



Original Article

## Communities' Perceptions Toward Agricultural Projects in Kishapu District, Tanzania

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Perception towards development projects being introduced or implemented in an area tends to differ among community members, with some projects being perceived negatively and others positively. Understanding local communities' perceptions towards agricultural projects and factors that influence these perceptions is important because the perception of a project has a bearing on participation in the same. However, more often than not, local communities' perceptions do not receive as much attention as they deserve. This study surveyed the communities' perceptions toward agricultural projects in Kishapu District. Data were collected from 100 respondents through a questionnaire survey and from 6 participants through key informant interviews and focus group discussions. Descriptive statistics, binary logistic regression model and content analysis were employed for data analysis. Results show that most of the respondents had a positive perception toward agricultural projects because the projects contribute to community development. Drivers of positive community perception are involvement in previous agricultural projects, education, access to information and farm size. Therefore, community perception toward agricultural projects hinges on the extent to which similar projects have benefited the community in the past. Thus, to achieve positive community perceptions towards agricultural projects, there is a need for project implementers to ensure that projects improve people's living standards. Moreover, there is a need to ensure community members are well informed of the projects regardless of their literacy level and that innovative practices to benefit farmers regardless of their farm sizes are promoted.

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**INTRODUCTION**

Perception refers to the study of how sensory information is treated to perceptual skills (Atmadia and Sills, 2016). There are five senses, whereby all the five senses share a joint goal of perceiving sensory information from the external environment and processing the information into a perceptual skill, that is, each individual chooses, arranges, and assesses sensory information from the external environment to provide meaningful skills for himself or herself (Atmadia and Sills, 2016).

According to Kisauzi *et al.* (2012), perception and knowledge guide decision-making. Perception defines opinions thought by many people based on how things seem to them due to how their brains make them see and hear. Community perception of development projects has a bearing on their willingness to participate in projects. Perceptions of adopters are significant in persuading decision-making of adoption (Prager and Posthumus, 2010). Several studies indicate the importance of using community perception as a contribution to designing suitable management plans for sustainable development (Kleftoyanni *et al.*, 2010) and for the adoption of technologies promoted by projects (Prager and Posthumus, 2010). However, more often, local communities' perceptions do not receive as much consideration as they deserve; there is little attention to them (Guthiga, 2008). Community perception can be positive or negative; hence, they are important since they have consequences on the acceptance and sustainability of any development project. Njau and Mruma (2004) assert that the willingness of the community to participate in different projects is determined by the community's perception. Thus, it is important to understand community perception as it influences

their participation and the ultimate project performance.

Perception towards development projects being introduced or implemented in an area tends to differ among community members, with some projects being perceived negatively and others positively. According to Kinyashi (2006), though people have the same sense organs, they can have different perceptions about the same event. Examples of positively perceived development projects include the rural water project in Morogoro Rural District; according to Ngoja (2015), the majority of the community members perceived the project positively since they expected that the project was going to be a solution to the water shortage problem they had. Cases of negative community perception towards development projects are also evident. For example, a study by Miller *et al.* (2009) on a perception-influence model for the management of technology implementation in construction projects showed that the community had a negative perception towards the project. Also, a study by Lukasz (2018) on local residents' perceptions of a dam and reservoir project in the Teesta Basin indicated a negative perception of the dam project. The negative community perception towards development projects shown above had negative consequences on the citizens' participation in the projects. Community members are more likely to participate if they have a positive perception of the project in question. Accordingly, a negative perception of development projects may result in low participation.

Scholars have researched the importance of community perception toward their participation in development projects. However, there is inadequate attention to the drivers of community perceptions. Therefore, this study explores the

drivers of community perceptions of development projects, focusing on agricultural projects. Specifically, the study i) assessed the community perceptions of agricultural projects in Kishapu District, this will be assessed using different statements of agricultural projects versus community development, living standards of people, hunger and poverty, time resources, and ii) examined factors influencing community perceptions towards agricultural projects, this will include different variables to be tested such as sex, age, marital status, house member, educational level, information, farm size and involvement in previous projects. The findings of this study will be helpful to government and development stakeholders in understanding the relationship between community perception and the success of agricultural and development projects. Also, the study is in line with the Sustainable Development Goals (SDGs), particularly goal number 2, which emphasizes zero hunger through the promotion of sustainable agriculture by devoting attention to agricultural research and extension services. It is also in line with the Agricultural Sector Development Programme Phase II (ASDP II), particularly component 2, which emphasizes agricultural productivity and profitability through strengthening agricultural extension and training.

## RESEARCH METHODOLOGY

### Study Site

The study was conducted in the Kishapu District in the Shinyanga Region. Kishapu is one of the five districts in the Shinyanga Region located in North central Tanzania. Kishapu is a semi-arid area characterized by unimodal rains ranging between 600mm and 900mm per year. Kishapu District covers an area of 9226 km<sup>2</sup> and lies between longitudes 36°30'E and 33°30'E and latitudes 3°45'S and 5°00'S, and surface temperature ranges from 16 °C in June to 30 °C in October. The area lies at an altitude of 1000 - 1200 m above sea level. The highest temperature is experienced in October. The district is divided into 3 divisions, which are further divided into 29 wards with 117 villages. The main economic activities in the study area are agriculture and

livestock keeping; other economic activities are mining and sunflower oil processing. The major cash crops are cotton, sunflower, groundnuts, green gram, onions, pigeon peas and cowpeas. The major food crops grown are sweet potatoes, sorghum, and maize (KishapuDC, 2023).

### Sampling Procedure and Sample Size

The study involved purposive and simple random sampling techniques. The first stage of sampling involved the purposive selection of Kishapu District based on the reason that the main economic activities in the area are agriculture and livestock keeping with a growing town linking Simiyu and Shinyanga Regions, and that there is a number of agricultural projects with some succeeding and others failing to achieve the intended objectives. Also, the purposive selection of wards and villages from the district followed in the second stage of the sampling process. From each of the selected villages, a list of households that were typically involved in crop and/or livestock production as their main livelihood option was obtained from the Village Executive Officers (VEOs). The lists were used as a sampling frame. The third stage involved random selection (using random numbers obtained through Ms Excel) of households from the selected villages. This involved selection of 50 households from each village, making a sample size of 100 households. As Mbeyale (2009) and Akitanda (1994) assert, a sample of at least 30 units is sufficient, irrespective of the population for research in which statistical data analysis is to be done. The sample size can be increased above 30 units depending on the time and resources available (Akitanda, 1994).

### Data Collection and Analysis

Both quantitative and qualitative data were collected from primary and secondary sources of data. Primary data collection involved the use of a questionnaire survey, focus group discussion (FGD) and key informant interview (KII), while secondary data were collected from books, journal articles and the internet.

### Questionnaire Survey

A questionnaire that consisted of open and closed-ended questions was used in the survey. The questionnaire enabled respondents to express their experiences and perceptions regarding agricultural projects. After being pre-tested, questionnaires were administered to the heads of the selected households.

### Key Informant Interview

Key informants for the study included 1 Extension Officer, 1 Ward Executive Officer, 2 Village Executive Officers, and 2 Village Chairpersons. Using a checklist of questions, information on determinants of community perception of agricultural projects was collected.

### Focus Group Discussion

Two (2) focus group discussions (FGDs), each with 8 participants (having at least one representative from each sub-village), were conducted using an FGD guide. Selection criteria included involvement in crop/livestock production as the main production option. Moreover, the selection ensured an equal number inclusion of male and female farmers, youth and the elderly making sure that all diversity is captured. The FGDs focused on gathering information on determinants of community perception of agricultural projects.

### Data Analysis

After doing data entry and cleaning, the analysis was done as per specific objectives as follows:

For objective one (to assess the community perceptions of agricultural projects in Kishapu District), a 5-point Likert scale was used to measure community perceptions of agricultural projects (Apatha, 2011). This was done by a scale ranging from strongly agree, agree, undecided, disagree to strongly disagree to fit the respondent's feelings. A logical sequence of statements was used to determine the perception of the community on agricultural projects. Scoring involved assigning 5 to strongly agree, 4 to agree, 3 to undecided, 2 to disagree and 1 to strongly disagree. Total scores for community

perception were calculated and coded as positive (including those who scored 4 and 5), negative (including those who scored 1 and 2) or neutral (for those who scored 3).

For objective two (to examine factors influencing community perceptions towards agricultural projects), the binary logistic regression model was used to assess the strength of association between independent variables and the dependent variable (community perception toward agricultural projects). Below is the equation of the binary logistic regression model used.

$$\text{Logit}(\pi(x)) = \ln\left(\frac{p}{1-p}\right) = \frac{e^{\beta_0 + \sum_i^n \beta_i x_i + \varepsilon}}{1 + e^{\beta_0 + \sum_i^n \beta_i x_i + \varepsilon}}$$

Where:  $\pi(x) = \frac{p}{1-p}$  = odds, P = probability that community has positive perception, 1-p = probability that community has negative perception,  $\beta_0$  = Constant parameter,  $\beta_i$  = Parameter estimates.

$x_i$  = Set of independent variables (age, sex, education level, marital status, household size, access to information, performance of previous projects and farm size).

## RESULTS AND DISCUSSION

### Respondents' Characteristics

Respondents' characteristics included in this study were sex, age, marital status, education level, and the number of household members (Table 1). Findings in Table 1 show that most of the respondents (69%) were male compared to females (31%). Indicating that males are the ones who are the head of the household in most of the families in the study area. Most of the societies in the study area are the patrilineal society. Also, most agricultural field work is done by men as compared to females. A study done by Mhede (2012) emphasized that, with the exception of the female presence in sales, restaurants, and communication services, the core activities of production are undertaken by men.

As summarized in Table 1, the popular number (61%) of respondents falls into the group of 31 – 50, followed by the group of over 50 years old,

which makes up 20% of the whole respondents, and least of all is those with 18 – 30 (19%). The overall average age for the respondents was 39.4 years. Referring to *Table 1*, the findings show that most of the available houses (58%) in the study area are occupied by married people. On the other hand, a few houses of about 11% are occupied by a widow/widower.

Results show further that only 22% of respondents did not attend formal education. The remaining 78% of respondents ended with a

primary level of education. None of them attended tertiary education to gain agricultural skills but relied largely on apprenticeship skills acquired through learning by doing. Also, Chanjarika (2013) suggested that most entrants into the agricultural business are either “spin-offs” or former apprentices of current projects. Also, in most of the respondents (67%), the number of people living in their house ranged from 6 to 10. Followed by families with 1 to 5 people (27%), and the least percent (6%) were families with 10 people and above.

**Table 1: Characteristics of respondents in Kishapu District (n=100)**

Category	Frequency (F)	Percentage (%)
Sex	Male	69
	Female	31
	Total	100
Age (years)	18 – 30	19
	31 – 50	61
	Above 50	20
	Total	100
Marital status	Single	14
	Married	58
	Divorced/separated	17
	Widow/ Widower	11
	Total	100
Education level	No formal education	22
	Primary education	78
	Total	100
Household member	1-5	27
	6-10	67
	Above 10	6
	Total	100

**Community Perceptions Toward Agricultural Projects in Kishapu District**

Study findings (*Table 2*) show that agricultural projects in the study area have three general areas

of advantages: agricultural projects improve the living standards of the people, are solutions to poverty and hunger, and result in community development. These are discussed as follows:

**Table 2: Villagers opinions towards agricultural projects**

Statement	SA (%)	A (%)	N (%)	D (%)	SD (%)
Agricultural projects are beneficial to community development	45	27	28	0	0
Agricultural projects improve people’s living standards	42	30	8	18	2
Had it not been the presence of agricultural projects in this area, I would be in a lower state of living	23	22	34	4	17
Agricultural projects are solutions to hunger and poverty in my area	37	32	25	6	0
Agricultural projects are not a waste of time	52	24	18	6	0
Agricultural projects result in community development	45	33	22	0	0

*Key: SA = Strongly agree, A = Agree, N = Neutral, D = Disagree, SD = Strongly disagree*

## The Role of Agricultural Projects on Households' Living Standards

About three-quarters (72%) of the respondents were of the opinion that agricultural projects improve households' living standards (Table 2). As it is to most communities in African countries that depend on agriculture as their mainstay (Haggblade, 2013), the community members in the study area depend on agriculture as their main source of income. Therefore, projects which support agricultural activities work towards improving their main livelihood option. The findings are comparable to Fuglie (2008), who found that most Africans hinge on agriculture as their main source of earnings. Farmers in Africa tend to sell their crops and use their earnings to buy assets, pay school fees for their children, and cover other living costs (Jayne *et al.*, 2017; Haggblade, 2013). Some of the respondents argue that they started engaging in agricultural activities after the coming of agricultural projects in their area.

Even from direct observation, some of the families were observed selling some of the harvested crops (sunflowers), as it happened that a child was asking for the school uniform and exercise book, and their parents responded to him to wait after they received their cash from sunflowers buyers.

The fact that nearly half of the respondents (45%) commented that they would be in a lower state of living had it not been for the advent of agricultural projects in their area provides a further clue that the projects were considered important. According to Andinet *et al.* (2017), agricultural activities play an important role in improving the living standards of local communities in African countries; that is, agriculture acts as a backbone for the livelihoods of local communities. The focus group discussion participants indicated that through agricultural activities and with the support of agricultural projects, farmers are able to buy home furnishings, build their own houses, and send children to school. Being able to meet those needs from projects supported by agricultural activities shows that people's living

standards have improved, and this is attributable to their involvement in agricultural projects. As it was said by one of the farmers, *"Through agriculture, I did pay school fees for my two children and bought a land."*

## The Contribution of Agricultural Projects to Reduction of Hunger and Poverty

More than half (69%) of the respondents saw agricultural projects as a potential solution to hunger and poverty in their community (Table 2). This could be the reason for them to have a positive attitude towards agricultural projects and their active participation in project implementation. Findings from the focus group discussion show that, through agricultural projects, farmers receive agricultural inputs such as fertilizers, good seeds, and pesticides freely or through cost sharing and training on improved agronomic practices. As a result, as compared to the period when there were no such projects, higher crop yields have been realized, and this caters for household food and income needs. One key informant remarked that:

*"Last season, after selling my harvest, I was able to open a small shop (home use commodities) which serves as an alternative source of income during the dry season."*

Study findings further show that agricultural projects have a positive effect on employment creation in the areas in which they operate. On this, the FGD participants acknowledged those who bring agricultural projects into their area, mentioning that the projects employ their youth. Overall, the findings are consistent with Haggblade (2013), who contends that increasing investments in the farm economy can deliver high-impact development returns such as increasing rural incomes, boosting food security, making cheap and more nutritious food available to Africa's bustling cities and protecting the environment through innovations such as climate-smart agriculture. Several projects for poverty alleviation in Tanzania invest in agricultural activities since it is the main livelihood activity in the country (Andinet *et al.*, 2017). Agro-industrialization is a formidable strategy to

maintain the recent growth momentum, reduce poverty and inequality, create decent jobs, and improve the quality of life and well-being of Africans (Andinet *et al.*, 2017).

### ***Agricultural Projects and Community Development***

The majority of the respondents (78%) subscribed to the opinion that participating in agricultural projects is positively correlated with community development. In the same vein, 76% of the respondents saw participation in agricultural projects as a prudent use of a person's time as opposed to a waste of time (Table 2). The focus group discussion participants interpreted community development as when all that is done by an individual farmer contributes to the welfare of other community members, particularly in terms of their social services. Building on this interpretation, and in view of the findings reported above, it is clear that a community member participating in agricultural projects is likely to increase their harvest and sell the surplus for income gain. In this process, the government gains taxes, which in turn support her effort to provide services to the whole community. The focus group discussion participants indicated that agricultural projects create job opportunities and improve individual development; they lead to overall community development. Community members employed as a result of the agricultural projects pay taxes as well as support their households to access services, thereby contributing to community development in general. On this, a key informant said:

*“These agricultural projects create job opportunities for families in rural and urban areas”.*

The importance of agricultural projects lies in their support of agriculture, whose role in community development cannot be overemphasized. Allen and Heinrigs (2016) and Cockx *et al.* (2019) indicated that agriculture has become a priority in the development agenda; the agenda strives to end hunger, achieve food security, improve nutrition, and promote sustainable agriculture. The agenda seeks to

double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous people, family farmers and pastoralists, as well as ensure sustainable food production systems (Jayne *et al.*, 2017). Across Africa, agriculture is the predominant sector in the economies of most countries, accounting for between 30 to 40 percent of the gross domestic product, and the sector is a leading source of jobs for over two-thirds of Africa's population (Allen and Heinrigs, 2016).

### ***Overall Community Perception Towards Agricultural Projects***

Study findings show that the majority of the respondents (78.7%) had a positive perception towards agriculture, whereas about a quarter (17.5%) were neutral. Only 3.8% had a negative perception of agricultural projects. Lukasz (2018) asserts that community perception towards projects can be classified into three main groups: positive, negative, and neutral perceptions.

The positive perception towards agricultural projects can be explained by respondents' high scores with regard to the effect of agricultural projects on households' living standards, the undoubted contribution of agricultural projects to hunger and poverty, and the attribution of community development to agricultural projects.

As for the neutral position, which corresponds with 17.5% of the respondents, the explanation could revolve around the fact that there are farmers who are engaged in other activities in addition to agriculture and, therefore could be realizing better earnings from the non-farm activities. Such community members are farmers who are engaged in income-generating activities such as running a shop, carpentry, masonry, food vending, and tailoring. Since they do not depend fully on agriculture, they see themselves as able to earn a living through other means. The group with negative perception (3.8%) could be those who had not participated in any agricultural project and therefore could not imagine any value associated with the existence of the projects. On this, one key informant commented:

*“Agricultural projects are beneficial for sure; however, there are cases (some projects) where they bring nothing but wasting farmers’ time for the benefit of those initiating the projects. As a result, some farmers refrain from participating in any agricultural project”.*

### Factors Influencing Community Perceptions Towards Agricultural Projects

The binary logistic regression model was used to determine the influence of the community’s perceptions toward agricultural projects.

Table 3 summarises the factors influencing community perceptions towards agricultural projects. The results show that four explanatory variables, namely education level, information about the projects, farm size and involvement in previous projects, are significant at a 5% significant level ( $\alpha$ ) in influencing the community perceptions. The remaining explanatory variables, namely sex, age, marital status, and number of household members, did not have statistical significance and, therefore, are considered as having negligible impact on shaping community perceptions towards agricultural projects.

**Table 3: Binary logistic regression results for factors influencing community perceptions towards agricultural projects**

Variables	B	Std. Error	Wald	df	Sig.
Sex (1)	2.291	.038	1.450	1	0.130
Age	4.571	.034	1.223	1	0.101
Marital status	7.224	.029	1.394	3	0.126
House member	0.692	.036	0.564	1	0.406
Education level	0.835	.053	6.432	1	0.020*
Information	0.906	.098	18.562	1	0.001*
Farm size	0.803	.074	23.469	1	0.000*
Involvement in the previous project	1.089	.077	17.245	1	0.002*

\*=Statistically significant at  $\alpha = 0.05$

The findings show that the education level of a person influences significantly ( $0.02 < 0.05$ ) and positively (at a rate of 0.835) their perception toward agricultural projects. This means that the more educated the person is, the more likely they are to have a positive perception toward agricultural projects. Educated people are more likely to have better access to agriculture-related information, such as agricultural projects, markets, production technologies, and credits than the less educated or those with formal education. The educated ones are more accessible to information presented in the form of print or media, as well as those shared through seeing what others are doing; that is, they are more exposed. Since education increases access to information about agricultural projects and the interventions they promote, it is logical that those with higher education fall into the positive perception category because they have better awareness. According to Lukasz (2018),

awareness is positively correlated with perception. He also found that the level of education had the strongest impact on the sense of security; illiterate respondents felt least secure; the higher their level of education, the safer people felt.

The findings show further that the amount of information an individual receives has a significant ( $0.001 < 0.05$ ) positive (at the rate of 0.906) influence on people’s perceptions toward agricultural projects (Table 4). This means that for every additional information a person gets about the aims of the project, the more positive the perception becomes. The findings imply that for a person to have a positive attitude toward a project, they must receive information related to the project. Most people in rural areas do not involve themselves in the projects implemented in their areas due to a lack of enough information about the project and the approach used by the



implementers (Andinet *et al.*, 2017). The findings are also consistent with those of Kisauzi *et al.* (2012) and Andinet *et al.* (2017) who indicated that, for the community to have a positive attitude toward the project and participate effectively, they should be informed about the project from the first stage; this will also ensure the sustainability of the project.

As for farm size, the findings show that it significantly ( $0.000 < 0.05$ ) influences people's perceptions toward agricultural projects in a positive way (at the rate of 0.803) (Table 4). The more the farm size owned, the more the likelihood of the owner to have a positive perception toward agricultural projects. This could be due to the reason that the project is looked at as an opportunity to cause an impact on a large piece of land in terms of reducing the cost of production (for projects that offer farm inputs) and increasing crop yields upon adopting agricultural practices recommended by the project (Allen and Heinrigs, 2016). That is, a farmer with a large farm will oftentimes be figuring out how the whole farm can be made useful rather than leaving some portion lying idle. Therefore, agricultural projects are seen as an opportunity for such farmers to make their land resources productive.

Involvement in previous projects was also seen to influence people's perceptions toward agricultural projects positively (at the rate of 1.089) and significantly ( $0.002 < 0.05$ ). This means that, as a person's experience in projects increases, the chances of the person to have a positive perception toward agricultural projects increase. The reason could be the increase in trust in these projects, which is cultivated as a person continues to implement similar projects. The findings are supported by Miller (2009), who asserts that the more the person becomes a veteran in the certain project, the more he/she trusts and has positive motives toward repeated projects. The success of the previous project activates and convince an individual to participate in the next project of a similar kind (Kleftoyanni *et al.*, 2010; Allen and Heinrigs, 2016).

## CONCLUSIONS AND RECOMMENDATIONS

In the study area, community members had a positive perception toward agricultural projects because the projects improve their living standards, reduce hunger and poverty, and ultimately contribute to community development. Therefore, community perception toward agricultural projects hinges on the extent to which similar projects have benefited the community in the past.

Drivers of positive community perception toward agricultural projects are involvement in previous agricultural projects, education, access to information and farm size. This implies that in order to achieve positive community perceptions towards agricultural projects, there is a need for project implementers to ensure that projects improve people's living standards, reduce hunger and poverty, and contribute to community development. Moreover, there is a need for projects to ensure community members are well informed of the projects regardless of their literacy level and that innovative practices to benefit farmers regardless of their farm sizes are promoted.

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