



CONTRIBUTION OF AHEZA FORTIFIED FOOD PROJECT ON SOCIO ECONOMIC WELFARE OF BENEFICIARIES IN GAKENKE DISTRICT, RWANDA

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Abstract

The study assessed the contribution of Aheza Fortified food Project factors on socio economic welfare of beneficiaries. The specific objectives included: to investigate the contribution of capacity building on knowledge and skills acquisition, to determine the contribution of agricultural support on food security among project beneficiaries, to examine the contribution of financial income of Aheza fortified food project on access to basic needs among beneficiaries and to examine the contribution of fortified flour of Aheza fortified food project on health conditions of the beneficiaries. The study adopted descriptive and correlational research designs with 193 sample size consisting of staff, vulnerable women and farmers. Primary data was collected using questionnaires and interview guide. Descriptive and inferential statistical findings indicated positive effect of capacity building, agricultural support, financial income and fortified flour on social needs. The study concluded that the project contributed positively to the socioeconomic welfare of beneficiaries. The study recommended project managers dealing with food security projects to build capacity through conducting relevant, quality and regular trainings. Additionally, donors should enhance agricultural support through provision of inputs and supporting agricultural trainings. Lastly managers should also enhance skills and knowledge among beneficiaries to achieve sustainability of food security projects.

Keywords: Aheza Fortified Food, Socioeconomic Welfare, Project Beneficiaries, Capacity Building, Financial Income, Agricultural Support



INTRODUCTION

Rural population still accounts for a greater percentage of the world's population. By 2016, the world rural population accounted for 45% according to the UN socio economic statistics while urban population accounted for 55%. However, focusing on the continents, Africa still has the biggest population living in rural areas. According to UN 2016 report, Africa's rural population accounted for 57% of the total population while urban population was 43%. The state of development and poverty level is of a critical concern all over the world and more particularly in Sub Saharan Africa where the two has proved to be a challenge over the years. The role of NGOs in poverty eradication and rural development in sub Saharan countries cannot therefore be overlooked.

Climate heavily affects agricultural activities and production whose main objective is to improve food security hence alleviate hunger and income improvement hence poverty reduction. Most rural households in Sub Saharan African Countries heavily depend on agriculture as a source of livelihood and this is the reason why most of the projects in sub Saharan Africa are channeled towards agricultural production in order to uplift the living standards rural households. (Mosohlo, 2016).

In 2015 poverty level in the world stood at 10% while in 2018 it stood at 8% an indication that the poverty level keeps on falling. Though poverty rate in Africa is falling, it's still very high and accounts for 70% of the world's poor according to WB report (2018) and it was projected that the figure could go to over 90% by 2030.

United Nations wider view of poverty is not far from the negative socioeconomic welfare. According to United Nations, poverty goes beyond just lack of income and productive resources to ensure sustainable livelihood. In addition, poverty encompasses malnutrition and hunger, lack of access to education, health, and good sanitation and other basic services, social discrimination and exclusion and inability to participate in decision making. All these poverty components are the very components of socioeconomic welfare. Therefore, poverty can be regarded as the father of indicators of socioeconomic welfare. Poverty is moreover recognized as an integral agenda that should be given a lot of concern for the realization of 2030 Sustainable Development Goals hence attainment of universal sustainable development. (United Nations, 2018)

Non-Governmental Organizations NGOs have continued to dominate sub-Saharan countries for years in various sectors offering financial assistance towards conducting projects that aims to uplift development in sub Saharan Africa. These Non-Governmental Organizations assist various sectors ranging from social, economic, production, and humanitarian among others. Non-Governmental Organizations and donor-funded programs supports agricultural

development by offering various services such as promotion of agricultural technology, provision of agricultural inputs, training or capacity development and market sourcing (World Bank, 2011).

The main donors are development countries and international banking institutions. According to OECD report (2018), most of the aid in Africa in 2016 came from USA, followed by EU, IDA, United Kingdom and Germany. Japan and France were also in the list of major donors in 2016. Most of the donations from developed countries and international institutions are channeled in Africa yet the pace of development in terms of poverty eradication is very slow in Africa. NGOs have been preferred by the donors to channel their aids for three reasons. First, they have been part of the donors' efforts to support their relief and emergency activities and therefore are skilled and experienced. Secondly, the poor performance of official donor programs in reaching the poor also made the donors to prefer NGOs and lastly it's the best way to avoid corrupt government officials in the targeted countries who may interfere with the impact of the aid to the target group. (ODI, 1995).

In East Africa, NGOs have played a great role in uplifting the lives of the poor both in the rural and urban areas. NGOs have supported various sectors in East African Countries ranging from education, health, agriculture, humanitarian among others. However according to Gibson (2013), the impact of NGOs in eradicating poverty in Kenya though positive has been quite slow. East African countries have experienced a slow pace of poverty eradication characterized by slow improvement rate in socio economic indicators such as health, sanitation, and hunger reduction among others. Kenya has recorded an increase in donor support overtime since early 90s in various sectors. However, the 2006 Kenya Integrated Household and Budget Survey, (KIHBS) found that 46% of the total Kenyan population was absolutely poor, i.e. below the poverty line, whereas 49% of the rural population was absolutely poor (Kenya National Bureau of Statistics, 2007).

Rwanda has recorded an incredible reduction in poverty rate overtime. Agriculture has played a key role in this journey since there has been an increase in agricultural production overtime through public and private support. The government has been on the forefront in supporting the agriculture sector and working close with the various stakeholders including the farmers, middle men and the NGOs in achieving this goal. Efforts towards improving agricultural production have been embraced by the government and the private sector and the NGOs. According to trend of EICV3 and EICV4, the poverty rate in Rwanda fell from 46% in 2010 to 39.1% in 2013 (NISR, 2016).

NGOs have implemented various projects in the agriculture sector in rural areas in a bid to uplift the lives of the rural people and eradicate poverty, one such project is the AHEZA fortified food project which this study focuses on. This project is implemented by The Ihangane

Project an International NGO and is geared towards supporting the HIV exposed children and mothers and other vulnerable people through health centers that serve Ruli District Hospital catchment area. They produce porridge flour (CSB+) which is distributed to the families relieving them of malnutrition and some bought by the NGO for free distribution. Therefore, this study seeks to assess the contribution of this project to the socio economic welfare of beneficiaries.

The contribution of AHEZA fortified Food Project to the beneficiaries was in form of capacity offered to the Corn and Soya farmers in terms of regularity and quality of trainings, agricultural support to the farmers in terms of provision of farm inputs, marketing and farming methods, quality and quantity of Corn Soya Blend Flour provided to vulnerable women and improved financial income of the farmers. These contributions form the key independent variables for this study. Food security projects aims to support agriculture through empowering farmers who in turn produce adequate food for consumption.

Objectives of the Study

This research was guided by the following four specific objectives drawn from the above general objective.

- i) To assess the contribution of capacity building on knowledge and skills acquisition among beneficiaries.
- ii) To determine the contribution of agricultural support on food security among beneficiaries.
- iii) To examine the contribution of financial income of Aheza Fortified Food Project on access to basic needs among beneficiaries.
- iv) To examine the contribution of fortified food of Aheza Fortified Food Project on health conditions of beneficiaries.

LITERATURE REVIEW

Concept of Capacity building

Capacity building is considered indispensable to achieve SDGs. More specifically, socioeconomic welfare factors captured in the SDGs like health, education, poverty and sanitation heavily depends on capacity building. The challenges facing the successful attainment of SDGs in countries like Pakistan revolves around among other factors, poor capacity building (SDPI Working Paper, 2019). Developing countries face technical support challenges and this drags the achievement of SDGs in these countries. Sustainable development and successful socioeconomic welfare is one and the same thing according to Beesley et al (2010).

Sustainable development demands strengthening the management and governance of an organization so as to be able to achieve its set goals and mission. For this to happen, capacity building acquisition is of importance. Through capacity building, a pool of skilled labor is made available in all the sectors of the economy, people participates in income generating activities hence are able to afford the basic social needs.

Agricultural Support and socioeconomic welfare

Agricultural support involves efforts both human, financial and technological that aim at improving agricultural output. Agricultural support can be in form of provision of fertilizers, farmers training on modern agricultural methods better market prices for farm produce to enhance the livelihood of farmers, (Lambert and Patrick, 2019). Agriculture plays an important role in uplifting the livelihood of people particularly developing countries where it is considered as the backbone of most economies.

For development to be achieved in developing countries, the agriculture sector has to be given a lot of attention. Agriculture contributes to welfare development through encouraging food security hence alleviate hunger, increases income of the farmers hence acting as a source of livelihood, provides raw materials for industrial products and boost countries exports hence contributing to foreign exchange earnings. In a research paper by Food and Agriculture organization of the United Nations, (FAO,2007), agriculture is recognized to perform indirect roles in terms of alleviating poverty, reducing migration, food security, creating buffer in times of economic crisis and as a national cultural, identity.

NGOs have continuously supported the agriculture sector in developing countries in order to alleviate hunger and promote food security in a bid to achieve SDG goals of alleviating hunger. They have done this through conducting various projects which aims to promote agricultural production in developing countries. This is made possible through provision of agricultural inputs such as fertilizers, better seeds and training on modern farming methods to enhance capacity building. These efforts aim to promote agricultural production hence alleviates poverty since food products are made available and income generation is promoted through selling of farm output. Rwanda has never been left behind in terms of receiving NGOs support in the agriculture sector.

Income and socioeconomic welfare

Income is one of the measures of socioeconomic welfare. Income represents the value or the benefit for the service rendered. In agriculture sector, farmers derive their incomes from the sale of agricultural output. With income, farmers are able to afford basic commodities such

as food, education, health among others thereby improving their social wellbeing (Lambert& Patrick, 2019). Availability of income reduces poverty and hunger among people since they are able to afford food and other basic commodities.

NGOs funded projects in the agriculture sector aims at expanding agricultural production hence increased income to farmers. This is because the increased output is able to cater for private consumption and sale hence earning income. The income earned by farmers improves their social wellbeing. This is the bottom line objective for NGOs commitment to provide for quality inputs to farmers so that they are able to produce in abundance for poverty elimination.

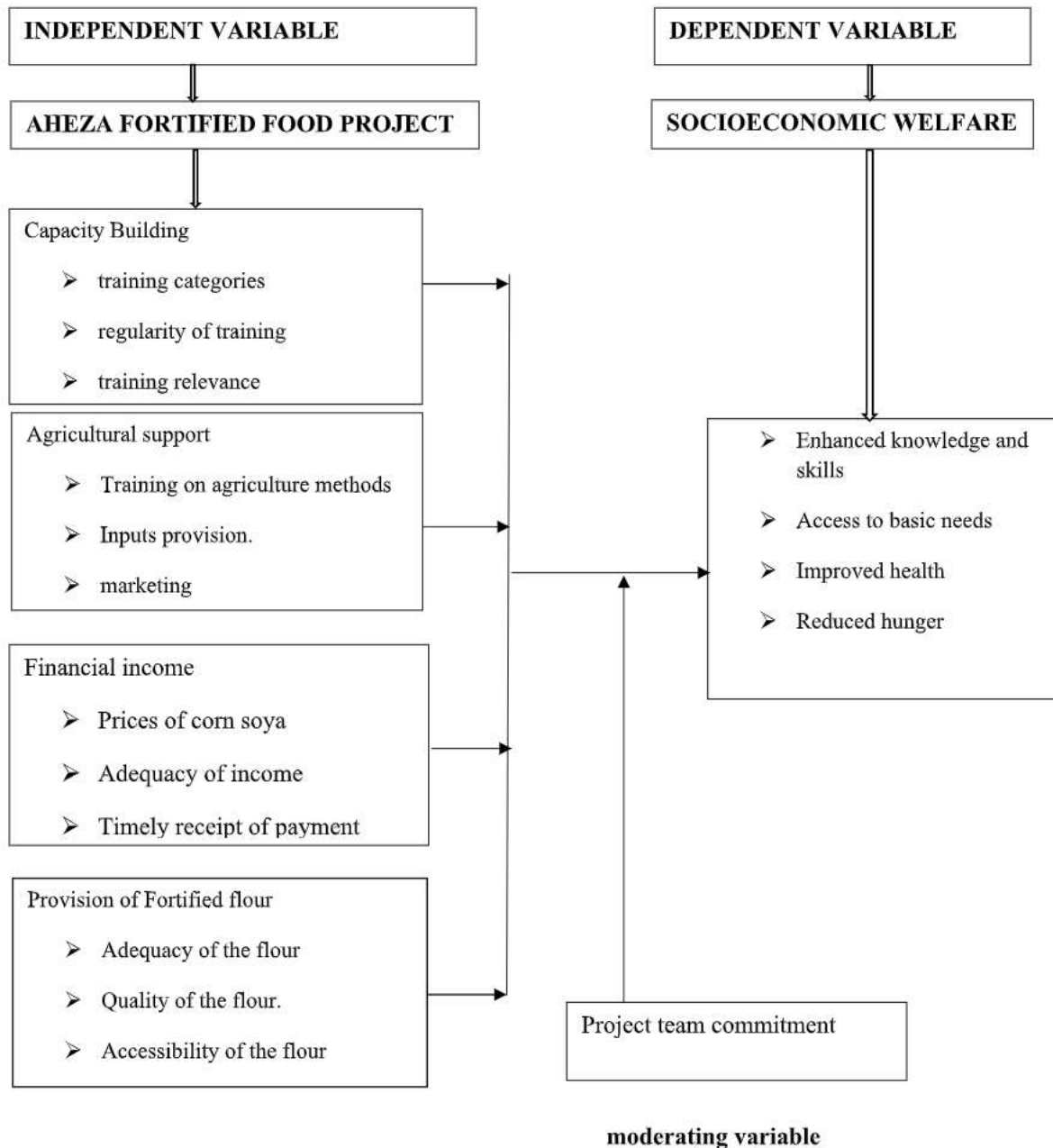
Fortified food and socioeconomic welfare

Fortified food refers to food that has been supplemented with some foreign nutrients with the aim of improving nutrition and health benefits (FAO, 2002). Food is one of the fundamental components of social well-being and basic human need and lack of food signifies poor state of individual's well-being. Nutritional status refers to measure of health condition of an individual of which food intake and nutrients utilization is key. According to World Health Organization, health is diverse and not only refers to absence of disease but rather it encompasses a state of complete mental and physical wellbeing of an individual which translates to productivity.

Good nutritional status can only be achieved sustainably in a family or community if they are food secure. Food security refers to accessibility of healthy food which improves quality of life by individuals at all times (FAO/WHO, 2002) Food security encompasses three dimensions namely adequate availability of food supplies, sufficient food accessibility assurance to all individuals and proper utilization of food to provide balanced diet.

Healthy workforce is a precondition of nation's development since it translates to higher productivity and output growth hence better economic and social performance. A number of NGOs in African countries have focused on poverty alleviation through supporting food security projects and programs in line with the SDGs goal of poverty and hunger alleviation. This is made possible by promoting provision of sufficient and healthy food for the vulnerable in the community through supporting agriculture and manufacturing. Rwanda is not left behind as this project of Aheza Fortified food project provides corn soya blend flour to the vulnerable women and children which is highly nutritious and aims to improve their health status.

Figure 1: Conceptual framework



RESEARCH METHODOLOGY

Research design

Orodho (2009) defines research design as the complete method adopted by an individual to integrate the study variables in a coherent manner to aid in finding a solution to the research problem. This study aimed to investigate the contribution of AFFP on socio economic welfare of beneficiaries within the period of its implementation. Descriptive cross-sectional research design was adopted in this study. Descriptive cross-sectional research design aims at

describing the traits of a population or study phenomenon as it is within a given period of time. It therefore focuses on answering the 'what' questions and are most suitable in measuring association between variables (Lichterman et al, 2014). This study seeks to describe the role of Aheza Fortified Food Project on socio economic welfare of beneficiaries. In addition to descriptive design, this study also adopted correlational design. According to Kothari (2011) correlational design studies aims to investigate the association or relationship between two variables whether it's positive or negative or no relationship. The study further aimed to determine the relationship between capacity building and agricultural support and socioeconomic welfare. The study also aims to assess the quality of Corn Soya Blend Flour produced by Aheza Fortified food Project and assess the contribution of the project on farmers' income.

Population and Sample

This study targeted the staff of AFFP and direct beneficiaries since they are the ones who can indeed attest whether they have benefited from the project or not which is the objective of interest in conducting this research. The total population of the study was 370; out of which 150 were members from families of HIV+ exposed women, 200 farmers and 20 staff. A Sample size of 193 respondents was drawn from the population using Yamane's formula.

Table 1: Sample Frame

AFFP Direct Beneficiary	number
Vulnerable women	74
Farmers	99
Staff	20
Total	193

Sampling techniques are construct procedures of selecting the sample size from the population (Kothari, 2011). Sampling techniques can either be probabilistic or non-probabilistic. Probabilistic sampling techniques are techniques where all respondents have equal chance of forming the sample size unlike the non- probabilistic sampling techniques where a respondent does not have equal chance of being sample size member. In this study, purposive, stratified and random sampling techniques were adopted.

Purposive sampling is a selective sampling technique that involves choosing an object that best suits the study purpose to include as respondent for data collection. Staff were chosen

purposively since they are directly involved in the project implementation hence have information on the project. The researcher included all the 20 staff in the sample.

Stratified sampling involves a situation where people or objects with similar characteristics are grouped together to form a stratum. Therefore, respondents within the stratum have similar characteristics while the characteristics differ from one stratum to another. In this study the respondents were divided into three strata constituting of vulnerable women, farmers and staff.

Simple random sampling is a probability sampling technique where the researcher selects respondents randomly without bias. In this study, the researcher applied simple random sampling in choosing respondents particularly vulnerable women and farmers while all staff will be included in the sample size.

Data type and sources

Primary data is data collected for the first time from the population or sample. Primary data is always reliable and accurate since it is collected from the original source and therefore free from distortion by other users. Primary data is also comprehensive since the respondent has the room to give his or her views mostly when using interviews or open ended questionnaires as data collection tools. The main instruments that are commonly used in primary data collection include questionnaires, interview guides, focused group discussions, observations among others. This study gathered primary data from the farmers and HIV+ women who are the major beneficiaries of the AFFP project. This was done with the aid of closed and open ended questionnaire as a data collection tool. The questionnaire was used due to its appropriateness in gathering large information, its time saving and less costly (Cooper and Schindler, 2011). In addition, the researcher conducted face to face interview with project manager concerning the contribution of the project to beneficiaries. This was done using interview guide which will be constructed in advance and share with project manager early enough.

Data analysis

The data that was used in this study pertained to internal capacity building, agricultural support, financial income, fortified food and socio economic welfare of beneficiaries. These data were cleaned, coded and entered into SPSS version 21 software for processing and computation of findings. The findings were computed on two categories namely descriptive and inferential. Descriptive findings involved computations of frequencies, percentages, means and

standard deviation while inferential statistics involved computing Pearson's correlation coefficient, ANOVA and Beta coefficients.

Descriptive statistics are basic features of data set that summarize the data presented to give it a meaning and to facilitate easy interpretation. In this study descriptive statistical parameter that was used included mean which is a measure of the average of the data set. Additionally, the study also used standard deviation which is measure of the spread of the data or deviation of the observations from the mean. Frequency was also used which measures the number of observations and percentages which are conversions of frequencies into percentage.

Correlation is the strength and direction of association between two variables. Correlation analysis is the analysis of the strength of association between two variables. The study adopted Pearson's correlation coefficient which ranges between -1 to 1 where negative value represents negative association while positive value of Pearson's coefficient represents positive association between two variables. The association between each of the independent variables that is capacity building, agriculture support, financial income and fortified food and socioeconomic economic welfare indicators was determined in this study. This was done by feeding the data of the variables in the SPSS version 21 software and computing the Pearson's correlation coefficient.

Regression analysis model is a model that is used to determine the direction and magnitude of the effects of independent variable on dependent variable. The beta coefficients were computed by running a regression model in the software using the data on AFFP activities of focus and socioeconomic welfare indicators such as health, reduced hunger, access to basic needs and enhanced knowledge and skills. The coefficients indicate the extent of or percentage change of socioeconomic welfare indicators when there is a change in project activities. For example, if there is enhanced training of project beneficiaries then their socioeconomic welfare in terms of enhanced knowledge and skills is expected to improve.

ANALYSIS AND DISCUSSION OF FINDINGS

Descriptive Statistics

In order to achieve objectives of the study data was analyzed using descriptive and inferential statistics. Descriptive statistical analysis involved computing the percentages, mean and standard deviation for each contributing factor of AFFP.

Capacity building and socioeconomic welfare of beneficiaries

The researcher gathered information regarding the various activities pertaining to capacity building if at all it is practiced in the project and if it has been beneficial to project

targeted beneficiaries in terms of improved socioeconomic welfare. The findings did indicate that over 70% of respondents did agree that categories of trainings offered, regular trainings offered, relevance of the trainings, trainings quality and knowledge and skills gained indeed improved socioeconomic welfare in different ways such as improved income, improved production and reduced hunger among the vulnerable families. However, it is important to note that 26.7% and 16.7% of respondents did remain neutral on the trainings being relevant and knowledge and skills gained from the project respectively all boosting income of the beneficiaries enabling them access to basic needs. The mean response was above 4 indicating a strong agreement that capacity building activities were conducted in the project. Lastly the standard deviation was less than 1 for all cases meaning that there was smaller deviation on the respondents' opinions. These findings widely support that capacity building conducted by the project team indeed contributed to socioeconomic welfare of the beneficiaries (table 2).

Table 2: Capacity building and socioeconomic welfare of beneficiaries

Statement	SA	A	N	D	SD	mean	Std Dev
1. The categories of training offered led to improved knowledge and skills and reduced hunger	53.3%	46.7%	0%	0%	0%	4.53	0.51
2. Regular training offered led to improved knowledge, skills and farm output.	53.3%	46.7%	0%	0%	0%	4.53	0.51
3. Training conducted was relevant and improved the skills and income of the farmers	33.3%	40%	26.7%	0%	0%	4.01	0.78
4. Quality of training organized was good and improved skills and knowledge and production	20%	80%	0%	0%	0%	4.20	0.41
5. Knowledge and skills gained led to high production and income to meet basic needs	33.3%	50%	16.7%	0%	0%	4.17	0.70

Additionally, an interview with the manager did reveal the importance of capacity building on socioeconomic welfare of beneficiary. It was reported that the project team has built capacity of the beneficiaries through trainings in agriculture and business focusing on sustainable agricultural techniques, nutrition education, kitchen garden, post-harvest management, cooperative functionality and project development and savings.

Agricultural support and socioeconomic welfare of beneficiaries

Secondly the researcher collected opinion form respondents regarding the agricultural support by the project and its contribution to socioeconomic welfare of beneficiaries. The findings indicated that 53.3%, 63.3%, 43.3%, 46.7% and 36.7% of respondents did strongly agree that the project has improved farmers' income, agricultural production has improved, training on sustainable agriculture has been conducted, expanded market for produce and supervision of agricultural activities has been conducted by the project team respectively and that these activities has led to improved socioeconomic welfare of beneficiaries. Additionally, 46.7%, 36.7%, 56.7%, 53.3% and 63.3% of the respondents did agree with the statements in the respective order. The mean response rate was above 4 indicating a strong agreement among respondents with the statements whereas standard deviation was less than 1 also an indication of insignificant deviation of respondents' opinions (table 3). These findings widely support the fact the projects support to agriculture widely contributes to socioeconomic welfare of the beneficiaries.

Table 3: Agricultural support and socioeconomic welfare of beneficiaries

Statement	SA	A	N	D	SD	mean	Std Dev
1. Improved farmers income has improved access to basic needs	53.3%	46.7%	0%	0%	0%	4.53	0.51
2. Improved agricultural production has enhanced access to food and income	63.3%	36.7%	0%	0%	0%	4.63	0.49
3. Training on sustainable agriculture techniques and financial management has improved production output, income and food security	43.3%	56.7%	0%	0%	0%	4.43	0.50
4. Expanded market for produce has improved income and access to basic needs	46.7%	53.3%	0%	0%	0%	4.47	0.51
5. Supervision of agricultural activities has improved output hence food security.	36.7%	63.3%	0%	0%	0%	4.37	0.49

From the interview with the project manager concerning the support that the project has contributed to agriculture, the manager indicated that the trained project team on various agricultural techniques, goes back to the community to also teach others and this contributes a lot to agriculture development within the area.

Financial Income and socioeconomic welfare of beneficiaries

The researcher also gathered respondents' opinion on the contribution of financial income on socioeconomic welfare of beneficiaries. The farmers who supply corn soya used to make the flour get income from the project. The findings indicated that majority of respondents expressed their strong agreement that the income they get from the project contributes a lot to their socioeconomic welfare. The findings did indicate that 46.7% of respondents did agree strongly that family income has improved and it has boosted socioeconomic status while another 46.7% did agree. However, 6.7% of respondents were neutral regarding improved family income from the project. Additionally, 30%, 53.3%, 63.3% and 60% did strongly agree that income from the project has enabled families' access to basic needs, the prices for Corn are good, there is timely payment of corn supplied and the income covers agricultural costs respectively thus beneficial to their overall wellbeing. On the same note, 70%, 46.7%, 36.7% and 40% did agree with the above statements in the respective order (table 4). The mean response was above 4 signifying a strong agreement and the standard deviation was also less than 1 indicating a smaller deviation among the respondents' opinions. These findings generally indicate that the project has widely improved the peoples' income in the area more so farmers thus able to afford their needs and improve their socioeconomic welfare.

Table 4: Financial income and socioeconomic welfare of beneficiaries

Statement	SA	A	N	D	SD	mean	Std Dev
1. Improved family income has boosted socioeconomic welfare of beneficiaries	46.7%	46.7%	6.7%	0%	0%	4.4	0.62
2. The income from the project has enabled improved access to family basic needs	30%	70%	0%	0%	0%	4.3	0.47
3. The Corn prices offered by the project team is good and has boosted socioeconomic welfare of farmers	53.3%	46.7%	0%	0%	0%	4.53	0.51
4. There is timely payment of corn supply and this has boosted socioeconomic welfare of farmers.	63.3%	36.7%	0%	0%	0%	4.63	0.49
5. The income covers agricultural costs, output increases hence enhanced socioeconomic welfare of beneficiaries.	60%	40%	0%	0%	0%	4.60	0.50

From the interview session, the project manager did indicate that Aheza Fortified Food Project has been supporting farmers in different ways to grow crops and harvest enough yield for the project. In addition to that, the project buys maize and soya grown by those farmers at a good price compared to the price on the market and this help them to make more money and be able to afford the basic needs and keep getting the money for the next growing season.

Aheza fortified flour and socioeconomic welfare of beneficiaries

The researcher sought respondents' opinion regarding the fortified flour and how it contributes to their socioeconomic welfare. According to the findings, all respondents did agree that Aheza fortified flour is supplied in the right quantity, easily accessible, highly nutritious, and freshly produced and is safe for human consumption thus generally boosts their socio economic welfare in terms of health standards. It is also significant to note that the findings did indicate a large percentage agreeing strongly that Aheza fortified flour has contributed to their socioeconomic wellbeing. Indeed 50% did agree that the flour is in adequate supply while 53.3% did indicate that the flour is highly nutritious. The mean values for the statements were all above 4 indicating strong agreement with the statements while the standard deviation was also less than 1 signifying smaller deviation among the respondents' opinions. (table 5)

Table 5: Aheza fortified flour and socioeconomic welfare of beneficiaries

Statement	SA	A	N	D	SD	mean	Std Dev
1. Aheza Flour is of adequate quantity boosting socioeconomic welfare of beneficiaries	50%	50%	0%	0%	0%	4.5	0.51
2. Easy accessibility of Aheza flour boosts socioeconomic welfare of beneficiaries	46.7%	53.3%	0%	0%	0%	4.47	0.51
3. Aheza flour is highly nutritious boosting heath condition of beneficiaries	53.3%	46.7%	0%	0%	0%	4.53	0.51
4. Aheza flour is freshly produced hence highly nutritious to beneficiaries	46.7%	53.3%	0%	0%	0%	4.47	0.51
5. Aheza flour is safe for human consumption hence boosts the health condition of the beneficiaries.	43.3%	56.7%	0%	0%	0%	4.43	0.50

From the interview session, the project manager did say that the Aheza fortified food project produces high quality product and it is certified by Rwanda Standard Board since 2019 and keeps complying with the standards. Additionally, the manager indicated that they sell their product at affordable price since they make use of local raw materials. Additionally, he indicated that the product is accessible since they first serve the project beneficiaries and sell the remaining quantity to the community. He also indicated that the product mainly flour is highly nutritious and is liked by people because of the taste, color and flavor compared to other competitive products.

Inferential Statistics

This involved conducting correlation and regression analysis in order to assess the association and contribution of Aheza fortified food project on socioeconomic welfare of beneficiaries.

Correlation analysis

Correlation analysis aids in determining the association between two variables. The study involved determining the contribution of Aheza fortified food project on socioeconomic welfare of beneficiaries.

The researcher determined the association between the four project contributing factors including capacity building, agricultural support, financial income and fortified flour and socioeconomic welfare. The researcher computed Pearson correlation coefficient to determine the association between the project contributing factors and socioeconomic welfare.

The findings did indicate that capacity building, agricultural support, financial income and Aheza fortified flour had a Pearson correlation coefficient of 0.652, 0.668, 0.704 and 0.762 respectively. While analyzing, the corresponding significant value was 0.000 in all the cases. This is an indication that there is positive significant association between the project contributing factors and socioeconomic welfare of beneficiaries. Moreover, these empirical results indicate that capacity building, agricultural support, financial income and Aheza fortified flour have positive contribution on socioeconomic welfare of beneficiaries.

Table 6: Correlation between Aheza fortified food project and socioeconomic welfare of beneficiaries

		CB	AS	FI	AFF	SEW
CB	Pearson Correlation	1	.165	.087	.122	.652
	Sig. (two tailed)		.075	.067	.058	.000
	N	193	193	193	193	193
AS	Pearson Correlation	0.165	1	.263	.178	.668
	Sig. (two tailed)	.075		.078	.056	.000
	N	193	193	193	193	193
FI	Pearson Correlation	.087	.263	1	.256	.704
	Sig. (two tailed)	.067	.078		.183	.000
	N	193	193	193	193	193
AFF	Pearson Correlation	.122	.178	.256	1	.762
	Sig. (two tailed)	.058	.056	.183		.000
	N	193	193	193	193	193
SEW	Pearson Correlation	.652	.668	.704	.762	1
	Sig. (two tailed)	.000	.000	.000	.000	
	N	193	193	193	193	193

Note: CB-Capacity building, AS- Agricultural support, FI-Financial Income, AFF-Aheza Fortified Flour, SEW-Socioeconomic welfare

Regression Coefficients

The researcher also conducted regression analysis to determine the magnitude of contribution of Aheza fortified food project factors on socioeconomic welfare. The regression coefficients for constant term, capacity building, agricultural support, financial income and Aheza fortified flour were reported as .549, .396, .099 and .257 and .370 respectively. The corresponding significance values were .173, .005, .004, .024 and .000. This implies that a 1% increase in capacity building, agricultural support, financial income and Aheza fortified flour leads to an increase in socioeconomic welfare by 39.6%, 9.9%, 25.7% and 37% respectively other factors kept constant in each case. The Significant values are less than 0.05 for all the four independent variables. This means that these variables had positive significant contribution to socioeconomic welfare.

The regression model connecting Aheza fortified food project factors and socioeconomic welfare is fitted as $Y = 0.549 + 0.396X_1 + 0.099X_2 + 0.257X_3 + 0.370X_4$ where Y, X_1 , X_2 and X_3 , X_4 represents socioeconomic welfare, capacity building, agricultural support, financial income and Aheza fortified flour.

Table 7: Model Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig.
Constant	.549	.391		1.403	.173
Capacity building	.396	..128	.446	3.083	.005
Agriculture support	.099	.133	.122	.743	.004
Financial income	.257	.107	.257	2.407	.024
Aheza flour	.370	.057	.614	6.528	.000

Dependent variable: socioeconomic welfare

Model Summary

From the model summary (table 8), the R squared value is 0.844 equivalent to 84.4%. R squared value measures the percentage of variations in dependent variable that is explained by the independent variable. Therefore, it implies that capacity building, agriculture support, financial income and Aheza fortified flour jointly explains 84.4% of variations in socioeconomic welfare. While the remaining 15.6% is explained by other factors not captured in the study

Table 8: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.919	.844	.819	.21609

ANOVA

The ANOVA (table 9) shows the F statistics and the significance value. From the table, the F Statistics value is 219.406 with a significance value of 0.000. The value of F statistics is very high indication that the regression model adopted in this study to study the contribution of Aheza fortified project on socioeconomic economic welfare was appropriate. This is further stressed by the significance value of F statistics which is 0.000 less than 0.005.

Table 9: ANOVA

Model	Sum of Squares	df	Mean Squares	F	Sig.
Regression	60.557	4	15.139	219.406	.000
Residual	13.092	188	.069		
Total	73.649	192			

Dependent variable: Socioeconomic welfare

SUMMARY OF FINDINGS

This study was based on the contribution of Aheza fortified food project on socioeconomic welfare of the beneficiaries. The findings were presented based on the specific objectives. The researcher utilized both descriptive and inferential statistics to present the findings.

The first objective was based on the contribution of capacity building on socioeconomic welfare of the beneficiaries. Findings on descriptive statistics did reveal that over 70% of the respondents agreed that the trainings offered were relevant, quality, were of different categories, regular trainings were offered and knowledge and skills were gained from such trainings which generally improved the socioeconomic welfare of the beneficiaries. The interview session also did confirm that trainings are offered to the project team on different capacities which are helpful towards improving their skills and knowledge and hence improving their socioeconomic welfare. Correlation analysis did also indicate a correlation coefficient of 0.652 between capacity building and socioeconomic welfare. Regression analysis also indicated that the beta coefficient for capacity building was 0.396 which was positive with significance value of 0.005 implying that the contribution of capacity building is positive and significant.

The second objective focused on determining the contribution of agricultural support on socioeconomic welfare of beneficiaries. According to descriptive statistical findings, all respondents did agree that various agricultural support activities were offered by the project and they contributed to improving the welfare of the beneficiaries. These included improved farmers' income, expanded market for produce, improved production, training on sustainable agriculture techniques among others. Correlation findings did reveal a correlation coefficient of 0.668 which was positive and significant implying a strong association between agriculture support activities and socioeconomic welfare of beneficiaries. Regression analysis did reveal beta coefficient of 0.099 with a significant value of 0.004. This implies a positive contribution of agricultural support activities on socioeconomic welfare of beneficiaries.

The third objective focused on assessing the contribution of financial income from the project on socioeconomic welfare of beneficiaries in terms of enabling access to basic needs. Descriptive statistical findings did reveal that the project has improved family income, prices for Corn are good, there is timely payment of supply of corn and that income is enough to cover production costs thus improves the beneficiaries' socioeconomic welfare. This was supported by over 80% of the respondents. Additionally, correlation analysis did report a correlation coefficient of 0.704 with 0.000 significant value indicating a strong positive association between financial income and socioeconomic welfare of the beneficiaries. Regression analysis did report

a regression coefficient of .257 with a significant value of 0.024 indicating a high positive contribution on socioeconomic welfare.

Lastly the study aimed to determine the contribution of Aheza fortified flour on socioeconomic economic welfare through health conditions of the beneficiaries. Descriptive statistics findings did reveal that all respondents agreed that the flour is of adequate quantity, easily accessible, highly nutritious, and freshly produced and safe for human consumption thus leads to improved socioeconomic welfare of the beneficiaries. Correlation findings did reveal a correlation coefficient of 0.762 with 0.000 significance value whereas beta coefficient in the regression analysis was 0.370 with 0.000 significance value. This is an indication that Aheza fortified flour had positive contribution towards socioeconomic welfare of beneficiaries. Interview session also revealed that the flour is of high quality, nutritious, liked by many people and certified by Rwanda Standards Board, they are sold cheaply and easily accessible by beneficiaries.

CONCLUDING REMARKS

Conclusion

In line with the above summary of findings, the study concludes that there is positive significant contribution of capacity building, agriculture support, financial income and Aheza fortified flour on socioeconomic welfare of the beneficiaries. An enhancement of these project activities leads to improvement in socioeconomic welfare of project beneficiaries which included mainly vulnerable women and farmers. Intensified capacity building improves knowledge and skills acquisition among the beneficiaries thus their socioeconomic status improves. Agricultural support leads to greater productivity and income thus alleviating hunger among the beneficiaries. Financial income from the project enables the farmers to access basic needs hence improving their socioeconomic status. Lastly Aheza fortified flour is in right quantity and highly nutritious hence improving the health conditions of the beneficiaries.

Recommendations

Based on the above conclusion, the research came up with the following recommendations:

The study recommends that project managers dealing with food security and poverty alleviation projects should focus on capacity building activities by conducting relevant trainings, quality and regular trainings which are able to make the beneficiaries acquire the right knowledge and skills for them to be active in production process hence improve their living conditions.

To the donors and the government, the study recommends that they should give priority to agricultural support activities and build relevant and quality capacity for successful food security and poverty alleviation projects.

Empowering of beneficiaries through knowledge and skills enhancement is key for sustainability of food security projects and this should form part of the critical areas to focus on by project managers to be successful.

Limitations of the study

One key limitation to the study was related to winning the trust of the respondents so that they can share information freely. Some respondents may be guarded as a mechanism against those who may want to single them out; this challenge was mitigated through full disclosure by the researcher, assurance of anonymity and proper explanation of the purpose of the study. The study was also limited by time during data collection where some respondents could not turn up during data exercise due to some commitments. However, the researcher gave ample time to fill the data collection tool and return back. Additionally, the researcher used email to send questionnaires for respondents who could not be reached physically. Lastly language barrier constraint could arise among respondents. However, the researcher with the aid of an assistant assisted to clarify the questions to the respondents.

REFERENCES

- Beesley, AD & Shebby, S 2010. Evaluating Capacity Building in Education. The North Central Comprehensive Centre. Denver, Colorado: American Educational Research Association.
- Cooper & Schindler. (2011). Business Research Methods. New York: Mc Graw Hill.
- FAO (2009). Food Security and Sustainable Livelihood Programme For Pacific Island Countries. National Capacity Building For Strategic Project Identification and Design.
- Gibson & Gakuu. (2013). Influence of Donor Funded Projects on the Social Economic welfare of the rural communities: Case of CADSAL in Elgeyo Marakwet County, Kenya. Nairobi: University of Nairobi.
- Khan, Ammad Javed; Ali, Wajid. 2019. Capacity Development Challenges in the way of SDGs implementation in Pakistan. © Sustainable Development Policy Institute. <http://hdl.handle.net/11540/9713>.
- Kothari C.R. (2011). Research Methodology:Methods and Techniques. New Delhi: New Age International.
- Lambert& Patrick (2019). Influence of Group Characteristics on Agricultural Credit Repayment Performance Among Maize Producer Groups in Rwamagana District. International Journal of Social Sciences and Information Technology., vol IV Issue IX.
- Lichterman, Paul & Isaac (2014). Theory and Contrastive Explanation in Ethnography. Sociological methods and research.
- Mosohlo(2016). Assessment of Sustainability of Donor Funded Agricultural Projects. A Case Study of Sustainable Agriculture and Natural Resource Development Programme in Mafeteng, Lesotho .University of Free State.
- NISR(2016). The Fifth Integrated Household Living Conditions Survey. Rwanda Poverty Profile 2016/2017.
- ODI (1995). NGOs and Official Donors Briefing Paper
- OECD(2018). Development Aid at a Glance. Africa Statistics by Region.

Orodho A. (2003). Essentials of Education and Social Science Research Methods. Nairobi: Mosoal Publications.

United Nations (2018). Ending Poverty. Poverty Facts and Figures.

United Nations(2018). Accelerating Global Actions for a World Without Poverty. United Nations.