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PERCEIVED EFFECTIVENESS OF ZAMFARA COMPREHENSIVE AGRICULTURAL REVOLUTION PROGRAMME (ZACAREP) IN ACHIEVING FOOD SECURITY IN ZAMFARA STATE

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ABSTRACT

This study examined the perceived of effectiveness Zamfara Comprehensive Agricultural Revolution Programme (ZACAREP) in achieving food security in Zamfara State, Nigeria. The study focused on ZACAREP effectiveness in terms of crop production, crop intensification and capacity building of medium and small scale farmers in achieving food security. This study adopted a descriptive survey research design. The population of this study consisted of 897 farmers and 250 agricultural extension workers) making a total of 1147 population under the ZACAREP programme from the 14 LGAs in Zamfara State. The sample size of 291(117 farmers and 74 agricultural extension workers) was determined through the Research Advisors (2006) table at 5.0% Margin of Error and selected through purposive sampling technique. The instrument for data collection was structured questionnaire titled "Perceived Effectiveness of Zamfara Comprehensive Agricultural Revolution Programme Questionnaire (PEZACAREPQ). The reliability test was done and overall reliability value obtained was 0.81. Mean statistics was used to analyze data related to the research questions raised in this study. The findings of this study revealed that ZACAREP was slightly effective in improving crop production (aggregate x = 2.0); slightly effective in crop intensification (aggregate x = 1.3); and Slightly effective in training of frontline extension staff and farmers for effective technology in achieving food security (aggregate x = 1.9). This study concluded that ZACAREP has not been very effective in ensuring that food security is achieved in Zamfara State. This study recommended among others that the Zamfara State Government should intensify efforts and supports through ZACAREP in providing modern technology for farmers to enable them improve crop production in achieving food security in the State.

Keywords: Effectiveness, ZACAREP, Food Security, Crop Production, Capacity Building

Introduction

Food is one of the basic needs of every human being. Not only is more food needed by individuals, quality and nutritious food is needed by individuals to live, stay healthy and enjoy a happy and productive life. The right to food is recognized in the 1948 Universal Declaration of Human Rights (UDHR Article 25(1) as part of the right to adequate standard of living, and is enshrined in the 1966 International Covenant on Economic, Social and Cultural Rights (United Nation Human Right (UNHR), 2019). The Convention proclaimed that all human beings, regardless of race, colour, sex, language, religion, nationality, birth or other status have the right to adequate food and to be free from hunger.

In recognition of the importance of food, the United Nation declared October 16th of every year as the "World Food Day' with the goal of creating global awareness on food security (Food and Agriculture Organization (FAO), 2019). Food security issues was brought to lime light during the world food conference in 1974 when it downed on governments of all nations for the need to strategize on how best to improve agricultural production so as to match the per capital needs of the population (Metu, Okeyika & Maduka, 2021). The United Nations (UN) Secretary General then had in a World Food Summit in 2009, warned that six million children die of hunger every year, 17,000 die of starvation every day and by 2050, the world will need to feed two million more mouths. This according to Metu et al (2021) had rekindled the idea of sustainable food security in all countries of the world.

Food security can be referred to as the measure of the availability of food and individuals' capacity to access it. It is the availability of food to all individuals regardless of class, gender or region. According to the World Food Summit as cited by United States Agency for International Development (USAID) (2023), food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food required to live healthy life. FAO stated that food security is achieved when adequate and nutritious food is available and accessed by all the population at all times, individuals have access to adequate resources to acquire foods, and utilize them through adequate diet, clean water, sanitation and health care to reach a state of nutritional well-being.

Achieving food security has become a top priority of many nations. International organizations such as Food and Agriculture Organization (FAO), World Food Programme (WFP), International Fund for Agricultural Development (IFAD), and World Health Organization (WHO) are collaborating with different governments with the aim to alleviate hunger, reduce the population of malnourished people and achieve global food security (Matemilola & Elegbede, 2017). World food insecurity has continued to rise in most countries in spite of these collaborations. FAO (2020) stated that globally, millions of people suffer from food insecurity as a result of lack of money and access to food. FAO reported that world hunger is affecting 9.9% of people worldwide, and noted that from 2019 to 2020, the number of undernourished people grew to 161 million.

In Africa, according to Lutz, Amandla and Gillian (2019), agriculture has a massive social and economic footprint. More than 60 percent of the population of Sub- Saharan Africa is small holder farmers and about 23 percent of Sub-Saharan Africa's GDP comes from agriculture. In Nigeria, agriculture is the most important sector providing employment for about 60% of the population. It provides food, raw materials for industries, and foreign exchange for national development. The potentials for agriculture in the country are great because of good land, adequate rainfall and abundant sunshine it is endowed with. In agreement, Odukoya (2020) stated that Nigeria is blessed with immense agricultural resources with a large expanse of land estimated at 91 million hectares, of which 81 million is arable and fertile. Similarly, the rich soil types and human resources made Nigerian

agricultural advantaged nation. In view of these rich agricultural resources, it is expected of the country to be producing enough food for its teeming population and for world supplies.

The Nigerian government (past and present) recognizes that attainment of food security is an insurance against hunger and malnutrition. Various Nigerian governments have made agriculture as part of its Transformation Agenda (TA). The focus of TA according to Chisenga (2023) is to achieve food security. Agricultural programmes of Nigerian governments include; Operation Feed the Nation (OFN), River Basin Development Authorities, and National Special Programme for Food Security (NSPFS) and Fadama Development Project. Toromade (2018) listed other programmes as Directorate of Food and Rural Infrastructure (DFRI), Agriculture Promotion Policy (APP), Anchor Borrowers Programme, Presidential Fertilizer Initiative (PFI), Youth Farm Lab, and Food Security Council. Despite these programmes, FAO (2021) regrets the worsening state of food insecurity in Nigeria as over four million Nigerians face hunger and suffer from malnutrition. For Nigeria to harness all its agricultural potentials and achieve food security, the state governments must join hands with the Federal Government to revive the agricultural sector. That is what the Zamfara State government under the leadership of Ahmed Sani did to revitalize agricultural activity in the state. In Zamfara State, about 82% of the population live in the rural areas and depend on agriculture as a means of livelihood (Sani, 2018). Zamfara State is an agrarian state that prides itself as the home of agriculture; hence its slogan "Farming is our pride". The agricultural sector in the state is largely small and medium scale with majority of the farmers having small land holdings. Given the role of agriculture in stimulating the economic growth and development of Zamfara State, the government recognizes that investing in farming can increase crop production and ensure food security. Zamfara Comprehensive Agricultural Revolution Programme with acronym ZACAREP was created in 2004 with the aim to bring about a total revolution of agricultural sector so as to increase food production and achieve food security (ZACAREP in Zamfara State Government 2021). The justifications for creating ZACAREP are that high economic growth rate is possible when agricultural production is significantly increased, and higher output will directly reduce hunger and bring down cost of foods. ZACAREP is community driven, and relies on the participation of private sector and lead investment in production activities. It is also technology-driven with government playing a leading role in the agricultural development efforts. According to Sani (2018), the objectives of ZACAREP include the following:

i. Increase crop production by small and medium scale farmers of Zamfara through the dissemination of improved and proven crop-based technologies,
ii. Crop intensification through the promotion of animal tractor technology to facilitate area expansion of cultivable land, reduction in drudgery and enhanced sustainable increase in food production,
iii. Provision of routine seasonal capacity building of frontline extension staff along with resourceful farmers to develop quality extension staff for effective technology transfer,

iv. Promotion of development of farmers association for linkage to saving and loan services, input supply and output marketing,

v. Introduction of cost-reducing, labour-saving agro-processing technologies suitable for micro-enterprises development with priority on identifying new income generating opportunities for women,

vi. Promotion of the establishment of private sector enterprises that will serve the small holder farmer sector, especially for inputs (improved seed, fertilizer, and agro- chemicals) marketing and value-adding,

vii. Increased meat production through the provision of full package of bulls, rams, goats

etc, feeds, drugs, and minerals salts will improve livestock feed management technology to

farmers, and

viii Improvement of the nutritional status of rural populace through the dissemination of

improved food processing and utilization techniques.

In order to achieve the goals of this study, the above objectives of ZARACEP are summarized by the researcher into eight sub-variables namely; crop production, crop intensification, capacity building on food utilization techniques, provision of financial services, provision of agro-processing technologies, promoting the establishment of private sector enterprises, provision of food processing techniques and improved nutritional status.

One of the important objectives of ZACAREP is to increase the production of crops to meet the state's domestic food and industrial requirements, and to generate excess crops for sale and strategic reserves (ZACAREP, 2004). Crops covered under ZACAREP include Sorghum, Millet, Maize, Rice, Wheat, Groundnut, Cowpea, Guinea Corn and Cotton among others. Increased crop production can be achieved by ZACAREP through the introduction of improved agricultural techniques for farmers to enable them improve their efficiency in farming activities. Crop intensification on the other hand implies maximizing production to grow crop with intensive care and management (Musa, 2018). It also involves the provision of good land/site for selection, provision of improved seeds, fertilizers, insecticides, irrigation and farming opportunities to farmers especially in rural communities. According to Zamfara State Government (2021), crop intensification under ZACAREP covered adaptation and promotion of farm land, soil and water management practices to enhance sustainability of agricultural efforts of farmers, promotion of simple farm implements for use, promotion of small-scale irrigation by drilling shallow wells and supply of water pumps to tap under-ground water for irrigation purposes, and construction of access roads to farming communities.

Furthermore, capacity building on food utilization techniques by ZACAREP implies the provision of training programmes for farmers on crop-based technologies to enable them improve their farm productivity to enhance nutritional status of rural populace. Capacity building by ZACAREP also covers training of farmers on how to prepare land for seasonal planting, use of harvesting techniques, use of work bull in farming, and use of modern storage and crop processing techniques.

Onyeneke,et al (2019) stated that the purpose of capacity building to farmers is to disseminate information regarding available climate changes, innovative technologies in crop production, and other adaptive measures related to climate change and climate-tolerant seeds. Additionally, as part of its capacity building efforts, ZACAREP provides information to farmers on proper use of food, adequate nutrition; health and sanitation as it relates to nutrition and child care techniques.

In Zamfara State, ZACAREP is targeted towards farmers and agricultural extension workers who may live in urban and rural areas carrying out varying agricultural activities. These groups will form the respondents for this study. Farmers can be referred to as person or persons who manages a farm or engaged in agriculture, raising living organism for food or for raw materials. A farmer is a person who cultivates land or crops or raises animals (Merriam Webster, 2019). Hlophe-Ginindza and Mpandeli stated that the characteristics differentiating small-scale from medium scale farmers are size of farm system, household expenditure, and use of family labour, mechanization, capital intensity, financial ability and level of linkages with larger economic systems. Farmers and agricultural extension workers belong to different groups. These groups may have different perception regarding the perceived effectiveness of ZACAREP in achieving food security in Zamfara State.

The perceived effectiveness of ZACAREP in meeting its objectives in Zamfara State is highly in doubt as a result of high rate of food shortages, malnutrition and food insecurity in Zamfara State (FAO, 2021). In addition, farming in the Zamfara state is still highly underdeveloped. Based on this backdrop, this study seeks to ascertain the perceived effectiveness of Zamfara comprehensive agricultural revolution programme in achieving food security in Zamfara state.

Statement of the Problem

Food insecurity is recognized as a major challenge facing many countries around the globe. Governments of many nations are collaborating with the international organizations to create agricultural programmes that will help them reduce hunger and malnutrition as well as ensure food security of their respective countries. The Nigerian governments (past and present) have initiated various agricultural programmes aimed towards improving agricultural activities and increase food production. Despite these programmes, food insecurity has remained a major problem facing the nation evidenced by the high rate of hunger and malnutrition among its population. In support, FAO (2021) revealed that over four million Nigerians face hunger and suffer from malnutrition.

In Zamfara State, Nigeria, Zamfara Comprehensive Agricultural Revolution Programme (ZACAREP) was established in the year 2004 by their first executive governor Alhaji Ahmed Sani with the aim of providing diversified services to farmers. Such services are expected to lead to increase in crop production, reduction in food shortages, hunger and malnutrition, and ensure food security. Though ZACAREP has recorded some achievements in areas of provision of free tractor services, improved seeds, fertilizer and agro-chemicals to farmers, however, it is quiet disturbing that report and statistics by World Food Programme (WFP) (2021)

showed that about 2.53 million people in Zamfara State suffer food insecurity. Sasu (2022) observed that Zamfara State was ranked the 6th poorest state in Nigeria with about 73.98% people living in poverty. This agrees with the earlier observation by Sani (2018) that agricultural sector in Zamfara State is still largely underdeveloped, and many farmers still suffer high post-harvest losses, lack access to modern agricultural technologies, and market. Similarly, FAO (2021) and IFRC (2021) revealed high rate of food shortages, hunger, and malnutrition and food insecurity in the state. These reports imply that ZACAREP may not be effective in achieving its objectives in Zamfara State. The researcher is motivated to carry out this study in view of very limited empirical studies to ascertain the perceived effectiveness of Zamfara Comprehensive Agricultural Revolution Programme (ZACAREP) in achieving food security in the State.

Purpose of the Study

The purpose of this study is to determine the perceived effectiveness Zamfara Comprehensive Agricultural Revolution Programme (ZACAREP) in achieving food security in Zamfara state. Specifically, this study will ascertain the perceived effectiveness of ZACAREP in achieving food securityin Zamafara state:

1. Improving crop production of small and medium scale farmers for improved food productivity in the state;
2. Improving crop intensification of small and medium scale farmers through traction technology for enhance food production.
3. Training of frontline extension staff and farmers for effective technology transfer.

Research Questions

The following research questions will guide this study:

1. How effective is ZACAREP in improving crop production by small and medium scale farmers for increased for productivity in Zamfara state?
2. How effective is ZACAREP in improving crop intensification of farmers through traction technology for enhanced food production in Zamfara state?
3. How effective is ZACAREP in training of frontline extension staff and farmers for effective technology transfer in Zamfara state?

Research Hypotheses

The following null hypotheses will be tested at 0.05 level of significance:

1. Farmers will not differ significantly in their mean ratings on the perceived effectiveness of ZACAREP in improving crop production of farmers for increased productivity in Zamfara state.
2. Small and medium scale farmers will not differ significantly in their mean ratings on the perceived effectiveness of ZACAREP in crop intensification farmers through traction technology for enhanced food production.
3. There will be no significant difference in the mean ratings of farmers on the perceived effectiveness of ZACAREP in training of frontline extension staff and farmers for effective technology transfer.

Research Method

This study adopted a descriptive survey research design. A survey research design involves gathering and interpreting data from two groups of respondents using a questionnaire in order to seek opinion from the population or a representative sample (Nworgu, 2015). Since this study aims to ascertain the views and opinions of farmer's agricultural extension workers on the perceived effectiveness of ZACAREP in achieving food security in the state, the survey research design is deemed appropriate.

The population of this study consisted of 897 farmers and 250 agricultural extension workers) making a total of 1147 population under the ZACAREP programme from the 14 LGAs in Zamfara State. Information on the population was obtained from the ZACAREP Technical Office Ministry in Zamfara State as at December 8th 2022. The sample size of 291(117 farmers and 74 agricultural extension workers) was drawn for this study. Six LGAs were purposively drawn from 14 LGAs namely; Gusau, Bungudu, Tsafe, Maru, K/Namoda, and Talata Mafara. Purposive sampling relies on the judgment of the researcher when it comes to selecting the LGAs using certain criteria. The criteria used in selecting the six LGAs that participated in this study were: accessibility, insecurity, kidnapping and armed banditry. According to Nuhu (2019) crime analysis in Zamfara state shows a very high rate of increase in heinous activities such as kidnapping and armed banditry. Secondly, using The Research Advisors (2006) table for determining sample size, the sample size for a population of 291 of farmers and agricultural extension workers in the six selected LGAs at 5.0% Margin of Error is approximately 291.

The instrument for data collection was structured questionnaire titled "Perceived Effectiveness of Zamfara Comprehensive Agricultural Revolution Programme Questionnaire (PEZACAREPQ). The instrument consisted 15 items in addressing the research questions raised for the study. The instrument is structured on a four point rating scale of Very Effective (VE) – 4, Effective (E) – 3, Slightly Effective (SE) – 2 and Ineffective (IE) – 1.

The questionnaire was validated by five lecturers; two from Adult and Continue Education, one from Science Education, one from Educational Foundation and one from Educational Management and Policy; all from Nnamdi Azikiwe University Awka. They were requested to ascertain the appropriateness and suitability of the instrument for the study. Their corrections, suggestion, criticism and recommendation were effected which serve as the final draft of the instrument.

To determine the reliability of the instrument, a pilot study was carried out using 20 participants (15 farmers and 5 agricultural extension workers) through test re-test method of reliability. The copies of the instrument were presented twice to the participants within an interval of interval three weeks. The data collected from the pilot study was analysed using Cronbach Alpha Method. The choice of Cronbach method becomes as Uzoagulu (2011) described it as a generalized formula which can be applied to polychotomous items. The overall reliability value obtained was 0.81.This confirms that the items or variables analyzed in this research

instrument measured what the same underlying construct consistently. Mean statistics was used to analyze data related to the research questions. Mean will be chosen because it is more reliable measure of central tendency.

Presentation of Results

Research Question 1: How effective is ZACAREP in improving crop production by small and medium scale farmers for increased for productivity in Zamfara state?

The responses to answer this research question are rated as:

Very Effective (VE) = (Mean = 3.1 – 4.0)
Effective (E = (Mean = 2.1 – 3.0)
Slightly Effective (SE) = (Mean = 1.1 – 2.0)
Ineffective (IE) = (Mean = 0.1 – 1.0)

Table 1: Effectiveness of ZACAREP in improving crop production by small and medium scale farmers for increased for productivity in Zamfara State

S/N	Statements	Respondents	VE	E	SE	IE	Mean	Remarks
1	Providing crop to small farmers to improve crop production	Farmers	13	20	62	22	2.2	E
		Extension Workers	9	15	36	14	2.3	E
2	Providing pest resistant seeds varieties to farmers to enhance crop yield.	Farmers	7	15	79	16	2.1	E
		Extension Workers	6	14	43	11	2.2	E
3	Providing insecticides to farmers to prevent insects/pests from destroying their crops.	Farmers	8	14	81	14	2.1	E
		Extension Workers	10	15	34	15	2.3	E
4	Giving advice to farmers on how to get improved varieties of seeds.	Farmers	8	13	70	26	2.0	E
		Extension Workers	6	9	45	14	2.1	E
5	Providing modern technology for farmers to enable them improve crop production.	Farmers	3	9	10	95	1.3	SE
		Extension Workers	6	2	12	57	1.3	SE

Aggregate Mean = 2.0 = (Slightly Effective)

Table 1 revealed the views of the respondents (farmers and extension workers) on the effectiveness of ZACAREP in improving crop production by small and medium scale farmers for increased for productivity in Zamfara State. It was revealed that both farmers and extension workers agreed that ZACAREP helps in providing crop to small farmers to improve crop production with the mean scores of 2.2 and 2.3. The respondents also agreed that that ZACAREP helps in providing pest resistant seeds varieties to farmers to enhance crop yield with the mean scores of 2.1 and 2.2. Also, ZACAREP helps in providing insecticides to farmers to prevent insects/pests from destroying their crops (mean = 2.1 and 2.3) and advices farmers on how to get improved varieties of seeds with the mean scores of 2.0 and 2.1. However, the respondents agreed that in the aspect of providing modern technology for farmers to enable them improve crop production ZACAREP was slightly effective with the mean scores of 1.3 and 1.3 respectively.

Research Question 2: How effective is ZACAREP in improving crop intensification of farmers through traction technology for enhanced food production in

Zamfara State?

The responses to answer this research question are rated as:

Very Effective (VE) = (Mean = 3.1 – 4.0)
Effective (E) = (Mean = 2.1 – 3.0)
Slightly Effective (SE) = (Mean = 1.1 – 2.0)
Ineffective (IE) = (Mean = 0.1 – 1.0)

Table 2: Effectiveness of ZACAREP in improving crop intensification of farmers through traction technology for enhanced food production in Zamfara State

S/N	STATEMENTS	RESPONDENTS	VE	E	SE	IE	Mean	Remarks
6	Providing fertile land for selection by farmers.	Farmers	5	7	16	89	1.4	SE
		Extension Workers	7	8	14	45	1.9	SE
7	Providing fertilizers to be used in their farm lands by farmers	Farmers	11	16	49	41	2.0	SE
		Extension Workers	28	39	42	33	1.9	SE
8	Providing mobility to farmers to enable them transport their produce to markets.	Farmers	-	3	7	107	1.0	IE
		Extension Workers	-	1	1	72	1.0	IE
9	Promoting small-scale irrigation by drilling shallow wells to enable farmers to plant crops during the dry season.	Farmers	-	1	2	114	1.0	IE
		Extension Workers	-	1	1	72	1.0	IE
10	Making arrangement with farmers on buy back arrangement in case of bad market.	Farmers	-	-	2	115	0.7	IE
		Extension Workers	-	1	1	72	1.0	IE

Aggregate Mean = 1.3 (Slightly Effective)

As shown in Table 2, both the farmers and extension workers responded that ZACAREP is slightly effective in providing fertile land for selection by farmers and in providing fertilizers to be used in their farm lands by farmers with the mean scores of 1.4 and 1.9; 2.0 and 1.9 respectively. In another vein, the respondents agreed that ZACAREP is ineffective in providing mobility to farmers to enable them transport their produce to markets (x= 1.0 and 1.0); in promoting small-scale irrigation by drilling shallow wells to enable farmers to plant crops during the dry season (x= 1.0 and 1.0); and ineffective in making arrangement with farmers on buy back arrangement in case of bad market (x = 1.0 and 1.0).

Research Question 3: How effective is ZACAREP in training of frontline extension staff and farmers for effective technology transfer in Zamfara state?

The responses to answer this research question are rated as:

Very Effective (VE) = (Mean = 3.1 – 4.0)
Effective (E) = (Mean = 2.1 – 3.0)
Slightly Effective (SE) = (Mean = 1.1 – 2.0)
Ineffective (IE) = (Mean = 0.1 – 1.0)

Table 3: Effectiveness of ZACAREP in training of frontline extension staff and farmers for effective technology transfer in Zamfara State

S/N	Statements	Respondents	VE	E	SE	IE	Total	Remarks
11	Training farmers on how to prepare land for seasonal planting.	Farmers	8	13	70	26	2.0	E
		Extension Workers	6	9	45	14	2.1	E
12	Training farmers on the use of work-bull in farming to increase productivity.	Farmers	13	20	62	22	2.2	E
		Extension Workers	9	15	36	14	2.3	E
13	Providing training to farmers on the use of modern storage techniques.	Farmers	-	1	2	114	1.0	IE
		Extension Workers	-	1	1	72	1.0	IE
14	Organizing workshops and trainings to frontline extension staff and farmers on how to apply insecticides and chemicals to their farms.	Farmers	7	15	79	16	2.1	E
		Extension Workers	6	14	43	11	2.2	E
15	Disseminating information to frontline extension staff and farmers on climate changes that affect the planting of different crops.	Farmers	13	20	62	22	2.2	E
		Extension Workers	9	15	36	14	2.3	E

Aggregate Mean = 1.9 (Slightly Ineffective)

Table 3 shows the views of the respondents (farmers and extension workers) on the effectiveness of ZACAREP in training of frontline extension staff and farmers for effective technology transfer in Zamfara State. The respondents agreed that ZACAREP is effective in training farmers on how to prepare land for seasonal planting (x = 2.0 and 2.1); effective in the training farmers on the use of work-bull in farming to increase productivity (x = 2.2 and 2.3); effective in organizing workshops and trainings to frontline extension staff and farmers on how to apply insecticides and chemicals to their farms (x = 2.1 and 2.2); and effective in disseminating information to frontline extension staff and farmers on climate changes that affect the planting of different crops (x = 2.2 and 2.3). However, the respondents (farmers and extension workers) viewed that ZACAREP is ineffective in providing training to farmers on the use of modern storage techniques with the mean scores of 1.0 and 1.0 respectively.

Discussion of Findings

The first purpose of this study was to examine how effective ZACAREP was in improving crop production by small and medium scale farmers for increased for productivity in Zamfara State. The finding to this purpose revealed that ZACAREP was effective helps in providing crop to small farmers to improve crop production; in providing pest resistant seeds varieties to farmers to enhance crop yield and in providing insecticides to farmers to prevent insects/pests from destroying their However, the finding to this purpose revealed that ZACAREP was ineffective in improving crop production to small and medium scale

farmers for increased for productivity in Zamfara State.

The second purpose of this study was to examine how effective ZACAREP was in improving crop intensification of farmers through traction technology for enhanced food production in Zamfara State. The findings to this purpose revealed that ZACAREP was ineffective in providing mobility to farmers to enable them transport their produce to markets; in promoting small-scale irrigation by drilling shallow wells to enable farmers to plant crops during the dry season and ineffective in making arrangement with farmers on buy back arrangement in case of bad market. Also, the aggregate mean also shows that ZACAREP was slightly effective. This finding is in congruence with the Zamfara State Government (2021) that crop intensification under ZACAREP covered adaptation and promotion of farm land, soil and water management practices to enhance sustainability of agricultural efforts of farmers, promotion of simple farm implements for use, promotion of small-scale irrigation by drilling shallow wells and supply of water pumps to tap under-ground water for irrigation purposes, and construction of access roads to farming communities.

The third purpose of this study was to find out how effective ZACAREP was in training of frontline extension staff and farmers for effective technology transfer in Zamfara State. The findings to this purpose revealed that ZACAREP was effective in providing capacity building programmes to farmers but ineffective in the provision of training to farmers on the use of modern storage techniques. The findings of this study supported Onyeneke,et al (2019) who affirmed that capacity building helps farmers greatly to disseminate information regarding available climate changes, innovative technologies in crop production, and other adaptive measures related to climate change and climate-tolerant seeds.

Conclusion

This study examined the perceived effectiveness Zamfara Comprehensive Agricultural Revolution Programme (ZACAREP) in achieving food security in Zamfara State. From the findings of this study, it can be concluded that ZACAREP has not been very effective in ensuring that food security is achieved in Zamfara State. This may be due to inability to provide adequate modern technology for crop production, inability to provide modern storage facilities due to administrative bottlenecks, politics and insecurity among others. However, ZACAREP has the capacity to help the State achieve food security if the government increases her supports for the programme.

Recommendations

Based on the findings and conclusion of this study, the following recommendations are made that:

1. The Zamfara State Government should intensify efforts and supports through ZACAREP in providing modern technology for farmers to enable them improve crop production in achieving food security in the State;
2. The governments and private individuals should help small-scale irrigation system by drilling shallow wells to enable (farmers) to plant crops during the dry season

3. The governments and private well-to-do individuals should in help providing modern day storage facilities in achieving food security in the State.

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