
# The Synergy between Rural Entrepreneurship and Agribusiness: A Pathway of Improved Livelihoods for Small Farmers in Zanzibar.

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## Article Info

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**Abstract**
The impact of rural entrepreneurship and agribusiness development on the livelihoods of small farmers is a topic of significant interest. Understanding the current trends and patterns of these sectors is crucial for designing effective policies and strategies aimed at improving the livelihoods of small scale farmers. Agriculture is the backbone of Zanzibar's rural economy, with a focus on crops such as cloves, seaweed, cinnamon, nutmeg, and black pepper. Rural entrepreneurs can innovate this sector by adding value through processing, packaging, and marketing. Currently, there are some challenges that small scale farmers in Zanzibar face. The challenges lies in the inadequate development of rural entrepreneurship in agribusiness, which limits its potential to serve as an effective strategy. This study seeks to investigate the synergy between rural entrepreneurship and agribusiness as a pathway of improving livelihoods for small farmers in Zanzibar. The study was conducted in different rural areas of Zanzibar where agribusiness activities that adopting rural entrepreneurship have been established. This study employed a deductive approach research design that involves hypothesis testing. Multiple regression analysis was carried out to examine the direct and indirect relationships between outcome variable with observed variables. The results showed the positive and significant relationship between access to finance, access to social capital and access to modern technology with livelihood prosperity. Either, the results suggested that access to finance, access to social capital and access to modern technology were partial mediated with government support initiatives. The study concluded that access to finance, social capital and modern technology significantly influence livelihood prosperity, while government support strategies act as a crucial pillar in optimizing these prosperities.

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**Keywords:** Agribusiness development, Rural entrepreneurship, Livelihood prosperity, Small farmers and Zanzibar Island.

## 1. Introduction

Rural areas play a vital role in the socioeconomic activities of nations, particularly in developing economies where agriculture forms the backbone of livelihoods for millions of people (Till, 2022; Sharma, 2022) [50, 45]. However, within these rural landscapes, small-scale farmers are central figures, often facing challenges related to limited resources, market access and adopting technological advancements (Kazungu *et al*, 2014) [17]. To overcome these challenges, there is a growing trend towards rural entrepreneurship activities engaged in agribusinesses. These economic activities are recognized as catalysts for rural development, poverty alleviation and better livelihood of farmer households (Alapján, 2016) [3].

Most of literatures defined rural entrepreneurship by its specific context, which includes limited access to resources, a dependence on agriculture, and the presence of strong community ties. Studies emphasize that rural entrepreneurs may focus on

industries that rely on natural resources, tourism, or local crafts (McManus & O'Brien, 2017; Kayastha & Maharjan, 2013; Ratten, 2014; Sulaiman & Ali, 2012) [28, 16, 47, 43]. Agribusiness are more comprehensively as the integration of business principles with agriculture, encompassing a broad range of industries related to agriculture, including finance, insurance, technology, and marketing. Essentially, agribusiness bridges the gap between agriculture as a traditional industry and modern business practices, enabling the efficient production, processing, and distribution of agricultural goods (Moehring & Schmitz, 2017; Huang & Rozelle, 2014; Farmani & Zakeri 2020; Liu & Li, 2015) [34, 39, 9, 23].

The impact of rural entrepreneurship and agribusiness development on the livelihoods of small farmers is a topic of significant interest and importance (Pan *et al*., 2024) [40]. Understanding the current trends and patterns of these sectors is crucial for designing effective policies and strategies aimed at reducing poverty level and improving the livelihoods of small scale farmers (Woodhill *et al*, 2022; Fasha & Minde, 2021) [54, 10]. Rural entrepreneurship and agribusiness development play pivotal roles in fostering sustainable economic growth in rural areas (Tabares, *et al*., 2022; Bhandari, 2024) [48, 6]. By promoting innovation and technology adoption in agricultural practices, the sectors contribute significantly to food security, create employment opportunities, and enhance income levels to the farmers (Singh *et al*, 2023; Tshikovhi *et al*., 2023) [53, 52]. The sectors are crucial as provide people with the means to meet their basic needs and improve their quality of life (Binder & Belz, 2015) [7]. However, that engagement requires individuals to develop various skills, including business management, marketing, and agricultural techniques. These skills not only enhance their ability to run successful ventures but also make them more employable in other sectors (Region *et al*., 2023) [44].

Rather than relying solely on traditional farming practices, the agribusiness initiatives promote the development of value-added products, agro-processing industries, and non-farm enterprises. Agribusiness development involves adding value to agricultural products through processing, packaging and marketing. This value addition not only increases the income potential for farmers but also contributes to economic growth by creating a more competitive and diversified agricultural sector (Melembe, 2021; Tripathi & Agarwal, 2016) [31, 52]. The diversification also reduces farmer's vulnerability to market fluctuations and agricultural risks (Manasoe, 2023) [27]. The developing agribusiness ventures often involves improving access to markets, both domestic and international. This can lead to increase income to farmers, that lifting them out of poverty (Magesa *et al*, 2014) [24]. However, agribusiness activities growth need infrastructure development such as roads, storage facilities, electricity, and marketplaces. This infrastructure not only supports the growth of venture but also benefits the entire community by enhancing overall economic development (Babu *et al*, 2020; Lakhan *et al*, 2021) [4, 20].

In recent years, there has been a noticeable shift in the dynamics of rural economies, driven by factors such as technological advancements, changing consumer preferences, and environmental concerns (Verma & Singh, 2014) [53]. These shifts have influenced the way agribusinesses operate, innovate and adapt to market demands. Exploring these trends and patterns provides valuable insights into the opportunities toward small farmers (Tengeh *et al*, 2023; Mujčinović *et al*., 2024; Lesian, 2022) [49, 35, 22]. The literatures revealed that, capacity building and skill enhancement are integral components of agribusiness development initiatives acquired from rural entrepreneurship skills (Mehmood *et al*., 2024; Babu *et al*., 2016; Kumari & Khanduri, 2019) [30, 4, 19]. Through training programs, workshops, and technical assistance, small-scale farmers may acquire the knowledge and skills necessary to adopt modern farming practices, utilize innovative technologies, and manage their enterprises more effectively (Rasanjali *et al*., 2021; Malila *et al*., 2023) [42, 26]. This not only improves productivity but also fosters entrepreneurial spirit and resilience among farmers (He, 2022). Another significant contribution of these initiatives is promoting financial inclusion and providing farmers with access to credit and financial services (Shima *et al*., 2023). By facilitating linkages with financial institutions, offering microfinance solutions, and promoting savings and investment habits, rural entrepreneurship initiatives empower farmers to make strategic investments in their farms, and expand their businesses (Birhanu, 2024) [8].

Rural entrepreneurship in Zanzibar is emerging as a key driver for socio-economic development, with various initiatives and opportunities helping to enhance livelihoods, particularly in agriculture, and small-scale industries. Rural entrepreneurship holds significant potential for the island's economic development, particularly in promoting sustainable livelihoods, alleviating poverty, and reducing urban-rural disparities (Majenga *et al*., 2024) [25]. Zanzibar's economy is largely dependent on agriculture, fishing, and tourism, while rural entrepreneurship can play a vital role in diversifying these sectors and creating new opportunities (Hafidh & Rashid, 2021) [11]. Agriculture is the backbone of Zanzibar's rural economy, with a focus on crops such as cloves, seaweed, cinnamon, nutmeg, and black pepper (Mohammed, & Saiti, 2017) [33]. Rural entrepreneurs can innovate this sector by adding value through processing, packaging, and marketing, as well as tapping into organic and fair-trade markets. Rural entrepreneurs can integrate agricultural activities with tourism, offering experiences like spice tours or farm-to-table restaurants, creating synergy between the two sectors (Rajeev *et al*., 2017) [41].

Agricultural sector is primary occupation in Zanzibar, with many people engaged in subsistence farming, fishing, and livestock. Farmers in Zanzibar are mostly small scale in nature who practice agribusiness by cultivate a variety of crops, which can contribute to resilience against market fluctuations or environmental challenges (Milne-Price, 2011) [32]. The agribusiness in Zanzibar is currently experiencing growth and transformation, driven by both government initiatives and international partnerships. The success of initiatives lead to keep agriculture sector remains a significant part of Zanzibar's economy, support the livelihoods of 70% of the population directly and indirectly and contributing about 24.9% to the GDP in 2023 (OCGC, 2024) [37]. The sector supports employment, food production, and foreign exchange earnings through the cultivation of various cash crops such as cloves, seaweed, fruits, and spices like cinnamon and nutmeg. Zanzibar Agricultural Sector Development Programme (ZASDP) phase two (2024/2025 – 2028/2029) that is central to modernizing agriculture over the next decade, focusing on sustainable production through integrating both the green and blue economies. This plan is

aimed at enhancing productivity and improving value chains for key sectors like horticulture, spice production, and livestock. The plan also need to promote agricultural innovation and mechanization to ensure food security and increase production, with special attention given to applying modern technologies like irrigation and hydroponics. This is due to the fact that opportunities are abundant, particularly in agro-processing, fruit farming, and mechanized agriculture, where modern techniques and partnerships with the private sector may encouraged (Ali & Mdendemi, 2020) [29].

Previous literatures observed some challenges that small scale farmers in Zanzibar face. The challenges lies in the inadequate development of rural entrepreneurship in agribusiness, which limits its potential to serve as an effective poverty eradication strategy for small-scale farmers in Zanzibar. There is a need to explore the role that entrepreneurship can play in transforming small-scale agriculture into a more viable and sustainable sector, which can drive economic growth, reduce poverty, and improve the livelihoods of rural populations. Therefore, this study seeks to investigate the synergy between rural entrepreneurship and agribusiness as a pathway of improving livelihoods for small farmers in Zanzibar

## 2. Literature Review

### 2.1 Rural Entrepreneurship

Rural entrepreneurship creates employment opportunities and income streams for people living in rural areas. This additional income can help lift households out of poverty by providing a stable source of revenue. Successful rural entrepreneurship can accumulate wealth over time, leading to improved living standards for entrepreneurs and their communities. This wealth can be reinvested in the local economy, further stimulating growth and poverty reduction (Kadzamira *et al*., 2024) [15].

Engaging in entrepreneurship often requires individuals to develop various skills, such as business management, marketing, and financial literacy. These skills not only benefit the entrepreneurs themselves but also contribute to the overall human capital development of the rural population. The successful entrepreneurial activities need investments in infrastructure, such as roads, telecommunications, and market facilities. Improved infrastructure can enhance connectivity, access to markets, and efficiency in rural areas, thereby supporting economic growth and poverty alleviation with betterment livelihood condition (Osei & Zhuang, 2020) [39]. Rural entrepreneurship can foster social cohesion and community development. Successful entrepreneurs may invest in social initiatives, such as education, healthcare, and environmental conservation, which can directly benefit marginalized populations and contribute to poverty reduction efforts (Adeyanju *et al*., 2023) [1].

Entrepreneurship often involves innovation and the adoption of new technologies. This can lead to productivity gains, cost reductions, and market expansion, all of which are conducive to economic development and poverty alleviation in rural areas (Naminsee *et al*, 2019). By promoting diverse economic activities, rural entrepreneurship reduces dependence on a single source of income, making communities more resilient to economic shocks and fluctuations.

Entrepreneurship involves understanding and managing risks, which is crucial in the agriculture sector due to weather dependency, fluctuating market prices, and disease outbreaks. Through entrepreneurship skill, entrepreneurs may have ability to pitch their business ideas, attract investors, and secure funding. This is essential in agribusiness, where significant capital is often needed for equipment, infrastructure, and expanding operations (Veni, 2024). Entrepreneurs in agribusiness are typically early adopters of technology, using tools such as drones for monitoring crops, data analytics for predicting market trends, and mobile applications for farmer education and market access. These technologies increase productivity, reduce costs, and make farming more profitable (Banerjee & Das, 2024).

### 2.3 Agribusiness Development

Agribusiness activities create employment opportunities and income sources, especially in rural areas where agriculture is a primary economic activity. This increased income directly contributes to better livelihood condition by lifting individuals and families above the poverty line (Akumbom *et al*, 2023). Developing agribusiness infrastructure such as markets, transportation networks, and storage facilities improves market access for small-scale farmers. This enables them to sell their produce at fair prices, reducing the vulnerability of rural communities to income shocks and poverty (Workineh *et al*, 2020). Agribusiness development often involves the adoption of modern agricultural technologies and practices. This leads to increased productivity, higher yields, and better quality crops, ultimately boosting farmers' incomes. Agribusiness development focuses on integrating various stages of the agricultural value chain, from production to processing, distribution, and marketing. This integration adds value to agricultural products, creates more employment opportunities, and increases incomes along the value chain, benefiting both producers and consumers (Orr, 2018).

By promoting diversification of agricultural activities and value-added products, agribusiness development reduces the dependence on a single crop or commodity. This enhances resilience against market fluctuations and climate-related risks, safeguarding livelihoods and reducing the likelihood of falling into poverty (Lencucha *et al*, 2020). Agribusiness development programs often include training and capacity-building initiatives for farmers. These programs improve skills, knowledge, and entrepreneurial capabilities, empowering individuals to effectively manage their agricultural enterprises and improve their economic status (Hariharan *et al*, 2023). Agribusiness development can have broader social impacts by promoting gender equality, empowering marginalized communities, and enhancing food security. These social benefits contribute to overall poverty reduction by addressing underlying factors that perpetuate poverty (Melembe, 2021). Sustainable agribusiness practices contribute to environmental conservation and resource management. Preserving natural resources and adopting eco-friendly farming methods not only ensure long-term viability but also support rural livelihoods, indirectly contributing to poverty reduction.

### 2.5 Conceptual Framework

On accessing the synergy between rural entrepreneurship and agribusiness as a pathway of improving livelihoods for small farmers in Zanzibar, the study proposed the framework which showed direct and indirect influence.

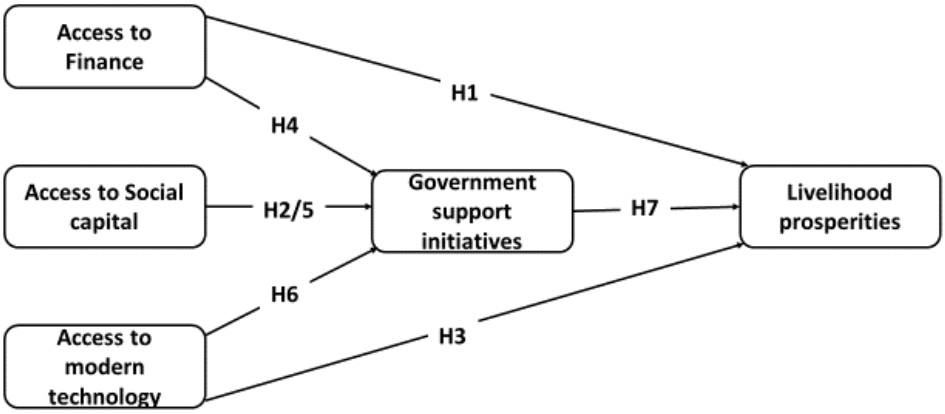


**Fig 1:** Conceptual framework

This framework used to develop the hypotheses that suggested direct and indirect influence among the variables. The study suggested the direct influence of positive and significance relationship between accesses to finance, access to social capital and access to modern technology (independent variables) with livelihood prosperities (dependent variable). The study also suggested the indirect influence of positive and significance relationship between accesses to finance, access to social capital and access to modern technology (independent variables) with livelihood prosperities (dependent variable) through government support initiatives (mediating variable) respectively.

## 3. Material and Methods

### 3.1 Study Area and Data Source

The study was conducted in different rural areas of Zanzibar where agribusiness activities by adopting rural entrepreneurship have been established. Some preliminary information concerning small scale farmers and agribusinesses initiatives have been collected from Ministry of Agriculture, Irrigation Natural Resource and Livestock together with Office of the Chief Government Statistician who are custodian of all statistics in Zanzibar. The units of analysis (respondents) were the small scale farmers who have entrepreneurship idea and engaged in agribusiness activities such as spice firms, fruit orchards, vegetable gardens, rice fields, livestock firms, cashew nut plantation and seaweed farming. This study employed a deductive approach research design that involves hypothesis development and then testing it through empirical observation. The study applied SPSS version 24 to test hypothesis using multiple regression analysis. This approach is applied by several scholars like Doane & Seward (2012), Stoner & Wankel (2009), Daniel & Chantal (2015), Richard & Andrew (2017), and Howell, (2019). Total of 267 farmers were selected by adopting convenience sampling methods through a closed ended questionnaire, 5 Likert scale. The study considered the proper ethical protocols including permission from authorities. While participants were made aware of the utilization of the data, privacy and confidentiality of their gained responses. The questionnaire contained demographic information of the farmers and their perceptions about entrepreneurship and agribusiness for livelihood perspective.

### 3.2 Regression Model

Multiple regression analysis was carried out to examine the direct relationships between outcome variable with observed variables. Same as examine the indirect relationship between outcome variables and observed variables through mediating variable. As shown in the econometric equations, the outcome variable is livelihood prosperities determined by explanatory variables that are access to finance, social capital access and access to modern technology (direct relationship) and access to finance, social capital access, access to modern technology and government support initiatives (indirect relationship). $LP=\alpha + \beta 1AF + \beta 2ASC + \beta 3AMT + \beta 4GS + \mu i$, where LP is livelihood prosperities, AF is access to finance, ASC is access to social capital, AMT is access modern technology, and AGS is government support initiatives and $\mu i$ is unobserved variables. While, $\alpha$, $\beta 1$, $\beta 2$, $\beta 3$, $\beta 4$ and $\beta 5$ are parameters to be estimated.

## 4. Results

### 4.1 Demographic Information

Demographic information of respondents showed that about 78% (n=208) respondents were male compared to female 22% (n=59). This results suggested by Zanzibar household survey, (2020), which showed high number of male participate in economic activities. About 56% (n=150) respondents were 36-65 years of age, followed by 37% (n=99) were 18-35 years of age. The results approved by Zanzibar labour force survey (2021). Majority of respondents 75% (n=200) were married as compared to unmarried respondents 18% (n=48). While significant number (n=203), 76% attained secondary education, (n=40), 15% end with primary school, while (n=21), 8% do not have any formal education. This means that majority of participants in farming have low level of formal education which results lack of alternative occupation. However, majority of respondents have attending in trainings and workshops concerning the entrepreneurship and business management skills (n=184), 69%. This means that the entrepreneurship knowledge they have, cover the formal education gap. Likewise, a majority of respondents (59% or n=157) were experienced with 2-10 years in farming activities that can be taken as an assets on their operation. While most of respondents households (66% or 176) have 1-7 members which allied with high dependent ratio and indicate poverty to the small scale farmers.

### 4.2 Regression Analysis Results

In the regression analysis, the livelihood prosperities was hypothesised to be a function of access to finance, access to social capital, and access to modern technology as directly positive and significance. While other variables signified

indirect relation mediated by government support initiatives. F-statistics were significant at 1% level while Adjusted $R^2$ values for estimated equation was 56%. These results suggested the goodness of fit to the model adopted in this study. The statistics suggested the proper observed variables that have been used to estimate the outcome variable.

**Table 1:** Direct relationships between outcome variable and observed variables

| Variable | B | Std. Error | t-value | p-value |
|---|---|---|---|---|
| Access to finance | 0.510 | 0.041 | 12.417 | 0.000*** |
| Access to social capital | 0.216 | 0.055 | 3.907 | 0.000*** |
| Access to modern technology | 0.215 | 0.051 | 4.201 | 0.000*** |
| R-Square | 0.570 | | | |
| Adjusted R-Square | 0.564 | | | |
| F-ratio | 101.072 | | | |
| F-probability | 0.000 | | | |

Dependent variable: livelihood prosperities; significance levels are denoted by two asterisks (***) at the 5% level.

On measuring the direct relationship between outcome variable and observed variables, the results showed that the coefficients of access to finance ($\beta = 0.510$, $p < 0.05$), access to social capital ($\beta = 0.216$, $p < 0.05$) and access to modern technology ($\beta = 0.215$, $p < 0.05$) are positive and statistically significant. This regression results indicated that the livelihood of small scale farmers may improved when the farmers have access to finance such as credits, savings and grants, having good relationship in the society and capacity of adopting modern technologies on their agricultural activities.

**Table 2:** Indirect relationships between outcome variable and observed variables through mediating variable

| Model | Variable | B | Std. Error | t-value | p-value |
|---|---|---|---|---|---|
| 1 | Access to finance | 0.510 | 0.041 | 12.417 | 0.000*** |
| | Access to Social capital | 0.216 | 0.055 | 3.907 | 0.000*** |
| | Access to modern technology | 0.215 | 0.051 | 4.201 | 0.000*** |
| 2. | Access to finance | 0.511 | 0.041 | 12.426 | 0.000*** |
| | Access to social capital | 0.197 | 0.059 | 3.323 | 0.001** |
| | Access to modern technology | 0.203 | 0.053 | 3.823 | 0.000*** |
| | Government supports initiatives | 0.052 | 0.059 | 0.886 | 0.377 |

Dependent variable: livelihood prosperities; significance levels are denoted by two asterisks (***) at the 5% level.

On measuring the indirect relationship between outcome variable and observed variables through mediating variable, the results showed that the coefficients of access to resources ($\beta = 0.510 < \beta = 0.511$, $p < 0.05$), access to social capital ($\beta = 0.216 > 0.197$, $p < 0.05$) and access to modern technology ($\beta = 0.215 > 0.203$, $p < 0.05$) were partial mediated hence the beta value changed but remained significant. This results indicated that government support initiatives can influence availability of finance to the farmers, promote networking, communication and cooperation between farmers and other economic entities and boosting the farmers to access and apply modern technological equipment on their agricultural activates. Those initiatives indicating a good environment to farmer for gaining better livelihood.

## 5. Discussion

In general, access to resources can help maintain the productivity for small scale farmers. Specifically, access to financial resources, such as credit and savings mechanisms can enable farmers to invest in their farms and cope with unforeseen expenditures. This financial inclusion can break the cycle of poverty by providing farmers with the means to invest in their agricultural activities and improve their overall well-being. Financial access allows farmers to purchase essential agricultural inputs, such as seeds, fertilizers, pesticides, and modern farming equipment. These inputs can enhance crop yield, leading to higher incomes and better food security for the farmers. Access to credit empowers farmers to diversify their activities. This diversification, which can include branching into animal husbandry, agro-processing, or non-agricultural enterprises, helps farmers build resilience to shocks and enhances their income streams. Social networks may provide a platform for farmers to share information, knowledge, and best practices. This access of information can help farmers learn about new farming techniques, market prices, weather forecasts that may improve productivity. Social networks facilitate peer support and collaboration among farmers, sharing their experiences, challenges, and successes, offering emotional support and practical advice. Social networks empower small-scale farmers by giving them a platform to voice their concerns, advocate for their rights, and mobilize for collective action. The primary benefits of accessing modern technology for small-scale farmers is the significant in boosting productivity. Using various technological innovations, farmers may able to achieve higher crop yields and more efficient use of their land. Biotechnological advances may led to the development of drought-resistant, pest-resistant, and high-yielding crop varieties. Technologies such as GPS, drones, and sensors may allow farmers to monitor soil health, moisture levels, and plant growth more effectively. Many farmers in rural areas are now have access of mobile phones and smartphones. Agricultural apps provide weather forecasts that enabling farmers to make decisions based on real-time for production. Through mobile banking, small-scale farmers may access loans and savings that enable to purchase inputs like seeds, fertilizers and machinery, which can directly improve their productivity. The government policies and regulations may needed in shaping market conditions for farmers. Policies that promote fair competition, regulate market practices, provide financial support, and invest in agricultural research and extension services contribute to a conducive environment for

farmers to thrive in the market. Small-scale farmers rely on access to local, regional, and international markets to sell their produce. Better market access can lead to higher income by providing farmers with more opportunities to sell their goods. Stable prices can provide farmers with predictable income, which is essential for planning and investment. Therefore, government can take necessary actions of improving and promoting market condition for the sake of small scale farmer livelihood. Government intervention is also essential in creating an enabling environment for small farmers to thrive. By addressing financial, infrastructural, educational, and regulatory challenges, governments can significantly enhance the livelihoods of small farmers, contributing to rural development and food security.

## Conclusion

This study underscores the transformative potential of fostering synergy between rural entrepreneurship and agribusiness as a means to enhance the livelihoods of small farmers in Zanzibar. The findings demonstrate that access to finance, social capital, and modern technology significantly influence livelihood prosperity, while government support strategies act as a crucial mediator in optimizing these relationships. By addressing these interconnected factors, policymakers and stakeholders can create an enabling ecosystem that not only promotes entrepreneurial ventures in agriculture but also ensures sustainable livelihood improvements for small farmers in Zanzibar.

## Declaration of competing interest

The authors have declared that they have no known competing either financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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## Data Availability Statement

The data used in this study were obtained from a questionnaire administered to selected number of small scale fishers from Zanzibar coastal area.

## Conflicts of Interest

The authors of this study have declared no conflicts of interest regarding the publication of this paper.

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