ASSESSING YOUTH PERCEPTIONS AND KNOWLEDGE OF MODERN AGRICULTURE: A CASE OF YOUTH IN TANO NORTH MUNICIPALITY OF AHAFO REGION

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Abstract

Agriculture is the backbone of many countries economies, particularly in underdeveloped ones, and Ghana is no different. It is unknown why, despite Ghana's rising unemployment rate, young people are uninterested in agricultural-related jobs. The objective of this study was to assess youth perceptions and knowledge of modern agriculture in Tano North Municipality of the Ahafo Region. The data were obtained from 350 randomly selected youth using a questionnaire and analysed using a Statistical Package for Social Science (SPSS v. 25). The study revealed that the youth had positive perceptions of modern agriculture and a good degree of understanding of it in terms of profitability of agriculture, and job creation. Reduced yield due to poor harvest, pests, disease, poor soil fertility, poor irrigation facilities, irregular rainfall, inadequate land, inadequate capital/income, lack of quality farming inputs such as seeds, fertilizers, and lack of proper marketplace to sell farm products are the main factors affecting youth's lack of willingness to participate into agriculture. Transforming the agriculture sector by providing technical, financial, and farming inputs support to farmers, particularly young people, may help the government solve issues such as private sector development, youth unemployment, and even food insecurity. Since economic perceptions were discovered to have a strong influence on the youth's intention to participate in agriculture, the study recommends that efforts be increased to raise awareness of the lucrative business opportunities and remunerative employment that the agricultural sector offers to attract more members of the youth into agriculture.

Keyword: Employment, knowledge, modern agriculture, perception, youth

1.INTRODUCTION

Agriculture plays a critical role in many countries' socioeconomic development. It is the majority of rural people's primary source of employment, livelihood, and food security. In 2019, the agricultural sector contributed approximately 20 % of Ghana's gross domestic product (GDP). This sector not only contributes to Ghana's GDP but also employs a large number of people and provides raw materials for industrial growth and development (Nyamekye et al., 2021). In 2018, the GDP growth rate in Ghana was 8.4 %, while the agricultural growth rate was 6.3 %. Agriculture contributes 54 % of Ghana's GDP and over 40 % of export earnings by 2021, while also meeting more than 90 % of the country's food needs (Ghana Statistical Service, 2022). Small-scale farmers who produce both food and cash crops dominate the agriculture sector in African countries, including Ghana (Kimaro and Hieronimo, 2014). Around 70 % of Ghanaians live in rural areas, with agriculture accounting for 52 %. Ghana's agricultural sector employs more than half of the workforce. As in other African countries, the agriculture sector in rural Ghana is dominated by elderly people rather than youth, with women farmers predominating; as a result, the farmers-to-non-farmers ratio is higher among women than men (Leavens & Kennedy, 2011; Lawi, 2013). However, due to the challenge of unemployment, youth economic participation in the country is not promising. The number of new jobs

created each year is insufficient to absorb the number of new young people entering the labour force. The current youth unemployment rate is due to a combination of the economy's inability to absorb existing labour and the youth's lack of entrepreneurial skills and work experience.

Thus, despite their dominance in the labour force, youth outnumber adults in rural areas. There is abundant evidence that investment in agriculture is more effective in reducing poverty than investment in non-agriculture sectors. When inequality is high, the effect is even more pronounced in reducing poverty in low-income countries (Loach & White, 2011). The youth are dissatisfied with agriculture because they receive lower returns than expected. They can also afford to invest less in agriculture because they lack sufficient capital, resulting in less youth involvement in farming activities. As a result, the rate of rural-urban migration has accelerated as youth seek employment and leave the agriculture sector in rural areas in the hands of elders who are economically insecure in terms of power and resource mobilization (Lawi, 2013). Individual youth perceptions of agriculture differ, owing primarily to the immediate environments to which they are exposed (Nyoni, 2012). Lack of access to farm credit/loans, limited government support, and a lack of information and communication technologies are some of the factors that may contribute to low youth participation in agriculture (Nyoni, 2012). Young farmers can use Information and Communication Technology (ICT) devices to relay information to agricultural stakeholders who have a significant impact on farm crop production (Ayisi- Nyarko & Kozári, 2021). While youth participation is critical for a country's economic growth, youths face additional socioeconomic barriers that limit their involvement in agriculture. Such barriers include parents discouraging their children from pursuing farming careers (Sumberg et al., 2017) and preferring white-collar jobs (Chinsinga & Chasukwa, 2018), which are thought to have higher economic returns and fewer risk factors (Yeboah and Jayne, 2018). Furthermore, for most rural youths, the decision to engage in farming is influenced by their immediate need to meet basic needs, a lack of employment opportunities, or assurance of inheriting the land (Richard, 2015). When this occurs, participation is circumstantial rather than aspirational; the youth will frequently leave in search of a "better life" in urban areas when opportunities present themselves (Chinsinga & Chasukwa, 2018).

Despite the positive impact of agriculture on the continent, it remains unappealing to young people. Many young people are moving to cities and have little interest in working in agriculture. The challenge is that Ghana is confronted with a harsh reality: the country's economic development is being jeopardized by a decline in agricultural productivity. Smallholder farmers do not have access to the financial assistance they need to increase their yield. Carpentry, motorcycling (aboboyaa), welding activities, petty traders, and service businesses such as money service, barbershops, beauty salons, and food vending have increased as a result of the country's urbanization efforts. This has harmed Ghana's agricultural competitiveness by increasing the country's reliance on imported foods. Farmers in remote areas have no or limited access to information, and how to process information gathered-such as crop rotation and fertilizer use is difficult for farmers to understand due to illiteracy. The adoption of new agricultural technologies and practices is thought to be an important strategy in the fight against hunger, poverty, and underdevelopment among rural agricultural households.

Limited access to fertilizer, as well as inadequate transportation and storage facilities, all contribute to the sector's decreased productivity. All of these challenges have contributed to a decrease in youth agricultural participation. According to the literature, there is a high rate of youth migration from rural to urban areas, and they have begun to choose other sectors for a living. The farming family's parents are uninterested in involving their children in farming activities, and the literate youth in the rural area are also uninterested in farming. The extension is critical in encouraging rural smallholder farmers to implement agricultural technologies on their farms. These young farmers are the primary beneficiaries of information technologies, which have the potential to boost output through improved farming efficiency. As a result, technology application has been a watershed moment in Ghana, particularly in the Northern Region, where per capita income is low and poverty rates are high (Damba et al., 2019). The study seeks to answer the following questions: what is youths' perceptions and knowledge of modern agriculture, and what factors influence youths to pursue careers in agriculture? This examines the knowledge and perception of youth in

Ghana concerning modern agriculture and factors that might affect the youth to adopt modern agriculture in Ghana.

2. LITERATURE REVIEW

Baah (2014) researched 'Assessment of youth in agriculture programme in Ejura-sekyedumase district.' The study discovered that the provision of land and agro-inputs, agricultural extension services, and agribusiness management training motivated the beneficiaries to participate in the Government of Ghana's 'Youth in Agriculture programme' (YIAP). The programme also changed the youth's negative perception of farming and generated significant income. Nagalingam and Rishi Keshav (2019) researched youth attitudes toward agriculture and it was discovered that youth from agricultural families are uninterested in continuing in agriculture, so the government must take the necessary steps to increase youth hope and confidence in the field of agriculture.

In their study of Interests and Perceptions of Agriculture among Rural Youth in Mozambique, Adam and Quinhentos (2018) argued that one of the reasons for youth engagement in agriculture is a lack of alternative employment in rural areas. Many young people get involved in petty trades that involve selling non-farm products that do not last long. Their business fails before the third year of operation, and they eventually return to farming. This demonstrates a lack of entrepreneurship skills among rural youth and a lack of non-farming economic opportunities. Ripoll et al. (2017) in their study on rural transformations and youth in Africa argued that youth will not abandon agriculture occupations, but will instead remain in rural areas and rely on agriculture. However, a key aspect depicted in their study for youth to effectively use available rural farming resources is a combination of entrepreneurial skills, technology, and the agriculture value chain.

Felicia et al. (2016) conducted a study in Nigeria on the assessment of future agriculture in the hands of rural youth to examine rural youth's perceptions of agriculture as a profession. Agriculture is not considered a profession, according to the findings, because of the unpredictability of its income flow. As a result, young people with higher levels of education are more likely to pursue other opportunities that they perceive to be professional work.

3. METHODOLOGY

The study was carried out in the Tano North Municipal of the Ahafo region of Ghana. Figure 1 shows the map of the Ahafo region showing Tano North Municipal. The municipality was chosen due to the large proportion of youth in its population, its high levels of unemployment, and the prominence of smallholder farming in the area.

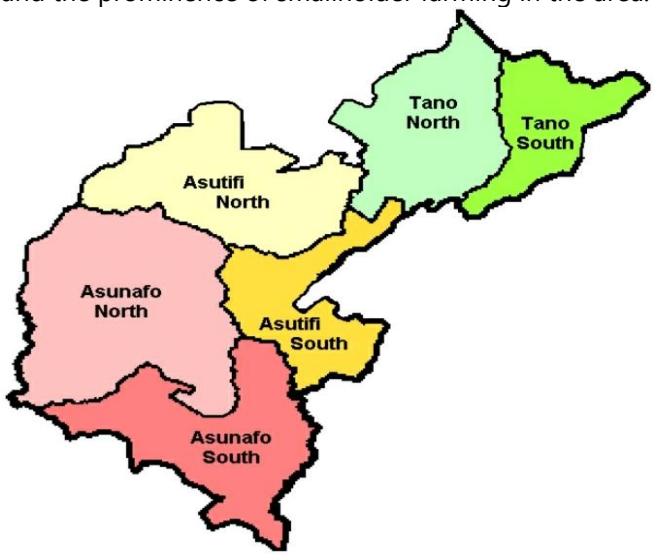

Figure 1: Map of Ahafo region showing Tano North Municipal

Source: Adopted from Local Government Service (2020)

In this study, a survey was adopted because the respondents were out there to be reached. The researchers used the survey method to assess the knowledge and perception of youth in Ghana concerning modern agriculture and factors that might affect the youth to adopt modern agriculture in Ghana. The target population of the study was youths aged between 18-40 years. Seven communities (Adrobaa, Terchire, Dua-Yaw Nkwanta, Yamfo, Afrisipa, Susuanso, and Tanoso) were randomly selected for the study. A total of 350 youths were selected from a total population of 2800. A purposive sampling technique was used in the selection of the youths and random sampling was used to choose the needed sample size. The study used a sample size of three hundred and fifty (350) youths. The sample size was determined using the Yamein formula as follows:

$$*n = \frac{N}{1+N(e)^2}$$

Where;
n = sample size
N= population size
e = level of precision or sampling of error which ±5%

$$n= \frac{2800}{1+2800(0.05)^2}$$

n=350

A well-structured questionnaire was designed to collect information from the respondents. The questionnaire consisted of closed-ended questions. Closed-ended questions provided options for the respondents to choose from. Closed-ended questions are easier and quicker to answer and help in obtaining measurable and quantitative data. The collection of this information was done by using a four-point Likert scale, ranging from 4 (“strongly agree”) to 1 (‘’strongly disagree’’). The aim of the study was explained to the youths and asked to participate if they so wished. It was emphasized that the researchers would treat the information provided as confidential and anonymous. Youths who were willing to participate in the study received a questionnaire. Completed questionnaires were collected, checked, and discussed with the respondents in case of any queries. The data was captured and analysed using the Statistical Package for Social Science (SPSS v. 25) which is a statistical analysis software programme capable of generating descriptive and inferential statistics.

4. RESULTS AND DISCUSSIONS

Table 1 present the demographic profile of the participants. Gender is not a barrier to active participation in activities. However, as reported in Chikezie (2012), Oladeji et al noticed that it is commonly assumed that males are frequently more active and might quickly be available for energy-intensive professions such as farming. The results show that 71% of the respondents were males and 29% were females. The low percentage of female respondents might be due to the fact that farming is an energy-intensive activity that does not attract ladies. Physical fitness is required for activities such as post-emergence weed management. This conclusion is supported by Ogunremi et al. (2012), who discovered that the majority of respondents in their study on the relevance and advantages of agricultural youth empowerment programmes were males. According to Ogunremi et al. (2012), practical farming demands physical fitness, and males can handle more strenuous labour than women. Between 25 and 30 years old was found to have the highest age frequency (61%). Only 8% of the population was 35 to 40 years old. This means that the majority of respondents were youths, based on the National Youth Policy's definition of youth as someone aged 15 to 35 years (2010). This suggests that the participants were at a productive age where their efforts may be put to use in agricultural activities. Furthermore, their youth would make them more open to new technologies, as opposed to elderly farmers, who are sometimes hesitant to modify their farming methods. The findings of the current study are also consistent with the findings of Olaniyi and Adewale (2012), who discovered that 58.5% of the sampled rural adolescents are between the ages of 30 and 35. This means that older youth are more active in agricultural activities, as well as being deemed more mature and productive in commercial companies.
In the research region, most young people are literate. However, just 31% of them finished tertiary education, and others are still in high school. The degree of education a person has indicates how well they comprehend certain circumstances. It is assumed that an educated person will make wiser conclusions regarding the topic. The level of education influences a person's perception of an object or a circumstance since educated young are more informed about modern technologies for better output. Education affects changes in attitudes, beliefs, and behaviours. It may also assist farmers in acquiring and comprehending information, as well as calculating the proper quantities of inputs to be used. Young farmers would be more ready to accept innovations and follow profitable agricultural techniques if their attitudes and habits were modified. Education increases the amount of adoption of contemporary agricultural technology by young farmers, resulting in a well-informed younger farming population. According to Ojukaiye, as stated in Chikezie (2012), education is an essential socio-economic feature that impacts a farmer's decision since it affects the farmer's awareness, reception, and acceptance of innovation that can boost productivity.

The data in Table 1 reveals that the majority of respondents (81%) were married. Young people cannot make firm judgments on whether to farm or not to farm since they still have many options available to them and can easily relocate. Having children and providing for a family are just a few of the responsibilities that come with marriage. This might be the cause of the majority of households and couples owning at least a modest plot of land for farming.

The level of agricultural expertise ranged from 0 to 11 years. However, 28% of all respondents had no agricultural experience, followed by 39% with 1-5 years of farming experience, 18% with 6-10 years, and 15% with 11 years or more. The more experience a person gains in farming, the more they comprehend the benefits and understand the significance of the business. The benefits are gained through increased efficiency and effectiveness in the manufacturing process. A person can reduce manufacturing costs while enhancing product quality (Table 1).

Table 1. Socio-demographic Characteristics of Respondents

Variables	Frequency	Percentage
Gender		
Male	250	71
Female	100	29
Age (years)		
18-24	77	22
25-30	213	61
31-34	32	9
35-40	28	8
Education		
No formal education	17	5
JHS	35	10
SHS/Vocational/Technical	189	54
Tertiary	109	31
Marital status		
Married	283	81
Single	67	19
Year of experience in farming		
No experience at all	98	28
1-5 years	136	39
6-10 years	63	18
11 years and above	53	15

Source: (Field Survey, 2022)

From Table 2, the average mean (3.71) indicates the level of knowledge of modern agriculture among the youth in the study is high. Majority of the respondents agreed (mean=3.93) that agriculture is important to their communities. This implies that agriculture has a wide range of effects on society, including supplying food, habitat, and jobs; providing raw materials for food and other products; and fostering healthy economies through trade. Agriculture's value to the community cannot be emphasized. For one thing, it generates jobs for people in the community, increases economic growth in the community, and maintains the community through food and other raw resources (Birtalan et al., 2020). Agriculture has a far greater positive influence on the community than most people realize.

Youths agreed (mean=3.80) that they feel it is important for youth to learn about agriculture. This is because agriculture may be a viable source of employment for young people without the need for an organization to hire them. According to Pelzom and Katel (2018), encouraging young people to promote agriculture in rural regions may significantly improve a country's food security. Youths also agreed (mean=3.73) that there are many jobs in the area of agriculture. According to Brooks et al. (2013), agriculture employs the majority of Africa's young people and is expected to continue so in the future. Agriculture provides the best potential for a generation of young people entering adulthood to get out of poverty and construct fulfilling lives. According to Allen and Heinrigs (2016), the food economy provides for 66% of total employment, with agriculture accounting for the majority (78%). The remaining 22% of total food economy employment is accounted for by jobs outside agriculture but inside the food economy-food processing, food marketing, and food away from home. However, considering the magnitude of the food

industry, off-farm food business occupations represent a significant source of income.

Furthermore, majority of the youth agreed (mean=3.93) that food is a result of agricultural practices. Agriculture provides most of the world's food and improves food security for 80% of the world's poor, who live in rural areas and work mainly in farming. This finding is consistent with the findings of Sunderland et al. (2013) that agriculture provides the most basic foods to people globally. The farming activities of rural households provide the bedrock of the food system in sub-Saharan Africa (FAO et al., 2020). Moreso, the youths agreed (mean=3.72) that agriculture generates enough income for people involved in production (farmers). This finding is consistent with Giller et al. (2021) that farmers earn income from the sales of agricultural produce.

Table 2. Respondents' Level of Knowledge of Modern Agriculture

Knowledge	Mean	Standard deviation
Agriculture is a part of my everyday life	3.58	0.80
Agriculture is important to my community	3.93	0.36
Agriculture impacts me daily	3.71	0.67
I feel it is important for youth like me to learn about agriculture	3.80	0.58
I would like to work in agriculture	3.47	0.85
There are many jobs in the area of agriculture	3.73	0.65
The shelter is a result of agricultural practices	3.61	0.72
Clothing is a result of agricultural practices	3.57	0.80
Food is a result of agricultural practices	3.93	0.36
Agriculture generates enough income	3.72	0.65
Average mean	**3.71**	

Source: (Field Survey, 2022)

Scale: 1.0-2.4=Disagree, 2.5-3.9=Agree

Table 3 provides an overview of facts on young people's positive perceptions of contemporary agriculture. As seen in Table 3, youths expressed favourable perceptions of modern agriculture. This good perception might be explained by the fact that white-collar work possibilities are few. As a result, this acts as a push factor, leading people to seek alternate sources of income. The individual perceptual markers had a mean score of 3.39. This statistic implies that individuals are confident that their talents, objectives, and attributes fit the requirements of the agriculture industry. The average mean score of economic perception indices, on the other hand, was 3.50. This means that survey respondents believed the agriculture industry might help them accomplish their economic goals. This conclusion is consistent with entrepreneurial literature (Arenius & Minniti 2005; Hansson et al. 2013), which contends that an individual's decision to become an entrepreneur is frequently motivated by a desire for financial gain. The young were staunchly unconvinced of the congruence and alignment between the agricultural sector's actions and the values held in their social circles, as evidenced by their average mean score of 2.13 on the socio-cultural indices. The current study's findings agree with those of Magagula and Tsvakirai (2020), who found that youth in Nkomazi Municipality in South Africa's Mpumalanga province had positive perceptions of agriculture in terms of individual and economic perceptions and that these perceptions positively influenced their intentions to participate in agripreneurship. However, our findings contrasted with prior research by Njeru (2017), Charles (2014), and Anyidoho et al. (2012), which found that young have unfavourable attitudes toward agriculture. They also show that many young people see farming as a career for school dropouts or a poor man's vocation with limited chances for personal development. According to Afande et al. (2015), the youth regard agriculture and

agribusiness as something to pursue after failing in school. The findings also contradict a recent study conducted in Kenya by Mibey (2015), which found that young have generally negative perceptions of the agricultural industry.

Table 3. Respondents' Level of Perceptions of Modern Agriculture

Perception indicators		
Individual perceptions	**Mean**	**Standard deviation**
My role models have successful agricultural businesses	3.28	0.75
I can meet the laborious requirements of agripreneurship	3.29	0.71
I can develop a successful agricultural business	3.36	0.74
Agriculture is an acceptable way of life for me	3.63	0.64
Average mean	**3.39**	
Economic perceptions		
Agricultural remuneration is attractive	3.49	0.68
Agriculture is a profitable business	3.67	0.61
There are opportunities for promotion in agriculture	3.82	0.46
Farming is a business	3.79	0.54
Agriculture creates employment	2.75	0.90
Average mean	**3.50**	
Socio-cultural perceptions		
Farming is not a clean job	1.10	0.79
Farming is suitable for old people	1.82	0.79
Agricultural professions are admirable	3.47	0.70
Average mean	**2.13**	

Source: (Field Survey, 2022)

Scale: 1.0-2.4=Disagree, 2.5-3.9=Agree

Thematic groups are formed by factors that cluster on the same components in Table 4. Based on the complements, the theme groupings are divided into four categories (crop loss, crop threats, lack of resources, and lack of accessibility). Crop loss is a major issue in Ghana, and it is mostly caused by a variety of environmental variables such as pests and disease, poor soil quality, low harvest, soil degradation, and so on (Table 4). Furthermore, growing water scarcity due to climate change is a severe danger that would adversely influence agricultural output due to loss of soil fertility, resulting in erosion of topsoil, loss of cultivable areas, disease outbreaks, and increased insect damage to crops. The findings are congruent with those of Pelzom and Katel (2018), who found that erratic rainfall, poor soil fertility, inadequate irrigation infrastructure, and pests and illnesses influenced young people's impressions of agriculture in Bhutan.

In addition, the youths agreed (mean=3.20) that inadequate land in the village is among the factors affecting young people's perceptions of modern agriculture. This means that the youth have limited access to fertile land for farming since smaller plots of land are not economically profitable. This is consistent

with the results of Sharma and Sharma (2010), who argued that family land partitioned into smaller portions is not economically beneficial to cultivate. Starting a farm requires access to land. According to the FAO (2010), youth must have access to land in order to engage in farming. However, empirical research suggests that the majority of developing-country adolescents do not have access to or ownership of land, which is a critical resource in agricultural output.

Youths agreed (mean=3.41) that inadequate capital/income to start agriculture affects their involvement in modern agriculture. Most farmers in Ghana are subsistence farmers who cannot afford or employ modern technologies. This means that agricultural cultivation must be done by hand because current technology is restricted (Subedi et al., 2021; Sangha, 2014). Furthermore, the majority of farmers are quite impoverished, and thus are unable to provide collateral to get bank loans. As a result, these farmers are unable to afford high-quality seeds and other farming inputs for production, such as fertilizers and pesticides. According to Charles (2014), young people in agricultural areas have fewer opportunities to purchase inputs.

Moreso, youths agreed (mean=3.57) that lack of a proper marketplace to sell farm products. According to Mibey (2016), a lack of infrastructure such as marketplaces leads to expensive travel and product transportation costs, making agriculture less appealing to the youth. Many of the world's poor reside in rural regions, and farmers, particularly in developing nations, face limited market access due to low adoption of modern agricultural methods, a lack of basic infrastructure (paths, trails, bridges, and roads), and a lack of transportation services (Pradhan and Dewina, 2015). As a result, marginal farmers typically earn negative crop productivity returns, prompting farmers, particularly educated young people, to relocate to cities in pursuit of better employment possibilities (Tobgay, 2005; Muthomi, 2017).

Table 4. Factors Affecting Young People's Perceptions of Agriculture

Factors	Mean	Standard deviation
Reduction in yield due to poor harvests	3.59	0.67
Reduction in yield due to poor soil quality	3.73	0.56
Reduction in yield due to soil degradation	3.75	0.52
Reduction in yield due to poor irrigation facilities	3.77	0.53
Reduction in yield due to irregular rainfall	3.70	0.53
Reduction in yield due to unsuitable climatic conditions	3.69	0.61
Crops affected by pests and disease	3.79	0.51
Inadequate land in the village	3.20	0.81
Inadequate capital/income to start agriculture	3.41	0.79
Unaffordable high-cost technologies for farming	3.77	0.50
Unaffordable high-quality seeds	3.67	0.63
Unaffordable high-quality farming inputs	3.70	0.59
Lack of proper marketplace to sell farm products	3.57	0.86
Average mean	**3.61**	

Source: (Field Survey, 2022)
Scale: 1.0-2.4=Disagree, 2.5-3.9=Agree

5. CONCLUSIONS AND RECOMMENDATIONS

The findings revealed that the youth had positive perceptions of modern agriculture and a good degree of understanding of it in terms of profitability of agriculture, and job creation. Reduced yield due to poor harvest, pests, disease, poor soil fertility, poor irrigation facilities, irregular rainfall, inadequate land, inadequate capital/income, lack of quality farming inputs such as seeds, fertilizers, and lack of proper marketplace to sell farm products are the main factors affecting youth's lack of willingness to participate into agriculture. Transforming the agriculture sector by providing technical, financial, and farming inputs support to farmers, particularly young people, may help the government solve issues such as private sector development, youth unemployment, and even food insecurity. Since economic perceptions were discovered to have a strong influence on the youth's intention to participate in agriculture, we recommend that efforts be increased to raise awareness of the lucrative business opportunities and remunerative employment that the agricultural sector offers to attract more members of the youth into agriculture.

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