properly as majority of respondents do not have access to extension services (98%) and do not have access to credit services (99%), this may be refers to low awareness and low educational level of majority of the farmers.

Furthermore, for the farm land ownership the study revealed that majority of tomato farmers were renting land (61.0%), this may be due to less experience of local land owners in tomato farming or may be due to no easy access to own land and this also might contribute to reduce the numbers of tomato producers in the area.

Moreover, majority of tomato farmers experiences ranged between 5 – 10 years (38% of respondents) and this mean that majority of tomato farmers in Renk County still young in tomato farming activities. Also the findings indicated that majority of respondents ages of tomato farmer ranged between 30 - 40 years (37.0%) which is the most productive age in many in many countries.

Recommendation

The study recommends the government to:

1. Extension services should be fortified through extension agents for those farmers having no basic education to improve their skills.

2. Women should be mobilized to participate in tomato farming activities in Renk County through awareness and easy credit access.

3. The tomato growers should be trained and encouraged by the regular visits of extension agents to apply approved agronomic practices

4. Tomato growers should be mobilized for agriculture credit to meet the cost of inputs such as improved seeds, agrochemicals and fertilizers etc.

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