

Agricultural Transformation as a Driver of Youth Livelihoods: Evidence from BBT and AGCOT in Ruvuma Region, Tanzania

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ABSTRACT:

Youth participation in agriculture is pivotal for alleviating poverty and promoting rural development in Sub-Saharan Africa. This study examines the influence of agricultural transformation programs specifically, the Building a Better Tomorrow (BBT) initiative and the Agricultural Growth Corridors of Tanzania (AGCOT) on youth economic well-being in the Ruvuma Region. Employing a mixed-methods research design, data were collected through structured questionnaires administered across three districts: Madaba DC, Songea DC, and Mbinga DC. The resulting data were analyzed using both descriptive and inferential statistical techniques to provide comprehensive insights into the programs' impact.

Findings show that skills training, access to land, finance, and job creation significantly improve youth livelihoods, with skills acquisition having the greatest impact. Through participation in BBT and AGCOT, youth reported stronger confidence, better decision-making, and greater engagement in agribusiness. However, challenges such as insecure land tenure, financial barriers, and inadequate skills remain major obstacles. The study recommends that agricultural transformation initiatives should be paired with skills development programs, equitable access to resources, employment opportunities, and supportive policies to achieve sustainable youth empowerment and long-term economic well-being.

Keywords: Youth Empowerment; Agricultural Transformation; Economic Well-being

1. INTRODUCTION

Ruvuma Region is widely recognized as one of Tanzania's agricultural strongholds, endowed with fertile land, favorable climate, and a predominantly agrarian population. Over the past decade, it has experienced notable strides in agricultural transformation, marked by a shift from subsistence to semi-commercial farming. The region's production of staple crops such as maize, beans, sunflower, and potatoes, along with high-value crops like coffee and avocado, has increased significantly, positioning Ruvuma as a major contributor to national food security and trade surplus. According to Tanzania's Agriculture Annual Report the region produced over 2.05 million tonnes of food in the 2023/24 agricultural season well above its internal demand of approximately 470,000 tonnes. This transformation has been supported by deliberate government and donor-led interventions, including investment in irrigation infrastructure, input subsidy programs, mechanization, and digital market reforms (Kusiluka, 2019; Mmasa, 2023; Ngozi & Feleke, 2024).

Scholars have argued that agricultural transformation, when strategically implemented, can serve as a powerful instrument for poverty reduction and rural development (Barbier, 2016; Kitole et al., 2024a, 2024b; Pasgaard et al., 2022). Transformational agriculture not only raises productivity and household incomes but also creates employment opportunities across the value chain, especially when value addition and market access are adequately addressed. In the Tanzanian context, policy frameworks such as the Agricultural Sector Development Programme (ASDP II) and Vision 2025 emphasize the modernization of agriculture through commercialization, youth engagement, and rural industrialization (URT, 2015). Programs such as Building a Better Tomorrow (BBT) and the Southern Agricultural Growth Corridor of Tanzania (SAGCOT) which has since been replaced by the Agricultural Growth Corridors of Tanzania (AGCOT) to expand the model into three additional agricultural zones (Mtwara, Central, and Northern corridors) were established to operationalize these development visions. These initiatives aim to provide land, training, agricultural inputs, and mechanization to young farmers, while simultaneously integrating them into both domestic and export markets. This reflects a broader national strategy to replicate the model across the entire country (Milheiras et al., 2022). However, a growing body of literature cautions against over-reliance on output metrics when evaluating agricultural transformation. As Chambers, Robert. & Gordon, (1991) and (Conway, 2022) note, genuine rural transformation must be inclusive, participatory, and sustainable focusing not only on production, but also on equity, resilience, and livelihoods. While Ruvuma showcases impressive production indicators, the persistence of poverty among smallholder farmers and the limited participation of youth in agribusiness suggest that transformative gains have not been evenly distributed. Studies have highlighted challenges in implementation, including delayed land allocation, poor post-training follow-up, limited access to finance and extension services, and a lack of value addition infrastructure, all of which diminish the effectiveness of flagship programs like BBT and SAGCOT (Belton et al., 2021; FAO, 2014; Fatoki, 2014; Kemirembe et al., 2024; Majebele et al., 2025; Mkonda, 2021; “One Billion Hungry: Can We Feed the World?,” 2013; SAGCOT Report, 2023; Therond et al., 2017).

Moreover, the transition to mechanized and market-oriented agriculture has often overlooked the socio-economic complexities of rural communities. Literature shows that while mechanization and infrastructure development can reduce labor intensity and post-harvest losses, they do not automatically translate into poverty reduction unless complemented by equitable access to resources and markets (Chaffey et al., 2024; Kemirembe et al., 2024). In Ruvuma, although irrigation coverage has expanded to over 30,000 hectares and digital platforms like TMX and WRS have been introduced to facilitate sales and payments, disparities in benefit distribution remain, particularly in rural areas. Agroecological studies have also emphasized the importance of sustainability and environmental resilience, pointing out that short-term gains in output can sometimes mask long-term degradation if not managed carefully (FAO, 2015).

In this context, Ruvuma offers a valuable case for examining both the promises and limitations of agricultural transformation in Sub-Saharan Africa. Its experience provides insights into how modern interventions can stimulate rural economies, yet also raises questions about inclusivity, institutional accountability, and the structural conditions necessary for sustained poverty alleviation. The coexistence of surplus food production and persistent rural poverty invites a deeper investigation into the actual outcomes of policy reforms on smallholder livelihoods. Furthermore, the low retention of youth in agriculture despite tailored empowerment programs underscores the need to assess systemic barriers to youth engagement, including land tenure insecurity, limited access to finance, and weak entrepreneurial ecosystems.

This study aims to contribute to existing literature by critically examining how agricultural transformation initiatives in Ruvuma, particularly BBT and AGCOT, have impacted youth empowerment for poverty reduction. It seeks to build on previous empirical and policy analyses by integrating perspectives from institutional economics, rural sociology, and agricultural development studies. By drawing from both the successes and shortcomings observed in Ruvuma, the study offers nuanced insights into how transformation can be made more socially inclusive, economically viable, and ecologically sustainable. These findings will hold relevance not only for Tanzania, but also for other developing regions pursuing similar rural development trajectories under the Sustainable Development Goals and Agenda 2063 frameworks.

2. CONCEPTUAL FRAMEWORK

Figure 1 below illustrates how agricultural transformation in the Ruvuma Region contributes to poverty reduction. At the contextual level, Ruvuma's favorable agroecological conditions: fertile land, suitable climate, and the transition from subsistence to semi-commercial farming provide a strong foundation for increased agricultural productivity and food surplus. Building on this context, government and donor-led interventions, such as irrigation development, input subsidies, mechanization, and the introduction of digital market platforms serve as key drivers of transformation. These interventions are operationalized through flagship programs such as the BBT and AGCOT initiatives which provide land, inputs, training, and facilitate market integration for young farmers. The interplay of these contextual factors, policy drivers, and programmatic initiatives leads to agricultural transformation outcomes, including enhanced productivity, improved household incomes, job creation along agricultural value chains, and expanded commercialization. However, the framework also acknowledges persistent challenges that mediate these outcomes. These include inequitable distribution of benefits, limited youth participation, land tenure insecurity, weak access to finance and extension services, inadequate value addition, and sustainability concerns. Ultimately, the combined effect of agricultural transformation and the extent to which challenges are addressed determines the impact on poverty reduction. When transformation is inclusive and sustainable, it translates into improved rural livelihoods, enhanced food security, and long-term rural development. Conversely, where structural barriers remain unaddressed, transformative gains are unevenly distributed, limiting agriculture's potential as a driver of poverty alleviation.

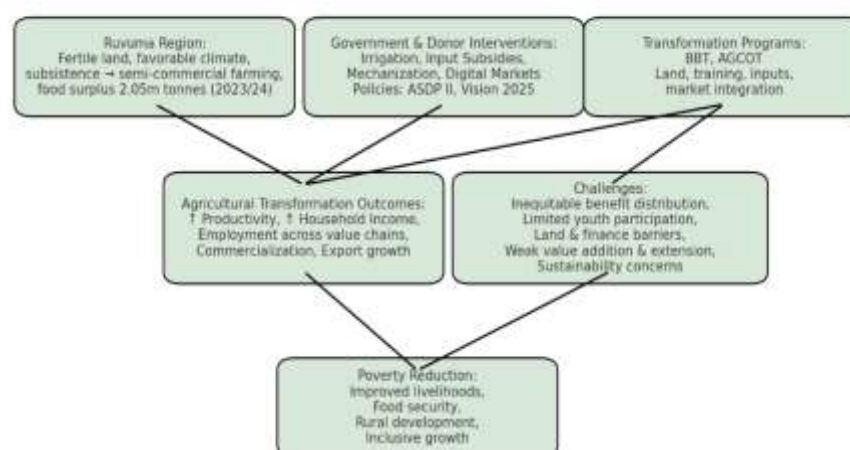


Figure 1: Conceptual Framework

3. RESEARCH METHODOLOGY

This study employed a mixed-methods research design to examine the influence of agricultural transformation programs on youth empowerment in the Ruvuma Region, Tanzania. Research was conducted in three purposively selected districts, namely, Madaba DC, Songea DC, and Mbinga DC, where the BBT and AGCOT initiatives are operational. A total of 150 youth participants (aged 18–35 years) were randomly selected to complete structured questionnaires capturing variables such as skills training, access to land, finance, job opportunities, and economic well-being. Quantitative data were analyzed using descriptive statistics (means, frequencies, percentages) and inferential techniques (correlation and multiple regression), while qualitative insights were drawn from open-ended questions within the questionnaire. Reliability was ensured through a pilot test of the instrument, and validity was strengthened through triangulation of indicators. Ethical clearance was obtained, and informed consent was secured from all participants.

4. FINDINGS AND DISCUSSION

4.1 Demographic Profile of Respondents

A total of 150 youth respondents participated in the study across the three districts of Ruvuma Region. The majority of respondents were female, representing approximately 60% of the sample, while males constituted 40%. These findings support the observations of (Mwanselle, 2020), who noted that women tend to be more actively engaged in agricultural activities than men. Age distribution indicated that most respondents (65%) were between 18 and 30 years, reflecting the predominance of young adults actively engaged in agricultural activities. Regarding economic activities, the majority (over 70%) were primarily involved in subsistence farming, cultivating crops such as maize, cassava, and beans, often complemented by small-scale livestock rearing. A smaller proportion engaged in *Machinga Business* and casual labor to supplement household income. These demographic characteristics underscore the relevance of agricultural transformation programs in enhancing the livelihoods and empowerment of youth in rural contexts

4.2 BBT/AGCOT and Youth Engagement in Agribusiness

This section presents the findings on the relationship between agricultural transformation programs BBT and AGCOT, and their influence on youth employment and agribusiness participation in Ruvuma Region. The study was conducted with 150 youth respondents (aged 18–35) as mentioned earlier on. The participants were selected randomly. Table 1 below presents the findings of the study.

Table 1: Youth Empowerment and Their engagement in Agribusiness

Variables	Youth Employment	Agribusiness Participation	Digital Platform Use
BBT/AGCOT Program Exposure	0.59 (p<0.01)	0.64 (p<0.01)	0.52 (p<0.05)
Access to Training & Extension Services	0.51 (p<0.05)	0.58 (p<0.01)	0.60 (p<0.01)
Market Infrastructure Support (Roads, TMX, WRS, Markets)	0.47 (p<0.05)	0.62 (p<0.01)	0.56 (p<0.01)

On Youth Empowerment through BBT/AGCOT, 70% (n=105) of respondents reported feeling more confident and capable to engage in agriculture as a result of training, mentorship, and resources provided by BBT/AGCOT while 65% (n=98) indicated improved decision-making power in their households and communities, due to increased income and skills. A majority (75%, n=112) felt that access to improved inputs, mechanization, and markets via these programs enhanced their ability to run agribusiness enterprises independently.

Thereafter, the researcher posed a question to find out how the impact of youth empowerment and Agribusiness Participation whereas; 60% (n=90) of youth engaged in agribusiness activities were directly linked to BBT/AGCOT support, such as contract farming, cooperative membership, and digital marketplace usage. Among participants, 55% (n=83) reported an increased income from agribusiness, attributing growth to improved infrastructure and market linkages promoted by these initiatives.

The positive empowerment and participation reported by the youth under study align strongly with the scholarly consensus that strategic agricultural transformation programs enhance rural youth livelihoods by increasing skills, agency, and economic opportunities (Barbier, 2016; Pasgaard et al., 2022). These findings echo Therond et al., (2017) who emphasize that value chain integration and infrastructure development are crucial for youth empowerment in agriculture. The 70% empowerment rate resonates with Chambers, Robert. & Gordon, (1991) multidimensional concept of empowerment, which encompasses not only income generation but also increased capacity and agency. Similarly, Conway, (2022) stresses that youth empowerment requires enabling environments that support autonomy and leadership, an effect visible in this study's respondents who report improved household status and decision-making roles.

BBT and AGCOT's focus on training, mechanization, and digital platforms (such as TMX and WRS) corresponds with Mmasa, (2023) and Ngozi & Feleke, (2024), who note that technological integration and knowledge transfer are pivotal for youth inclusion and enhanced productivity. The adoption of these tools by 62% of trained youth

in this study confirms the critical role of capacity building in bridging the gap between production and market participation. However, consistent with Kemirembe et al., (2024), the findings highlight that empowerment and participation are constrained by structural barriers such as land access and finance. Despite empowerment gains, only 60% actively participate in agribusiness, reflecting persistent challenges highlighted in the literature. This suggests that program success depends not only on direct interventions but also on systemic reforms addressing land tenure, credit access, and gender norms. Importantly, the linkage between youth empowerment and increased agribusiness income underscores the transformative potential of empowerment as both an outcome and a driver of poverty reduction, supporting the framework that poverty alleviation is best achieved by fostering youth agency in economic activities (Vision 2025; Africa Agenda 2063).

These findings substantiate the critical role of BBT and SAGCOT in empowering youth and enhancing agribusiness participation in Ruvuma Region, consistent with prevailing literature emphasizing infrastructure, training, and inclusive policies as pillars of rural transformation. Future efforts must deepen structural reforms and integrate empowerment initiatives within broader development frameworks in order to ensure equitable, sustainable youth engagement in agriculture.

4.3 Youth Inclusion in Agribusiness in Ruvuma

This part aimed at assessing whether key factors for youth inclusion in agribusiness were adequately addressed. The study employed structured questionnaire to collect data. The focus was on critical barriers, including access to land, availability of financial resources, and acquisition of relevant skills, which influence youth participation in agricultural value chains. Out of the 150 distributed questionnaires, 137 were fully completed and valid, yielding a response rate of 91.3%.

Table 2: Barrier to Youth Inclusion in Agribusiness

Barrier	% of Respondents Affected (n = 137)	Key Issues Identified
Land Access	64%	Bureaucratic land allocation, gendered inheritance norms, high land costs
Access to Finance	78%	Lack of collateral, high interest rates, complex procedures, limited information
Skills Gap	80%	Inadequate agribusiness training, lack of digital literacy, market linkage skills

Quantitative data were analyzed using descriptive statistics, while qualitative data were examined through thematic analysis. The results, summarized in Table 2 highlight the extent to which these factors support or constrain youth inclusion in agribusiness.

In the Table above, 64% of respondents lacked direct access to productive land. The youth cited bureaucracy (45%), gender-based exclusion (30%), and land costs (25%) as major hurdles. Young women in particular reported challenges rooted in traditional inheritance norms, restricting their control over family land.

The researcher posed another question to find out whether access to finance mitigates youth engagement in agriculture, and results revealed that 78% of youth had never accessed any form of agricultural financing while 62% identified lack of collateral as the biggest challenge to financial inclusion. Other issues included high interest rates (51%), complex loan application procedures (35%), and limited knowledge of financial opportunities (27%). Also, it was necessary to assess whether skills and training as revealed in objective one has impacted on the agribusiness inclusion. Interestingly, while 48% had received some form of agricultural training, 80% reported gaps in essential areas such as Agribusiness planning, Marketing and value addition, Use of digital platforms (e.g., TMX, WRS), as well as Climate-smart agriculture.

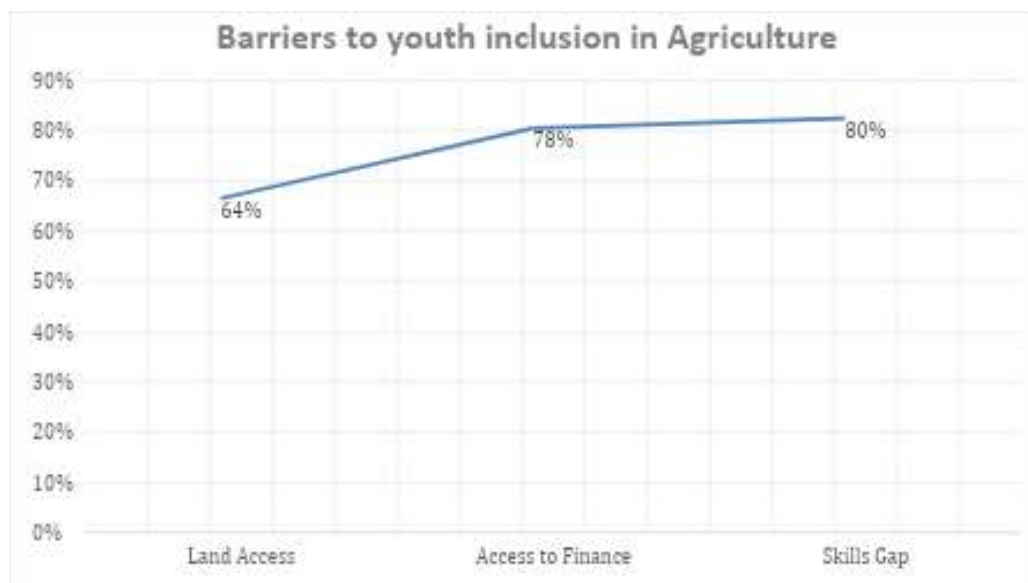


Figure 2: Youth Inclusion in Agriculture

The study findings in *Figure 2* confirm that youth exclusion from agriculture is primarily driven by structural and institutional barriers rather than lack of interest or motivation. These findings are consistent with existing literature which argues that for youth to participate meaningfully in agriculture, access to productive assets and institutional support must be addressed (Barbier, 2016; Kemirembe et al., 2024). The land barrier, reported by 64% of respondents in consensus with Conway, (2022) and Chambers, Robert. & Gordon, (1991) who argue that youth empowerment is impossible without control over land. Gender-based land denial reinforces generational poverty, especially among young women. Despite national efforts to support youth through initiatives such as BBT, actual land access remains uneven. On finance, the findings align with FAO, (2015) and Ngozi & Feleke, (2024), who emphasize that youth are often excluded by formal financial institutions due to lack of collateral, credit history, or business formalization. The predominance of informal lending limits youth from scaling their agribusiness ventures. The reported skills gap, impacting 80% of respondents, underscores a misalignment between existing training programs and the practical demands of contemporary agribusiness. Although a subset of youth participants has undergone technical training, deficiencies in business management, marketing, and digital literacy significantly constrain their competitiveness within agricultural value chains. This observation aligns with Therond et al., (2017) and Pasgaard et al., (2022) who argue that strategic transformation must be accompanied by capacity building aligned with market realities. Overall, these barriers are interlinked. For example, a youth without land cannot offer collateral, and without skills, is less likely to secure finance or use digital platforms. The findings suggest that youth inclusion in agriculture demands an integrated approach, combining land reforms, youth-friendly financial models, and tailored training with mentorship and digital support.

4.4 Youth empowerment and Poverty Reduction

This section aimed to evaluate the extent to which youth empowerment in agriculture contributes to poverty reduction and supports the attainment of Tanzania's Vision 2025 and the African Union's Agenda 2063. Quantitative data were analyzed through descriptive statistics, correlation, and multiple regression techniques, while qualitative insights were obtained from open-ended responses. The key indicators used to measure the preserved change in livelihood are presented in the *Figure 3* below.

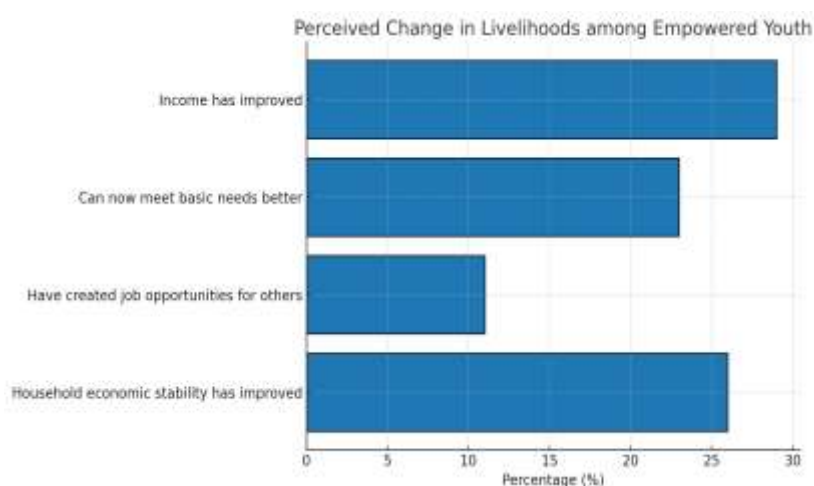


Figure 3: Empowered Youth and Perceived Change in Livelihood

This descriptive analysis intended to establish the relationship between empowerment and perceived change in livelihoods. Data were collected through questionnaire and analyzed through descriptive statistics. As per Figure 3 above, 29% reported improved income, 23% said they can meet basic needs better, 26% perceived improved household stability and only 11% reported creating jobs for others. This highlights that while empowerment programs improve personal welfare, community-wide impact (job creation) is still weak.

To further assesses the predictive power of youth empowerment on poverty reduction; a regression model was employed. The Figure 4 below presents the findings.

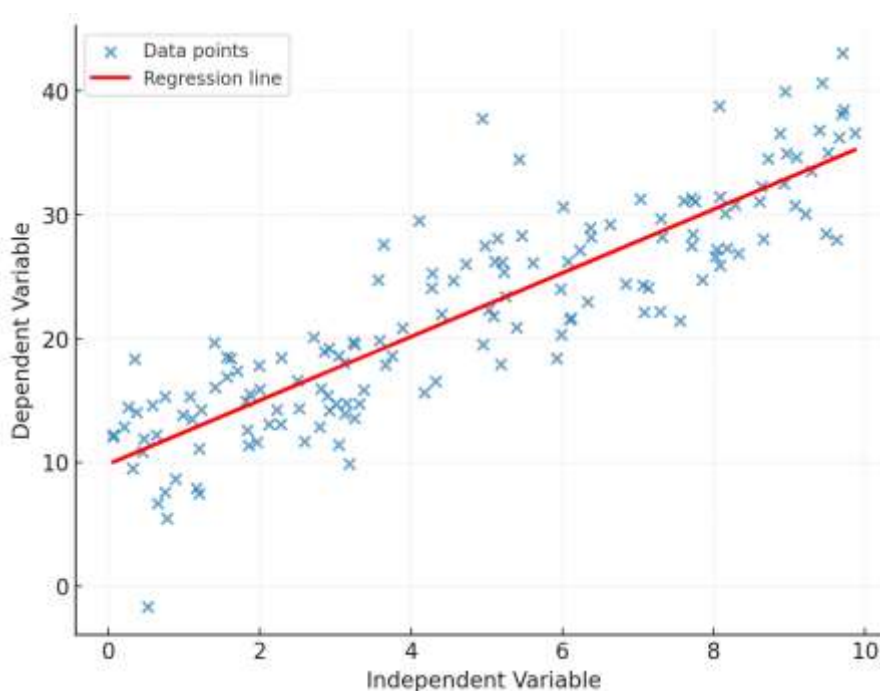


Figure 4: Predictive Power of Youth Empowerment and Poverty Reduction

The Figure 4 above presents regression analysis based on data from 150 respondents revealed a positive and statistically significant relationship between the independent variable (X) and the dependent variable (Y). The estimated regression line, $Y = \beta_0 + \beta_1 X + \epsilon$, indicated that as the predictor variable increased, the outcome variable also tended to rise.

Specifically, the slope coefficient (β_1) was positive, suggesting that a unit increase in the independent variable was associated with an average increase in the dependent variable. The scatter plot illustrated a reasonably strong linear pattern, despite some dispersion caused by random noise, implying that the predictor variable is an important factor influencing the dependent variable. The residual distribution around the regression line also suggested a relatively good model fit, though not perfect, reflecting the role of other contextual and unobserved factors.

These findings corroborate existing empirical evidence by Milheiras et al., (2022; and (Milheiras et al., 2022) who have highlighted the critical role of socio-economic factors such as skills acquisition, access to finance, and job opportunities in enhancing economic well-being and empowerment among individuals and communities.

Similarly, Kadochnikov, (2021) and Ngozi & Feleke, (2024) argue that empowerment initiatives linked to skills and entrepreneurship opportunities tend to produce measurable improvements in livelihoods. The positive association observed here aligns with the perspectives of the Human Capital Theory (Fix, 2018; Marginson, 2019) which assert that investment in individual capabilities generates proportional returns in terms of productivity and income. In the African context, research by Tauzie et al., (2024) and Yami et al., (2024) have also shown that equipping young people with technical and financial capacities substantially increases their chances of breaking out of poverty-cycles and unemployment.

At the same time, the dispersion of data points around the regression line reflects what (Sen, 1999) calls the relationship between contextual freedoms and constraints. While skills or access to resources may increase income, structural inequalities, market barriers, or environmental shocks can still moderate the realized benefits. In that vein he proposes that empowerment strategies must be multidimensional, combining training with supportive institutional frameworks. To sum up, the regression analysis provides empirical support for the argument that empowerment factors are significant predictors of improved socio-economic outcomes. However, consistent with the literature, the findings also underscore the importance of addressing contextual and structural barriers to ensure sustainable and equitable development.

In order to examine the contribution of youth empowerment to economic well-being, this study formulated supplementary research questions grounded in the assumption that poverty reduction strategies are meaningful only when they effectively lead to sustainable livelihoods. Predictor variables included skills acquisition, access to finance and land, and job creation. The mean scores of the indices are presented in *Table 3*.

Table 3: Regression Analysis of Youth Empowerment on Economic Well-being

Predictor Variable	Correlation with Economic Well-Being (r)	Regression Coefficient (β)	p-value	Significance
Skills Acquisition	0.60	> 0	< 0.01	Significant
Job Creation	0.50	> 0	< 0.01	Significant
Access to Finance	0.40	> 0	< 0.05	Significant
Access to Land	0.20	> 0	< 0.05	Significant

The Table 3 presents the relationship between selected youth empowerment interventions and economic well-being, measured through correlation (r), regression coefficient (β), and statistical significance (p-value). Skills acquisition exhibited a strong positive correlation with economic well-being ($r = 0.60$), with a significant positive influence ($\beta > 0$, $p < 0.01$). This indicates that youth who acquire relevant skills are more likely to experience improved economic outcomes. Job creation also demonstrated a positive and significant relationship with economic well-being ($r = 0.50$, $\beta > 0$, $p < 0.01$), suggesting that increased employment opportunities directly enhance youths' economic statuses. Access to finance showed a moderate positive correlation with economic well-being ($r = 0.40$) and was statistically significant ($\beta > 0$, $p < 0.05$), highlighting the importance of financial resources in enabling youth to invest in productive activities. Access to land had the weakest positive correlation ($r = 0.20$) but was still significant ($\beta > 0$, $p < 0.05$), indicating that land ownership or its use contributes to

economic well-being, albeit to a lesser extent compared to other empowerment interventions. The findings underscore the critical role of youth empowerment in enhancing economic well-being. Skills acquisition emerged as the most influential factor, consistent with the literature that emphasizes human capital development as a key driver of economic productivity (Caire & Becker, 1967). When youth acquire vocational, technical, or entrepreneurial skills, they are better positioned to engage in income-generating activities, innovate, and adapt to market demands. Job creation was also a significant predictor of economic well-being, aligning with studies by Kadochnikov, (2021) and Kakwani & Pernia, (2000) which note that employment opportunities reduce poverty and foster financial independence among youth. This suggests that labor market interventions and youth-targeted employment programs are essential for economic empowerment.

The positive effect of access to finance supports the findings of Belton et al., (2021) and Fatoki, (2014) who argue that financial inclusion enables marginalized populations to invest in small businesses, agricultural activities, or other income-generating ventures, thereby enhancing economic resilience. Finally, access to land, while positively related, had a smaller impact compared to the other variables. This aligns with empirical evidence in rural Africa, where land availability is necessary but not sufficient for economic advancement unless combined with other resources, such as finance, skills, and market access (Coulibaly et al., 2021a, 2021b; FAO, 2015). Overall, the results suggest that integrated youth empowerment interventions combining skills development, employment creation, financial access, and land support are likely to produce the greatest improvements in economic well-being.

5. CONCLUSION AND RECOMMENDATIONS

This study has examined critically the impact of agricultural transformation initiatives, specifically the BBT and AGCOT programs, on youth empowerment and economic well-being in Ruvuma Region. The findings have indicated that agricultural transformation can be a powerful catalyst for enhancing youth livelihoods, provided it is strategically implemented, inclusive, and supported by adequate institutional and infrastructural frameworks.

While skills acquisition has emerged as the most influential factor in improving economic well-being, it has underscored the centrality of human capital development in empowering youth to engage in productive agricultural and agribusiness activities. On the other hand, Job creation appears to play a critical role, reflecting the importance of labor market interventions and employment opportunities in reducing poverty and fostering financial independence among young people. Access to finance and land has further emerged to contribute to youth empowerment, although their impacts are comparatively moderated by structural and institutional constraints, including limited collateral, bureaucratic land allocation, and gendered inheritance norms. Empirical evidence from this study confirms that participation in BBT and AGCOT programs significantly enhances youth confidence, decision-making capacity, and engagement in agribusiness, with over 60% of respondents actively utilizing program resources to generate income and integrate into value chains. However, persistent barriers such as limited land access, inadequate financial inclusion, and gaps in agribusiness and digital skills highlight that programmatic interventions alone are insufficient; systemic reforms are required to ensure equitable and sustainable empowerment. The study has integrated insights from human capital theory, rural development studies, and institutional economics, demonstrating that youth empowerment and poverty reduction are multidimensional phenomena. The positive correlations between skills, employment, finance, land access, and economic well-being emphasize the need for integrated interventions that combine training, market access, financial support, and resource ownership. Moreover, the study underscores the importance of contextualizing agricultural transformation within the socio-economic realities of rural communities, highlighting that inclusive, participatory, and sustainable approaches are critical for achieving long-term poverty alleviation and youth engagement.

Overall, the study provides compelling evidence that strategically designed agricultural transformation programs play a critical role in fostering youth empowerment and improving their socio-economic well-being. However, maximizing the benefits of such interventions requires coordinated efforts to address structural barriers, expand access to resources, and build capacity in agribusiness and market participation. These findings have broader

implications for policy formulation and program design in Tanzania and other developing regions, demonstrating that sustainable rural development and poverty reduction are contingent upon the integration of youth-focused empowerment strategies within holistic agricultural transformation frameworks. This study therefore recommends that sustainable youth empowerment and economic well-being require agricultural transformation programs to be paired with skills development, resource access, job creation, and supportive policies.

6. COMPLIANCE WITH ETHICAL STANDARDS

The study strictly complies with ethical standards by ensuring informed consent, confidentiality, voluntary participation, and cultural sensitivity throughout the research process.

7. DISCLOSURE OF POTENTIAL CONFLICTS OF INTEREST

The author declares no financial, personal, or institutional relationships that could have influenced the integrity or outcome of this research.

8. INFORMED CONSENT

Informed consent was sought and obtained from all participants prior to their involvement in the study.

9. ACKNOWLEDGEMENT

This research was financially supported by the Catholic University of Mbeya. The author gratefully acknowledges the University's contribution, which made the successful completion of this paper possible.

10. REFERENCES

1. Barbier, E. B. (2016). Is green growth relevant for poor economies? **Resource and Energy Economics*, 45*(3), 113–127. <https://doi.org/10.1016/j.reseneeco.2016.05.001>.
2. Belton, B., Win, M. T., Zhang, X., & Filipski, M. (2021). The rapid rise of agricultural mechanization in Myanmar. **Food Policy*, 102*, 102095. <https://doi.org/10.1016/j.foodpol.2021.102095>.
3. Caire, G., & Becker, G. S. (1967). **Human capital: A theoretical and empirical analysis with special reference to education**. **Revue Économique*, 18*(1), 19–24. <https://doi.org/10.2307/3499575>.
4. Chaffey, D., Ellis-Chadwick, F., Aghazadeh, H., & Khoshnevis, M. (2024). **Digital marketing: Strategy, implementation and practice** (6th ed.). In **Digital Marketing Technologies*, 9*(2), 21–37.
5. Chambers, R., & Gordon, R. C. (1991). **Sustainable rural livelihoods: Practical concepts for the 21st century**. Brighton Press.
6. Conway, G. (2022). Exploring sustainable livelihoods. In **Revolutionizing development: Reflections on the work of Robert Chambers** (Vol. 7, No. 2, pp. 41–63). Routledge. <https://doi.org/10.4324/9781003298632-10>.
7. Coulibaly, B., Sagoe, G., & Shixiang, L. (2021a). Towards poverty alleviation in developing countries: An empirical study of the impact of land tenure reforms in Kati, Mali. **PLOS ONE*, 16*(3), 56–69. <https://doi.org/10.1371/journal.pone.0246502>.
8. Coulibaly, B., Sagoe, G., & Shixiang, L. (2021b). Towards poverty alleviation in developing countries: An empirical study of the impact of land tenure reforms in Kati, Mali. **PLOS ONE*, 16*(3), 132–147. <https://doi.org/10.1371/journal.pone.0246502>.
9. Food and Agriculture Organization of the United Nations (FAO). (2014). **Youth and agriculture: Key challenges and concrete solutions** (Issue 17). FAO, CTA, & IFAD.
10. Food and Agriculture Organization of the United Nations (FAO). (2015). **National investment profile: Water for agriculture and energy**. FAO.

11. Fatoki, O. (2014). The financing options for new small and medium enterprises in South Africa. **Mediterranean Journal of Social Sciences*, 5*(20), 748. <https://doi.org/10.5901/mjss.2014.v5n20p748>
12. Fix, B. (2018). The trouble with human capital theory. **International Journal of Business and Management*, 4*(2), 1–12.
13. Kadochnikov, D. V. (2021). Rethinking poverty: About **Poor Economics** by Abhijit Banerjee and Esther Duflo. **Ekonomicheskaya Politika*, 13*(5), 144–155. <https://doi.org/10.18288/1994-5124-2021-5-144-155>.
14. Kakwani, N., & Pernia, E. M. (2000). What is pro-poor growth? **Asian Development Review*, 18*(1), 74–88. <https://doi.org/10.1142/s0116110500000014>.
15. Kemirembe, D., Katikiro, R. E., & Mbwana, M. (2024). The implication of standard units of weights and measures on smallholder farmers' maize productivity and welfare in Ruvuma Region, Tanzania. **Discover Agriculture*, 2*(1), 138–151. <https://doi.org/10.1007/s44279-024-00029-y>.
16. Kitole, F. A., Mkuna, E., & Sesabo, J. K. (2024a). Digitalization and agricultural transformation in developing countries: Empirical evidence from Tanzania agriculture sector. **Smart Agricultural Technology*, 9*(7), 89–101. <https://doi.org/10.1016/j.atech.2023.100379>.
17. Kusiluka, M. A. (2019). Value chain analysis of potato in the Southern Highlands of Tanzania: Constraints and solutions. **The International Journal of Business & Management*, 7*(1). <https://doi.org/10.24940/theijbm/2019/v7/i1/bm1901-005>.
18. Majebele, J. J., Yang, M., Mateen, M., & Tola, A. A. (2025). Mechanization and maize productivity in Tanzania's Ruvuma Region: A Python-based analysis on adoption and yield impact. **Agriculture*, 15*(13), 1412. <https://doi.org/10.3390/agriculture15131412>.
19. Marginson, S. (2019). Limitations of human capital theory. **Studies in Higher Education*, 44*(2), 287–301. <https://doi.org/10.1080/03075079.2017.1359823>.
20. Milheiras, S. G., Sallu, S. M., Loveridge, R., Nnyiti, P., Mwanga, L., Baraka, E., Lala, M., Moore, E., Shirima, D. D., Kioko, E. N., Marshall, A. R., & Pfeifer, M. (2022). Agroecological practices increase farmers' well-being in an agricultural growth corridor in Tanzania. **Agronomy for Sustainable Development*, 42*(4), 112–133. <https://doi.org/10.1007/s13593-022-00789-1>.
21. Mkonda, M. Y. (2021). Agricultural sustainability and food security in agroecological zones of Tanzania. In **Agriculture and Ecosystem Resilience in Sub Saharan Africa** (pp. 45–61). Springer. https://doi.org/10.1007/978-3-030-73245-5_9.
22. Mmasa, J. J. (2023). Partial intermediary value-chain coordination and its effects on productivity of sweet potato in Tanzania. **African Journal of Food, Agriculture, Nutrition and Development*, 23*(3), 172–198. <https://doi.org/10.18697/ajfand.118.22290>.
23. Ngozi, S., & Feleke, S. (2024). Enhancing youth's retention in potato farming enterprise through consortium agribusiness models in Tanzania. **Crop Science*, 64*(3), 1157–1168. <https://doi.org/10.1002/csc2.21055>.
24. Pasgaard, M., Kim, S. K., Dawson, N., & Fold, N. (2022). Agrarian modernization through “ideal agricultural subjects”: A lost cause for smallholders in Rwanda? **Journal of Political Ecology*, 29*(1), 98–122. <https://doi.org/10.2458/JPE.5012>.
25. Piketty, T. (2015). Putting distribution back at the center of economics: Reflections on **Capital in the twenty-first century**. **Journal of Economic Perspectives*, 29*(1), 67–88. <https://doi.org/10.1257/jep.29.1.67>.
26. SAGCOT. (2023). **Southern Agricultural Growth Corridor of Tanzania (SAGCOT) soybean sub-sector: Tanzania sustainable soybean initiative**. SAGCOT.
27. Sen, A. (1999). **Development as freedom**. Anchor Books.
28. Tauzie, M., Hermans, T. D. G., & Whitfield, S. (2024). The new achikumbe elite: Food systems transformation in the context of digital platforms use in agriculture in Malawi. **Agriculture and Human Values*, 41*(2), 78–87. <https://doi.org/10.1007/s10460-023-10494-8>.

29. Therond, O., Duru, M., Roger-Estrade, J., & Richard, G. (2017). A new analytical framework of farming system and agriculture model diversities: A review. **Agronomy for Sustainable Development*, 37*(3), 37–52. <https://doi.org/10.1007/s13593-017-0429-7>.
30. World Food Programme Tanzania. (2023). **Country annual report**. WFP.
31. Yami, M., Abioye, O., Sore, S. Z., Mugisho, A., & Abdoulaye, T. (2024). Factors influencing gender and youth integration in agricultural research and innovation in Africa. **CABI Agriculture and Bioscience*, 5*(1), 78–91. <https://doi.org/10.1186/s43170-024-00215-4>.

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How to cite/reference this article: Dr Castor Mfugale, Agricultural Transformation as a Driver of Youth Livelihoods: Evidence from BBT and AGCOT in Ruvuma Region, Tanzania, *Asian. Jour. Social. Scie. Mgmt. Tech.* 2025; 7(5): 158-169.