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Agriculture Sector Policy Frameworks and Performance Indicators for Poverty Reduction among Youths in Tanzania

Maksi D. C.[1,] *, **Mdemu M. V.** [1], **Limbumba T.** [1]

[1] Institute of Human Settlement Studies, Ardhi University
*Corresponding author. maksi.deo@gmail.com

Abstract. This paper reviews the agriculture policy frameworks and their performance indicators for poverty reduction among youths in Tanzania. A systematic literature review and a multivariate analytical approach was applied using principal component analysis. A total of 31 out of 320 articles were selected through a systematic selection process. The findings reveal that the frameworks promised to allocate land, finance and training to youths; provide access to agricultural inputs, improved seeds, fertilizers, knowledge, and mechanization; provision of infrastructures, enhancing market access, promoting technical and entrepreneurship skills; and facilitate linkage between youths and other support initiatives, improvement of social services, and promotion of rural development. The study urges the government and other stakeholders to guarantee youth farmers access to productive resources, subsidized inputs, agriculture marketing, and information and extension services specifically targeting youths. It is important to involve youths in developing agricultural policy frameworks to build their sense of ownership and ensure that their matters are well articulated in the agriculture frameworks.

Keywords: Agricultural policy frameworks, Youths, Poverty reduction.

Introduction

Agriculture is recognized as a primary source of livelihood to most of the rural dwellers in Africa and an important contributor in economic growth (1). It is a significant sector in Tanzania employing more than 70% of the population (2, 3) and contributing 25% of the GDP (4). Scientific studies (5, 6) and policies (7, 8, 9) indicated the sector enhancing employment creation, food security and reducing poverty. Youth are important players in the agriculture sector. They deserve special attention, support and follow up so as to utilize their energy, talent and passion in solving food insecurity challenge (10). The role of agriculture in creating wealth and jobs for youths has been recognized. Nevertheless, the link between youth and agriculture is insufficiently translated into public policy. Studies (11, 12) suggest the solution to promote youth engagement in agriculture to include supportive policies and frameworks, which promote capacity building, stakeholder investment, and creating a conducive environment that takes youth into consideration. Additionally, youth are supposed to be looked as part of the solution and contributors to decisions and policy processes of concern to agricultural productivity (10).

This study regards policy frameworks and strategies as the tools and guidance to achieve the intended quality and the sector goals (13, 14, 15). Sector policy frameworks play important roles in transforming sector performance for economic growth (16). They also guide performance, and resource allocation, management and utilization (17, 18). Policy frameworks promote collaboration among the key actors in the sector by providing the opportunity to the stakeholders to participate in designing and implementing activities (17).

To harness the potential of the agriculture sector in Tanzania, a number of policy frameworks have been developed to create conducive environment for youth engagement in the sector. Some of the frameworks include National Agriculture Policy of 2013, which acknowledges the importance of facilitating youth to access productive resources including surveyed land, labour saving technologies, irrigation infrastructures, financial capital, agriculture inputs, and extension services to inspire youth engagement in agriculture activities (7). Also, the policy emphasizes incorporating youth in agriculture by providing agribusiness skills in collaboration with the Ministry responsible with Education and Vocational Training. The second framework is the Agricultural First Strategy (19). In its 8th pillar, the framework indicates the development of science, technology and human resources. The strategy intended to support agricultural loans and land to entrepreneurial agricultural graduates as a means of retaining them in the sector. Reference is also made to the National Strategy for Youth involvement in Agriculture 2016-2021. This aims to empower youth engaging in agriculture by ensuring access to productive resources, such as financial, skills, inputs, information, and market (8). The fourth framework is titled Building a Better Tomorrow. This focuses on empowering youth and women to engage in agribusiness for sustainable food system and improved livelihoods. The initiative supports access to agricultural land for youth, trainings, and funds. These agricultural strategies had considerable effects on youths who are involved in agriculture activities (10).

Nevertheless, there is low engagement of youth in the agriculture sector (20, 21, 22). This is due to various reasons, including, lack of financial resource, land, agriculture information, inability to access and use productive technologies, lack of agricultural marketing, lack of training and guidance on good agricultural practices and lack of an appropriate network for youth organization (23, 24, 25,26,27,28, 29, 30). Therefore, this paper reviews the agriculture policy and national strategy for youth involvement in agriculture, to analyse whether the policy and strategy included the factors attracting youth to engage in agriculture.

Study Objectives

1. To identify the role of agriculture policy framework in promoting youth engagement in the agriculture sector.
2. To determine the factors attracting youth engagement in agriculture activities in the study area.
3. To determine the challenges limiting youth engagement in agriculture activities in the study area.

Methodology

The study used four online databases, included to identify relevant literature (Table 1). Relevant scientific journal articles were searched based on factors promoting or constraining youth participation in agriculture as search keywords. A search from the identified databases produced 320 publications. These were screened basing on their titles and abstract to retain 31 papers.

The geographical coverage of the identified literature was mainly sub-Saharan Africa. A preferred reporting items for systematic reviews and meta-analyses was adopted (31).

Table 1. Databases searched for related literature

Source	Reviewed studies	Included studies	Selected studies	Method used
Google scholar	102	30	12	Automatic
Science Direct	96	24	9	Automatic
Scopus	67	12	7	Automatic
PubMed	52	6	3	Automatic
Others sources	3	0	0	Manual
Total	320	72	31	

The databases were selected to get articles with high standards (32). Automated search was conducted by searching in the selected databases using pre-defined key words. The search was conducted by using keywords from the research title and sub headings (33). Manual search was performed by using the snowball method—looking for papers cited by the primary studies selected through the automated search. Figure 1 illustrates the literature search and selection process.

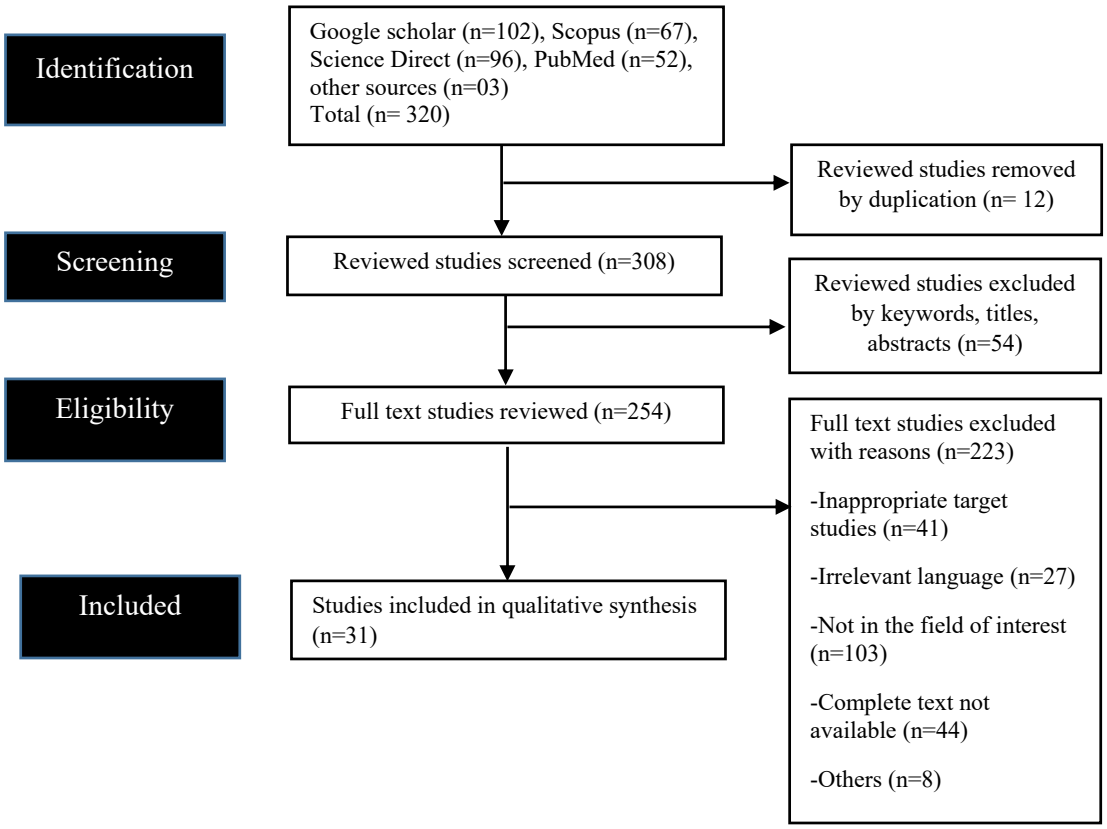

Figure 1. PRISMA flow diagram showing selection process of reviewed studies

The study used criteria as a way of reducing numerous studies while on the other hand retaining relevant studies of interest for the study. Several criteria were (exclusion criteria) applied to identify papers which were not corresponding to the purpose of the study. The papers that do not fulfil the predefined eligibility criteria were removed from the study (34). The study recorded all reasons for excluding each article for the study. First, the reviewed articles required to have relevant information with the study needs. The second criteria based on databases used to search literatures. Only reputable online databases used to search and obtain relevant published papers, including, Google scholar, Scopus, Direct Science, PubMed. The third criterion was Language used for the study. Studies written in English language were considered in the reviewing process of the study (35, 36, 37). Studies used non-English language were not reviewed for this study. Despite the fact, narrowing language requirements excluded to get important and relevant studies from other languages. The fourth criteria based on multiple duplicated publication of the paper. Papers published in more than one venue, hence, the study considered only the first paper. The final criteria based on the fact that once the full paper was not available in the searched database. This happens to some of the venue which offer an abstract for free but if you want to access the full text you have to pay for or sometimes the full text is not available. The exclusion criteria were employed to 320 papers which were obtained by automatic and manual search. After reading the titles, abstracts and later the full article 31 papers were selected as they were relevant for the study (Figure 1).

Principal Component Analysis

Analysis of the factors attracting and discouraging youth engagement in agriculture activities were performed by using Principal Component Analysis (PCA). A Principal Analysis Component Approach is a multivariate analytical technique that reduces the dimensionally (components) of interrelated variables while simultaneously retaining the existing variation of the data (61, 70) and make interpretation of the results relatively easier. The PCA produces few principal components which explain most of the variation in a dataset. The main intention is to reduce the number of variables to few factors without losing the most original information (61). In a given set of correlated variables, the Principal Component Analysis creates components whereas each component is a linear combination of the initial variables. Moreover, the components were ordered as the first principal component captures the largest variation within the original variables, meanwhile the second component measures the second largest variation, and so on (69). As the PCA yields numerous components, the Kaiser criterion decides the number of PCs to retain. The Kaiser criterion indicates that only components with eigenvalues greater than 1 were retained. Again, the Kaiser-Mayer-Olkin measure of sampling adequacy (KMO) and Bartlett's Sphericity test were used to determine the appropriateness of the data for PCA. A KMO value ≥ 0.5 and a statistically significant Bartlett's Sphericity test $p < 0.05$ meant that there was sufficient correlation and the data were appropriate for PCA.

Findings

The study used review method and principal component analysis to analyse the information obtained from literature and collected data from the field on the factors attracting and affecting youth engagement in agriculture related activities. The reviewed scientific studies from the sample offer a rich body of knowledge concerning the specific circumstance on policy frameworks and performance indicators to youth poverty reduction. Meanwhile, the

information collected from the field provides the practical and real experience from the targeted respondents (youth farmers).The study presents the results in response to research objectives. First, the results on the role of agriculture policy framework in promoting youth engagement in agriculture sector. Second, the results on the factors/indicators attracting youth engagement in agriculture related activities. Third, the challenges affecting youth engagement in agriculture related activities.

Role of Agriculture Frameworks in Promoting Youth Engagement in Agriculture

The study reviewed the agriculture policy of 2013 and National Strategy for Youth Involvement in Agriculture of 2016 to assess their contribution in promoting youth engagement in agriculture sector activities. Agriculture policy frameworks act as catalyst in mobilizing resources, access to agriculture inputs, agriculture infrastructures, and collaborating with development stakeholders to youth farmers so as to support development and poverty reduction in developing countries (13, 18, 38, 39). Furthermore, agriculture policy frameworks offer guiding principles and long-term objectives aimed at promoting national growth and development. After a thorough review the result indicated the two frameworks namely Agriculture policy, and National Strategy for Youth Involvement in Agriculture realized the potentiality of youth in agriculture sector (see Table 2).

Table 2. Policy frameworks recognising youth in the agriculture sector in Tanzania

Policy	Specific statement focusing on youths
National Agriculture policy (2013)	• Accessibility to productive resources including labour saving technologies, surveyed land, and irrigation infrastructure. • The government in collaboration with private sector shall create conducive environment for youth to settle in rural areas through improving social services, infrastructures, and rural development. • In collaboration with the Ministry responsible for Education and Vocational Training the incorporation of agriculture in the education and VETA curricular to create awareness to youth participation in agricultural development and provide agribusiness skills. • The government in collaboration with the private sector, civil societies, youth's organizations and business community shall promote the culture of entrepreneurship among youths. • Equitable access to land and other resources shall be promoted.
National strategy for youth involvement in agriculture (2016)	• Facilitate land acquisition and accessibility for agricultural investment. • The strategy assured to facilitate acquisition and accessibility of financing resources for youth to invest in agriculture • Facilitate acquisition of agricultural inputs, machinery and other necessary support services. • Facilitate development and use of irrigation infrastructure. • Enhance marketing of agricultural products. • Facilitate linkage between youth and other agriculture support initiatives • Promote decent work in the agriculture sector. • Mainstreaming cross cutting issues in youth involved in agriculture.

Source: (URT, 2016, URT, 2013).

Factors Attracting Youth Engagement in Agriculture Related Activities

Principal Component Analysis was employed to measure the factors attracting youth engagement in agriculture (Table 4). The indicators used to determine the appropriateness of the Principal Components (PCs) used the Kaiser-Meyer- Olkin measure of sample adequacy (KMO) and Bartlett's tests of Sphericity. The results revealed that a Kaiser-Meyer-Olkin of 0.523 which is greater than the required 0.5, on the other hand, the Bartlett's tests of Sphericity $\chi^2 = 112.061$, df = 55, p = 0.000, is significant (P<0.05) which indicates that the sample was adequate for Principal Component Analysis and the variable are correlated enough to proceed with PCA analysis. The Principal Component Analysis (PCA) result based on the varimax rotation whereby the factors with eigenvalues greater than 1 were included. Five components were established from eleven initial factors (Table 3). These explained 55% of the variation.

Table 3. Kaiser-Meyer- Olkin Measure of Sampling Adequacy and Bartlett's tests of Sphericity

Kaiser-Meyer- Olkin Measure of Sampling Adequacy		.523
Bartlett's tests of Sphericity	Approx. Chi-Square	112.061
Df		55
Sig		.000

PC1 had relatively strong loadings on two variables of policies, strategies, and programs integrate youth issues (0.742), and access to agriculture resources (0.674). The component was named "supportive environment". The strong correlation between these variables suggests that improvements in policy can enhance resource accessibility, benefiting agricultural development for youth. Access to agriculture resources loading significantly (0.674), indicating that availability of resources is a fundamental factor that can be directly influenced by policies and programs. The second component (PC2) had relatively high loading on the variables which ensured youth with good agriculture practices which are conducive climatic condition and trainings on good agriculture practices. The component was named "favourable climate and capacitation to youth beneficiaries". Conducive climatic provide (.725) the necessary physical environment, while training on good agriculture practices (.656**)** equips youth with the knowledge and skills required for modern agricultural practices. Similarly, the third Component (PC3) signifies two relatively strong loading on the variables of access to agriculture information and linking youth in agriculture Initiatives. The component was named "access to agriculture opportunities". Access to agriculture information has a high loading (0.656). This underscores the importance of information dissemination in agriculture. Linking youth in agriculture initiatives loads significantly (0.678), highlighting the role of youth-focused initiatives in promoting agricultural engagement among young people. Access to information ensures youth awareness on best practices, market trends, and technological advancements. Initiatives that specifically target youth can foster greater engagement and innovation in the agricultural sector.

Moreover, Principal Component four (PC4) had high loading on two variables of market and awareness and was named access and awareness on markets. Awareness on agriculture opportunities has a high loading (0.676), emphasizing the need for youth to be aware of the opportunities available in agriculture. On the other hand, agricultural market is loading significantly (0.568), reflecting the importance of access to markets for selling produce and obtaining inputs. The strong correlations indicate that these factors are closely linked and vital for sustainable agricultural development. PC5 had strong loading on access to extension services. The component was named access to extension services to beneficiaries. Youth access to extension services loading (0.647), highlighting the importance of recommended services that provide technical support and information to youth farmers.

Table 4. Factors attracting youth engagement in agriculture activities

Variable	PCI Supportive environment	PC2 Favourable Climate	PC3 Access to agriculture opportunities	PC4 Market awareness and access	PC5 Access to extension services
Conducive climatic condition	.148	**.725**	.019	.055	.034
Access to agriculture resources	**.674**	-.188	.158	.147	.147
Trainings on good agriculture practices	-. 099	**.656**	.100	-.097	-.005
Youth access to agriculture inputs	.030	-.184	.047	.379	-.689
Extension services	.097	-.107	-.106	.191	**.647**
Policies, strategies and programs integrate youth issues	**.742**	.269	-.169	-.012	-.098
Financial institutions for agriculture credits	-.090	.045	.337	.385	.425
Awareness on agriculture opportunities	.268	-.131	.093	**.676**	.031
Access to agriculture information	.189	.020	**.656**	.111	.038
Agricultural market	-.350	.399	-.301	**.568**	-.025
Linking youth in agriculture initiatives	-.177	.089	**.678**	-.083	-.144
Eigenvalues	**1.482**	**1.291**	**1.154**	**1.091**	**1.066**
Proportion of variance explained	**55.303**				
Kaiser Meyer-Olkin	**0.523**				
Bartlett's test	**112.061**				

Challenges Affecting Youth Engagement in Agriculture Related Activities

In accumulating the challenges affecting youth engagement in agriculture related activities, a total of nine statements were included in the analysis. The nine included statements produced four components. The factor loadings of the particular variables were provided in Table 6. The components included explained about 52.158 of the total variability in the data set. Each component was labelled according to variables with the strongest loading within each component as offered in Table 5. Variables loadings greater than 0.4 highlighted in bold font for comfort interpretation. The analysis was tested by using the Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's tests of Sphericity. Table 5, indicate the Kaiser-Meyer-Olkin test value of 0.496 is below the acceptable threshold of 0.5, revealing that the sample size might be inadequate for a reliable factor analysis. However, the Bartlett's test of Sphericity: $\chi^2 = 56.582$, df = 36, p = 0.016, is significant which indicating the correlation matrix is not an identity matrix and is suitable for factor analysis.

Table 5. Kaiser-Meyer- Olkin Measure of Sampling Adequacy and Bartlett's tests of Sphericity

Kaiser-Meyer- Olkin Measure of Sampling Adequacy	.496
Bartlett's tests of Sphericity Approx. Chi-Square	56.582
Df	36
Sig	.016

The first PC (PC1) had strongly positive loadings in three variables of limited access to agriculture information (0.651**)**, lack of agriculture interventions for youth (0. 528**)**, and capacity and skills constraints (0.503**)**. The component was named "Insufficiency capacitation with limited information". The results reveal that insufficiency capacity, skills and limited access to agriculture information hampered youth to practice good agriculture (farm preparation, planting, and farm management) and to access agriculture opportunities including on market, weather updates and appropriate crops to plant. The second PC (PC2) had strong loading variables of resource constraints (0.683**)**, and limited access to labour technologies (0**.**594**)** and was named as inadequate access to resources. The component underlines the inability to access land, financial credits, and knowledge to labourers and advanced technologies discouraging youth engagement in agriculture related activities. The third component (PC3) showed high loading in one variable of perception/attitude constraint (0.817) and the component was named Perception on agriculture activities. The variable indicates the negative perception relied on the ground that the agriculture contributes minimal profits, no guarantee on weather condition, regards agriculture activities for the failures, and it is a work for the old people. The principal component four (PC4) has relatively high loadings on one variable of agriculture inputs constraint (0.836) and the component was named limited access and unaffordable inputs. The component reveals limited access to agriculture inputs including fertilizers, improved seeds, technology and knowledge discouraging youth engagement in agriculture related activities.

Table 6. Challenges affecting youth engagement in agriculture related activities

Variable	PC1 Insufficiency capacitation with limited information	PC2 Inadequate resources	PC3 Perception on agriculture activities	PC4 Limited access and unaffordable Inputs
Resource constraints	.009	**.683**	.125	.197
Capacity and skills constraints	**.503**	.268	-.038	.110
Limited access to agriculture information	**.651**	-.015	.061	-.122
Limited access to labour technologies	.125	**.594**	-.436	-.068
Agriculture infrastructure constraints	-.557	.195	.346	.192
Agriculture inputs constraints	-.110	.009	-.162	**.836**
Lack of agriculture interventions for youth	**.528**	-.168	.300	.438
Limited access to agricultural markets	.055	-.489	-.109	.175
Perception/attitude constraint	.029	.129	**.817**	-.166
Eigenvalues	**307**	**1.213**	**1.145**	**1.029**
Proportion of variance explained	**52.158**			
Kaiser Meyer-Olkin	**.496**			
Bartlett's test	**56.582**			

Discussion

The study concise the information and data obtained from literature review and collected from the field on youth farmers. The aim of this study was to identify the role of agriculture policy framework in promoting youth engagement in agriculture activities, to determine the factors attracting youth engagement in agriculture activities, and to determine the challenges limiting youth engagement in agriculture activities in the study area. The first section of the discussion contains the results on the role of agriculture frameworks to youth engagement in agriculture activities (based on review of National Agriculture Policy of 2013 and National Strategy for Youth Involvement in Agriculture of 2016), and the second section of the discussion focuses on the factors attracting and discouraging youth engagement in agriculture activities (based on data collected from the field and analysed by using Principal Component Analysis

Role of Agriculture Policy Framework in Promoting Youth Engagement in Agriculture Activities

Sustainability of agriculture sector is largely depending on youth engagement due to the fact that youth comprise 67% of the labour force in Tanzania (8), and are characterized as innovative, can adopt new technologies and are energise enough to produce (35). The reviewed results (see Table 3) indicates policy frameworks guaranteed youth to access agriculture resources of surveyed land, technology, agriculture capital and skilled labours for increasing production and improving youth farmers livelihoods as shown in agriculture policy of (2013: 24) and national strategy for youth involvement in agriculture of (2016:16). The result is in line with the previous studies (18, 46) recommend access to productive resources of land, credits, and labour skills is crucial in inspiring youth engagement in agriculture and stimulate economic growth of the nation. Agriculture resources has its great contribution in increasing productivity as the youth farmers apply the knowledge and skills for good agriculture practices (41, 42). Study by (61) highlighted guarantee of agriculture resources of land, financial credits, technologies, skilled labour have great contribution in increasing agriculture productivity and promote youth engagement in agriculture activities.

Likewise, the reviewed frameworks indicate the government to collaborate with agriculture stakeholders to promote youth engaging in agriculture through establishment of conducive environment Conducive environment encompassing agriculture infrastructure, favourable policies, agriculture research and extension services. Sustainable agriculture wants strong coordination of resources, commitment and collaboration among stakeholders (48, 49). Smart agriculture depends to stakeholders' (including youth) involvement from the policy framework formulation, implementation, plans and resources detailed in the frameworks (47, 52).The results are related with the study finding of (66) emphasized empowering youth in agriculture activities needs attractive environments including access of productive resources, infrastructures, and policy frameworks to acknowledge their role. Additionally, study by (67) reported that empowering youth through creating attractive environment gives choice to them to engage in activities related to agriculture.

Moreover, the reviewed frameworks in Table 3 reveals youth to access agriculture inputs as a means to increase productivity and earning income. The reviewed agriculture policy frameworks emphasize provision of farm machinery, the use of agricultural equipment, machinery, knowledge, agriculture information, improved seeds and fertilizers to improve

agriculture productivity and motivate youth engagement in agriculture activities. The results are in line with the study done by (65) who recommended that proper utilization of agriculture input ensures the ability, quality, accuracy and efficiency of human being. And improve productivity. Knowledge on farming enhance good agriculture practices, while access to agriculture information enables youth farmers to be knowledgeable on farming cycle, the usage of agriculture inputs, access of finance, weather updates, harvesting and market of the products. Moreover, understanding the potentiality of youth in agriculture sector, the reviewed agriculture policy frameworks assured youth to access markets for selling there produced products. Since agriculture markets is one of the crucial problem hampering youth engagement in agriculture related activities the frameworks acknowledged to improve the area so as to attract youth involve in agriculture activities. Youth farmers are not assured with the markets for their produced products, and sometimes they sell their produced in low prices. Study by (66) conclude that market access is a vital factor influencing youth engagement in remunerative agriculture related activities. Youth needs maximum benefits from agriculture to improve their personal and family livelihoods. The benefits would be obtained through selling their produced products in reasonable prices.

Factors Attracting Youth Engagement in Agriculture Sector

The first component (PCA1) relates to the variables of policies, strategies, and programs integrate youth issues, and access to agriculture resources and the component was named. "Supportive environment for youth to engage in agriculture activities". Agriculture resources are fundamental factors for youth engagement in agriculture activities. Meanwhile, the policy frameworks are crucial in ensuring that youth issues are integrated into agricultural development plans. The result concur with the previous studies (18, 46) recommend access to productive resources of land, credits, and labour skills is vital in stimulating youth engagement in agriculture activities and economic growth of the nation. Agriculture resources has great contribution in increasing productivity as the youth farmers apply them accordingly for good agriculture practices (41, 42). Study by (67) recommends agriculture strategies are imperative in resource allocation, and plans for implementing agriculture interventions.

The second component (PC2) relate to ensure youth with good agriculture practices which are conducive climatic condition and trainings on good agriculture practices. The component was named "favourable climate and capacitation to youth beneficiaries". Conducive climatic relates with physical environment, resources, and policy frameworks, while training on good agriculture practices equips youth with the knowledge and skills required for agricultural practices. Previous studies by (43, 44, 45, 46) recommended agriculture knowledge and skills contribute the proper use of inputs, and cultivation practices to increase agriculture productivity. The use of improved technologies, fertilizers, improved seeds and access to agriculture information were admitted as important strategies to attract youth and development of the agriculture sector. Additionally studies by (39, 44, 56), emphasis the development of agriculture needs supportive services that facilitate high production and fascinating youth engagement in agriculture related activities. Furthermore, studies by (45, 48, 49, 50) conclude the use of agricultural inputs experience to produce more output of higher quality.

Component three (PC3) denotes access to agriculture information and linking youth in agriculture Initiatives and component was named "access to agriculture opportunities". Access to agriculture information ensures youth awareness on the best practices, market trends, and technological advancements. On the other hand, linking youth in agriculture initiatives highlighting the role of youth-focused initiatives in promoting youth engagement in agriculture

activities. Information and youth initiatives are chosen because they empower the youth by providing them with knowledge and opportunities to engage in agriculture. Simultaneously, initiatives that specifically target youth can foster greater engagement and innovation in the agricultural sector. Study by (68) indicates government support services and initiatives have strong credit to retain youth in agriculture related activities. Access to agricultural information to farmers is an essential in farming operations as it allows youth farmers to be informed on the important information on opportunities related to agriculture sector, good agriculture practices, and farm management (53, 54). Empirical studies (15, 16) emphasize youth farmers need to be informed and be knowledgeable on farming cycle of farm preparations, the usage of agriculture inputs, finance, harvesting and market of the products. The vitality of disseminating information and knowledge on farming is an important means to increase productivity to youth farmers (17, 20).

Principal Component four (PC4) presents the access to market and awareness, and the component was named awareness on markets. Market access is a crucial factor to motivate youth engagement in agriculture activities due to the fact that it inspire youth farmers to maximize production and contribute to household income and food security. Access to agricultural marketing has been the heart in pursuing economic transformation and increasing agriculture productivity, raising income and increasing national revenue (66). Access to markets motivate youth farmers to maximize production and contribute to household income and food security. Agricultural market assured youth farmers to improve their household income, purchasing agriculture inputs, and basic needs through selling there produced products. Study by (60) indicated that lack of access to market offer an obstacle to youth engagement in agriculture as participants do not have market to sell their produced products. Additionally, awareness on agriculture opportunities is important to youth farmers as they are informed on the market prices, agriculture interventions, and agriculture trainings. Study by (63) concludes access to agriculture information gives opportunity of being aware on issues relating to agriculture activities.

Component five (PC5) grants the extension services and the component was named access to extension services to beneficiaries. Youth access to extension services, highlighting the importance of recommended services that provide technical support and information to youth farmers. Study by (64, 65) underlines that agriculture extension services is necessary requirement to improve agriculture productivity and motivate youth engagement in agriculture activities. Contact with extension officers assist in sharing important information in agriculture activities especially to youth engaging in agriculture and improve youth knowledge and skills. Furthermore, (62) emphasizes provision of extension services to youth farmers makes encouragement to the youth to participate in agriculture activities.

Challenges Discouraging Youth Engagement in Agriculture Activities

The first principal component (PC1) consist three strongly positive variables of limited access to agriculture information, lack of agriculture interventions for youth farmers, and capacity and skills constraints. The component was named "Insufficiency capacitation with limited information". The results reveal that insufficiency capacity, skills and limited access to agriculture information hampered youth to practice good agriculture practice and to access agriculture opportunities including on market, weather updates and appropriate crops to plant. Empirical studies by (6, 58) indicates that lack of access to agriculture information prohibits youth farmers to get information for agricultural markets, agriculture inputs, and good agriculture practices.

The second Principal Component (PC2) present the resource constraints, and limited access to labour technologies, and the component was named inadequate access to resources. The component underlines the inability to access land, financial credits, and knowledge to labourers and advanced technologies discouraging youth engagement in agriculture related activities. Empirical studies by (51, 59, 60) highlight that poor coordination of agriculture resources and exclusion of some groups with high potential in farming discourages farmers including youth to engage in production and leading to low productivity and food insecurity. Additionally, studies by (25, 46) asserted that youth are limited to access land as majority of youth inherit, receive from relatives and others use to hire seasonally. In line to productive resources, study by (28, 61) indicated that youth are lacking collaterals and awareness to financial institutions which limit to purchase agriculture inputs and cultivating large farms. That majority of youth dwelling in rural areas have little/no information on agriculture loans due to the fact that many institutions are located in urban areas.

The third component (PC3) relates to the perception/attitude constraint, and the component was named Perception on agriculture activities. The negative perception relies on the ground that agriculture contributes minimal profits, no guarantee on weather condition, regards agriculture activities for the failures, and it is a work for the old people. The result concur with the previous study by (60) emphasizes that negative perception of youth towards agriculture activities relies on the ground of poor technologies, depending on rain fed, agriculture as a last option for youth when all other options have been exhausted as a career option.

The principal component four (PC4) consists one variable of agriculture inputs constraint, and the component was named limited access and unaffordable inputs. The component reveals limited access to agriculture inputs including fertilizers, improved seeds, technology and knowledge discouraging youth engagement in agriculture related activities. The result is in line with the previous studies by (63, 64) portrayed inability to access and insufficiency use of agriculture inputs including fertilizers, improved seeds, knowledge on farming practices, and inadequate technologies result to low productivity which highly discourage youth to engage in agriculture related activities. Transformation of agricultural sector requires the adoption of agricultural inputs of fertilizers, improved seeds, and agricultural technologies to increase productivity and income to youth farmers. The agriculture input is the important element to enhance productivity and sustain youth in the agriculture sector.

Conclusion and Recommendations

The study aimed to explore and capture the role of agriculture policy framework in promoting youth engagement in agriculture activities, and determining the factors attracting and challenging youth engagement in agriculture activities. The study used a review approach and Principal component analysis to analyse the roles of policy frameworks, and factors encouraging and challenging youth engagement in agriculture activities in Tanzania. Two agricultural frameworks namely agriculture policy and national strategy for youth involvement in agriculture were reviewed to get their roles in influencing youth engagement in agriculture activities. The findings reveal that the frameworks highlighted to allocate productive resources of land, finance and skilled labours to youth (see National agriculture policy 2013:24, National strategy for youth involvement in agriculture, 2016:16). The other factors documented as role to encourage youth engagement in agriculture activities in the two policy frameworks are to access agriculture inputs improved seeds, fertilizers, knowledge, mechanized agriculture, provision of agriculture infrastructures, enhance to access agriculture marketing, promoting technical and entrepreneurship skills, facilitate linkage between youth and other youth agricultural support

initiatives, and improvement of social services, rural infrastructures and promotion of rural development. This indicates that the access and proper utilization of the agriculture resources and services promotes high productivity and income which would motivate youth engagement in agriculture related activities. However, the reviewed frameworks admitted the factors discouraging youth to engage in agriculture due to inadequate access to agriculture resources, poor agriculture infrastructures, insufficiency of proper marketing networking, and insufficiency of agriculture inputs. Basing on the principal component analysis the findings reveal five PCA for factors attracting youth in agriculture activities, and 4 PC showing the challenges affecting youth engagement in agriculture. The result reveals that many variables in 5 components were insignificant in attracting youth engagement in agriculture activities, while few variables indicated significant (see Table 4). However, on the factors challenging youth engagement in agriculture activities, 4 PCs were created and majority of its variables were insignificant (see Table 6). The study recommends to ensure youth engaging effectively in agriculture related activities, the governments, and development stakeholders need to address factors limiting youth engagement in agriculture related activities. It is also important for the government and development stakeholders to guarantee youth farmers access productive resources, subsidized inputs, agriculture marketing information and extension services and create vibrant programs that specifically direct to youth. Lastly, to involve youth in developing agricultural policy frameworks build the sense of ownership and not implementers, as well as to ensure youth matters are well considered and articulated in the agriculture frameworks.

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