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ASSESSMENT OF FARM-LEVEL PREFERENCES AND UTILIZATION OF SELECTED ORPHAN CROPS BY FARMERS IN EBONYI STATE, NIGERIA

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ABSTRACT

The study assessed farm-level preferences and utilization of selected orphan crops in Ebonyi State, Nigeria. Data were collected from 240 farmers using a structured questionnaire and analyzed with descriptive and inferential statistics. Findings revealed that most farmers (74.1%) were male, with a mean age of 44 years, household size of 8 persons, farming experience of 19 years, educational level of 13 years, and annual income of ₦346,259. The major orphan crops cultivated were Bambara groundnut (99.2%), cowpea (98.3%), sweet potato (97.9%), and African rice (91.7%). Forms of utilization, in order of magnitude, included food, feed, medicine, spices, fruits, and vegetables, with breadfruit ($\bar{X}$ = 4.9), sweet potato ($\bar{X}$ = 4.5), cowpea ($\bar{X}$ = 4.4), and Bambara groundnut ($\bar{X}$ = 4.0) being most utilized. The relationship between orphan crop utilization and farmers' socioeconomic characteristics was significant (R^2 = 0.759), indicating that about 76% variation in utilization was explained by attributes such as income, education, and experience. The main determinants of preference were nutritional value ($\bar{X}$ = 4.8), health benefits ($\bar{X}$ = 4.6), ease of cooking ($\bar{X}$ = 4.4), and contribution to food security ($\bar{X}$ = 4.2). However, major constraints to utilization of orphan crops were identified as production and institutional factors. The study recommends that government agencies and NGOs intensify advocacy, research support, and extension services to promote the cultivation and utilization of orphan crops for improved income, nutrition, and sustainable food security in the state.

Keywords: Assessment, Farm-Level, Preferences, Utilization, Orphan Crops, Farmers, Ebonyi State

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1. INTRODUCTION

Ensuring global food and nutrition security is an age-old challenge, which is being exacerbated by the accelerated population growth rates in poor and emerging economies, urbanization, extreme and changing climates, the need to minimize the environmental impact of agricultural activities, and the competing demands for food, feed and fuel (Alexandratos and Bruinsma 2012). Global agri-food systems depend on a small and decreasing number of plant and animal species and strains (Khoury *et al.* 2014); however, there are concerted efforts to incorporate orphan crops, plant species whose production and utilization has been limited to a few regions or niche markets.

Orphan crops are often defined as staple crops that are grown in limited regions, have relatively good adaptation to low-input conditions, are not extensively traded and have received little attention from researchers (Dawson *et al.*, 2019). Although orphan crops have limited economic value worldwide, but they are often highly important at the local level, especially in developing countries (Chiurugwi *et al.*, 2019).The preferences for orphan crops, vary across regions and communities, often driven by cultural and traditional practices (Padulosi, Thompson and Rudebjer, 2013). In many African countries, orphan crops like sorghum, millets, and cowpeas are preferred for their drought tolerance, nutritional benefits, and ability to thrive in challenging environments (Mabhaudhi, Chibarabada, Chivenge, Murugani, Pereira, Sobratee and Modi, 2019). The utilization of these crops is gaining attention due to their potential to enhance food security, improve nutrition, and support sustainable agriculture (Chivenge, Mabhaudhi, Modi and Mafongoya, 2021). Understanding the preferences and utilisation of orphan crops can help inform strategies to promote their cultivation, processing, and consumption, ultimately contributing to more resilient and sustainable food systems.

Orphan crops are also important for supporting affordable, sustainable and diverse farming systems because they usually require less water than most global staples and can sometimes improve soils through nitrogen fixation and the incorporation of organic matter. Moreover, most orphan crops are hardy and can tolerate harsh conditions such as drought, frost, pests and disease. Orphan crops could therefore help protect world food supplies, particularly as challenges such as climate change, diseases and pests threaten global food crop monocultures. Worldwide, 90% of human calorific needs are supplied by only 20 species, with 60% of the global crop output coming from wheat (*Triticum aestivum*), maize (*Zea mays*), rice (Oryza sativa) and soya (*Glycine max*) (Massawe *et al.*, 2016). In poor and food-insecure regions of the world, however, the acreage devoted to orphan crops is often comparable to that of the major crop species (Tadele, 2018).

The global acreage devoted to some orphan crops is increasing due to their adoption in advanced economies, for example, the increasing use of broad bean, lupin and lentil as rotation and break crops (Amare *et al.*, 2015). Because of this wider adoption, there is a need for the rapid development of special-use varieties and the introduction of traits that will facilitate production in new environments. The traits that are important to farmers in poorer parts of the world may not receive much attention during this wider adoption; therefore, the resources targeted at these traits must also be increased to accelerate their introduction into farmer-preferred varieties. Breeding better varieties also has the potential to increase the incomes of poor farmers by enabling them to access new and higher-value markets.Many of the rural poor in developing countries rely on a diverse range of little-known crops for food security and nutrition. These are often neglected by scientists and are hence referred to as 'orphan crops'. Commonly described as underutilized or neglected plant species, orphan crops can be identified by the following characteristics: a) they are locally abundant in developing

countries; however, they are globally rare; b) there is scant scientific information and knowledge about them, and c) their use is limited relative to their economic potential (Gruere*et al*, 2016). Although orphan crops are important to rural livelihoods, particularly in poor areas, they have been largely overlooked by the research community. The majority of orphan crops are locally maintained because they are well adapted to the low-input conditions typical of marginal areas.

However, few studies have been conducted on orphan crops such as the works of Nmadu and Adeyemi(2012) on knowledge levels and assumed impact of alternative uses of orphan crops on income and poverty levels in Kwara State, Nigeria; Fufa, Oselebe, Nnamani, Afiukwa and Uyoh (2021) on Systematic Review on Farmers' Perceptions, Preferences and Utilization Patterns of Taro (*Colocasia Esculenta*) for Food and Nutrition Security in Nigeria and Ye and Fan (2020) on Orphan crops and their wild relatives in the genomic era. In view of this, much or little of such studies seems not to have been conducted on the assessment of farm-level preferences and utilization of selected orphan crops by farmers in Ebonyi State, Nigeria. It is against this background that the study is said to assess farm-level preferences and utilization of selected orphan crops by farmers in Ebonyi State, Nigeria and give answers to the following research questions: What are the socio-economic attributes of the farmers? What are the selected orphan crops grown by the farmers in the study area? What are the preferences and utilization of the selected orphan crops grown by the farmers in the study area? What are the determinants of preferences for selected orphan crops among the farmers?

The broad objective of the study was to assess farm-level preferences and utilization of selected orphan crops by farmers in Ebonyi State, Nigeria. The specific objectives are to: describe the socio-economic attributes of the farmers;identify and classify the available orphan crops grown by the farmers in the study area;analyze the preferences to cultivate, consume and utilize the selected orphan crops in the study area; and assess the determinants of preferences for selected orphan crops among the farmers.This study aims to provide valuable insights into the preferences and utilization of orphan crops, highlighting their potential benefits and opportunities. By exploring the nutritional, medicinal, economic, fertility, and climate resilience values of these crops, this study can inform policies and programs that promote their cultivation and utilization. Ultimately, the findings of this study can help unlock the potential of orphan crops to improve the livelihoods of rural communities and contribute to a more sustainable food system.

2. METHODOLOGY

The study was conducted in Ebonyi State, Nigeria. Ebonyi State is made up of 13 Local Government Areas, namely:Abakaliki, Afikpo North, Afikpo South, Ebonyi, Ezza North, Ezza South, Ikwo, Ishielu, Ivo, Izzi, Ohazara, Ohaukwu, and Onicha. Ebonyi State has a population of about 2,173,501 people, out of which about 85% reside in the rural areas (NPC, 2006). The state is bounded by the Cross River on the East, Enugu on the West, Benue on the North and Abia State on the South. Geographically, the State lies within latitude $7^{o}30^{1}$ and $8^{o}30^{1}$N and Longitude $5^{o}40^{1}$ and $6^{o}45^{1}$E, occupying an area of approximately 5,932km^{2}. The general vegetation consists of the woodland savanna zone characterized by a mixture of savanna and semi-tropical forest. The soil is generally clay loam.The temperature of the area is 25^{o}C at its minimum and 32^{o}C at its maximum. As an agrarian State, 85% of the populations dwell in the rural areas and 70% engage in farming activities which include taro and acha (EB-MANR, 2011).



Figure 1: Map of Ebonyi State

Sampling Technique

Multistage sampling procedure was employed in the selection of respondents. The State was first be stratified along the existing agricultural zones of North, Central and South. Secondly, all the three (3) zones (North, Central and South) were purposively selected based on the observed high level of agricultural activities associated with the area especially in crop production. The next stage involved the purposive selection of two (2) LGAs from the 3 zones already sampled to make a total of 6 LGAs based on the level of crop production in the area. Finally, out of the 6 LGAs sampled there was random selection of 240 crop farmers drawn from the list of registered farmers that was obtained from EBADEP.

Data Collection

Primary data were used for the study. Primary data were collected through the use of structured questionnaire and augmented with interview schedule.

Data Analysis

The analytical techniques such as descriptive and inferential statistics were employed to analyze the objectives of this study. Descriptive statistics such as frequency counts, means and percentages were used to achieve objectives i and ii. Objective iii and iv were actualized using mean score analysis derived from a four-point Likert scale.

Model Specifications

Mean Score Analysis

This was used to achieve objectives iii and iv.

$\bar{X} = \sum \frac{fx}{N}$

where;

$\bar{X}$ = mean score

$\sum$ = summation

x = likert value

f = frequency
N = number of respondents.
Decision point for the five-point likert type rating scale;
4= strongly agree, 3 = agree, 2 = disagree, and 1 = strongly disagree.
$X = \frac{4+3+2+1}{4} = \frac{10}{2} = 2.5$
This implies that using 2.5 as a decision point, any item that has a mean score less than 2.5 was rejected, while those with a mean score of 2.5 and above were accepted

3. RESULTS AND DISCUSSION

Socio-economic Characteristics of the Farmers

This section explains the socio-economic characteristics of the farmers in the area. The socio-economic characteristics were sex, age, marital status, years spent in formal education, household size, farm size, farming experience, annual income and membership of cooperative societies. The results were presented in Table 1. The results of data analysis showed that the majority (74.1%) of the farmers were male, while a few (25.9%) were female. This implies that male farmers dominated the area. However, since most of the orphan crops are not staple crops, it is likely to be farmed by females, hence resources are in decline inthe utilization of orphan crops. The involvement of more males than females corroborate the report of Devereux and Sussex (2019) that men perform certain labour-intensive operations with greater skill than women. The findings also agree with the result of Debebe (2021), who found that most of the rural farm household heads were males.

The results showed that about 49.6% of the farmers were between the ages of 41- 60 years, while the least (2.2%) were above 60 years of age, with a mean age of 44 years. This showed that most of the respondents were middle-aged. The findings imply that they are still within the active, productive work force, energetic, and innovative to participate more in the hurdles involved in farm business. This finding conformed to the findings of Amaechi and Okafor (2018), which inferred that most of the farmers in Nigeria were still within their active and productive age of between 41-60 years. These findings also conform to the works of those reported by Babatunde, Omotesho and Sholotan (2017), which showed that the majority (80%) of the rural farm household heads were in their middle age of 41 to 55 years. The results of the analysis on marital status revealed that the majority (71.4%) of the farmers were married, while the least (2.7%) of the farmers were divorced. This means that farmers who are married were more involved in farming activities than the unmarried ones. The result implies that farming is also more attractive to married couples who are engaged in various social and economic commitments. Such commitments include: ensuring food availability for family members, better housing, and education for children, clothing and the acquisition of better health services. All things being equal, the greater the responsibility, the higher the ambition, which in the long run could lead to sourcing means for greater productivity and rewards. However, this finding suggests that the high percentage of married people calls for re-introduction of orphan crops to enhance food security. This conforms to the work of Nwoye and Nwalieji (2019) that most (85%) of farmers in Anambra State are married. This assertion also supported the views of Chidi (2015), that married men and women have greater household responsibilities and most likely struggle to meet their household food demands.

The findings on household size have implications for orphan crop production. With a mean household size of 8 persons, farming households may have an advantage in terms of labor supply for orphan crop production. According to Valdes, Anriquez, Azzari, Covarrubias, Davis, Digiuseppe, Essam, THertz, Paula de la, Quinones, Stamoulis, Winters and Zezza, 2020), large household sizes can contribute to household labour supply, potentially benefiting

agricultural production. However, the study also notes that large household sizes can increase per capita food expenditure, potentially leading to food insecurity. This could have implications for households relying on orphan crops as a primary source of food and income. The disparity in mean household size between this study (8 persons) and earlier findings by Odoh, Nwibo and Odom (2009) (5 persons) may be attributed to regional or cultural differences. The result of farming experience highlights the significance of experience in agricultural productivity and efficiency. With a mean farming experience of 19 years and a substantial proportion of farmers having 21-30 years of experience (47.6%), the respondents demonstrate a high level of expertise in farming. This experience is likely to enhance their output performance, as they have developed a deeper understanding of farming practices, climatic conditions, and resource allocation. The positive impact of farming experience on productivity and efficiency is well-supported in the literature. According to Amos (2013) and Onubuogu (2013), experienced farmers are more efficient, have better knowledge of climatic conditions, and are better equipped to allocate resources effectively, leading to more profitable enterprises. In the context of orphan crop production, the experience of farmers can be particularly valuable in addressing the unique challenges associated with these crops. Experienced farmers may be better equipped to adapt to the specific needs for orphan crop production, optimize their production practices, and mitigate potential risks.

The findings on educational attainment have significant implications for orphan crop production and the adoption of agricultural innovations. With a mean educational level of 13 years and a considerable proportion of farmers holding WAEC/GCE certificates (28.9%), the respondents demonstrate a relatively high level of literacy. This literacy rate is likely to facilitate access to information on agricultural programs, including those related to orphan crops. The positive impact of education on agricultural productivity and innovation adoption is well-documented. According to Mano *et al.* (2018), education exposes farmers to the right methods of resource use and management, which can lead to improved productivity and sustainability. Education can play a crucial role in enhancing farmers' ability to access and utilize relevant information, adopt new technologies, and improve their productivity and income. The finding that most farmers in the study area are literate, as also reported by Aneke and Alio (2018) in Enugu State, suggests that they may be more receptive to agricultural innovations and programs aimed at promoting orphan crop production. The result of farm size reveals that the majority of farmers in the study area are smallholder farmers, operating on relatively small farm sizes, with a mean farm size of 2 hectares. The fact that 45.9% of farmers have farm sizes between 3.1 - 4 hectares, and the least (6.1%) have above 4 hectares, suggests that most farmers have limited landholdings. This is consistent with the definition of smallholder farmers, who typically operate on less than or equal to 1-2 hectares of farmland. The small farm size could be attributed to various factors, such as the land tenure system predominant in the area or the increasing population, which may lead to land fragmentation. This finding is in line with Adeyemo (2019), who reported that the majority of farmers in Ekiti State are small-scale farmers operating on small farm sizes.

Result of farmers' annual income reveal that the majority of farmers earn relatively low incomes, with a mean annual income of ₦346,259. The fact that 27.9% of farmers earn between ₦301,000 - ₦400,000, and only 2.2% earn ₦701,000 and above, suggests that most farmers struggle financially. This low-income level can have far-reaching implications for farming households, including limited capital investment, reduced productivity, and increased poverty. According to the Food and Agriculture Organization (2018), low income can adversely affect both farming and non-farming households' production levels. This finding is consistent with Egwu (2019), who noted that many people in Ebonyi State, Nigeria, are poor

due to low incomes earned from farming activities. The study also suggests that the small farm sizes of the farmers may be a contributing factor to their low-income levels. The result of membership of cooperative society reveals that the majority (53.6%) of farmers do not belong to any cooperative society, while 46.4% are members. This is significant because membership in cooperative societies can provide farmers with numerous benefits, including access to knowledge, inputs, labour, and credit facilities. By belonging to a cooperative society, farmers can share knowledge on modern techniques for cultivating orphan crops, purchase inputs in bulk, and collaborate on labour. Additionally, cooperative society can facilitate the exchange of information on various forms of orphan crops and their diverse uses, enhancing production efficiency and market value. The finding that most farmers do not belong to cooperative society implies that they may not have access to these benefits, particularly access to credit facilities. As noted by Nwoye and Nwalieji (2019), cooperative societies can offer farmers easy access to credit facilities, which can enhance production and boost productivity. The lack of access to credit facilities can limit the ability of farmers to invest in their farms, adopt new technologies, and improve their productivity. This can have significant implications for the production and marketing of orphan crops, which may require specific inputs, techniques, and investments.

Table 1: Distribution of the Farmers According to their Socio-Economic Characteristics

Variables	Frequency (N=240)	Percentage (%)	Mean ($\bar{X}$)
Sex (Dummy)			
Male	178	74.1	
Female	62	25.9	
Age (Years)			
≤20	53	22.0	
21-40	63	26.2	
41-60	119	49.6	
Above 60	5	2.2	**44**
Marital status			
Single	27	11.4	
Married	171	71.4	
Widowed	32	13.3	
Divorced	3	1.2	
Separated	7	2.7	
Household size (Number)			
1-4	42	17.5	
5-8	104	43.2	
9-12	54	22.7	
13-16	28	11.6	
>16	12	4.9	**8**
Farming Experience (Years)			
≤10	38	15.8	
11-20	59	24.7	
21-30	114	47.6	
Above 30	29	11.9	**19**
Educational level (years)			
FLSC (1-6)	35	14.6	
WEAC/GCE (6-12)	69	28.9	
OND/NCE (13-14)	53	22.2	
HND/B.Sc (15-18)	61	25.2	

M.Sc (19-21)	14	5.7	
Ph. D (22-24)	8	3.4	**13**
Farm size (Ha)			
≤1	24	9.9	
1.1-2.0	31	12.9	
2.1-3.0	60	25.2	
3.1-4.0	110	45.9	
Above 4	15	6.1	**2**
Annual Income (Naira)			
≤100,000	25	10.6	
100,001-200,000	30	12.6	
200,001 -300,000	40	16.8	
300,001-400,000	67	27.9	
400,001-500,000	30	12.3	
500,001-600,000	24	9.9	
600,001-700,000	18	7.7	
700,001 and above	5	2.2	**346, 259**
Membership of Cooperative Society			
Yes	111	46.4	
No	129	53.6	

Source: Field survey, 2024

Selected orphan crops grown by the farmers in the study area

This section identifies different selected orphan crops grown by the farmers in the study area. The result obtained is presented in Table 2. The findings on orphan crop production reveal that the major orphan crops grown by farmers in the study area are bambara groundnut (99.2%), cowpea (98.3%), sweet potato (97.9%), and African rice (91.7%), among others. This suggests that these crops are widely cultivated and potentially valuable to local households.This finding supports Onyeka *et al.* (2014) observation that orphan crop production is often regarded as an informal activity by researchers and policymakers. As a result, targeted efforts are needed to promote the cultivation, consumption, and commercialization of orphan crops, leveraging their potential to improve food security and livelihoods.

Table 2: Percentage Distribution of the Respondents according to the selected orphan crops grown by the Farmers in the Study Area

Orphan Crops	Frequency (N= 240)	Percentage (%)
African rice	220	91.7
Amaranth	192	80.0
Bambara groundnut	238	99.2
Cowpea	236	98.3
Pigeon pea	154	64.2
Acha	118	49.2
Taro	189	78.8
Sweet potato	235	97.9
Breadfruit	200	83.3

Source: Field Survey, 2024 *Multiple Responses Recorded

Preferences and Utilization of the Selected Orphan Crops in the Study Area

Mean score distribution was used to achieve the preferences and utilization of the selected orphan crops in the study area. The result is as shown in Table 3. The findings on preferences and utilization of selected orphan crops reveal that sweet potato ($\bar{X}$=4.8) and cowpea ($\bar{X}$=4.1) are the most preferred crops, followed by bambara groundnut, African rice, and others. In terms of utilization, breadfruit ($\bar{X}$=4.9), sweet potato ($\bar{X}$=4.5), cowpea ($\bar{X}$=4.4), and bambara groundnut ($\bar{X}$=4.0) are the most widely used. The high preference and utilization of these orphan crops can be attributed to their nutritional value and potential health benefits. As reported by Cruz (2014), many orphan crops are rich in nutrients, have low free sugar, and low glycemic content, making them suitable for diabetic patients. Moreover, orphan crops like acha have the potential to reduce hunger and malnutrition, particularly during times of food scarcity.

Table 3: Mean score Distribution on Preferences and Utilization of the Selected Orphan Crops in the Study Area

Orphan crops	PREFERRED		UTILIZED	
	Mean ($\bar{X}$)	Decision Rule ($\bar{x}$ = 3.0)	Mean ($\bar{X}$)	Decision Rule ($\bar{x}$ = 3.0)
African rice	3.6	Accepted	2.2	Rejected
Amaranth	3.2	Accepted	2.3	Rejected
Bambara groundnut	3.9	Accepted	4.0	Accepted
Cowpea	4.1	Accepted	4.4	Accepted
Pigeon pea	3.0	Accepted	1.8	Rejected
Acha	3.0	Accepted	2.7	Rejected
Taro	3.1	Accepted	2.6	Rejected
Sweet potato	4.8	Accepted	4.5	Accepted
Breadfruit	3.4	Accepted	4.9	Accepted

Source: Field Survey, 2024

Forms or Morphology of Utilization of Orphan Crops.

The forms or morphology of utilization of orphan crops were analyzed in this section. The utilization forms considered were food, feeds, medicine, spices, fruits and vegetables. The result is presented in Table 4. The results of the analysis showed that African rice, bambara groundnut, buckwheat, acha, taro, sweet potato and breadfruits were mainly used as food. Furthermore, pigeon pea is used as a fruit, while amaranth and cowpea were mainly used as vegetables in the study area. This implies that most of the orphan crops were mainly used as food, fruits or vegetables. According to Ebert (2014), orphan crops provide food and income for farmers in the poorest regions of the world, mainly in Africa, Asia, Central and South America, and Oceania, where they are adapted to local conditions and act as important staples in local diets.

Table 4: Percentage Distribution of the Farmers Based on the Forms or Morphology of Utilization of Orphan Crops

Orphan crops % Variation	Food 92%	Feeds 80%	Medicine 72%	Spices 52%	Fruits 8%	Vegetable 32%
African rice	200 (83.3)	30 (12.5)	10 (4.2)	-	-	-
Amaranth	-	50 (20.8)	40 (16.7)	20 (8.3)	-	130 (54.2)
Bambara groundnut	180 (75.0)	10 (4.2)	-	-	-	50 (20.8)
Cowpea	80 (33.3)	-	-	-	-	160 (66.7)
Pigeon pea	60 (25.0)	30(12.5)	-	-	150 (62.5)	-
Acha	170 (70.8)	46 (19.2)	-	24 (10.0)	-	-
Taro	195 (81.2)	15 (6.3)	20 (8.3)	10 (4.2)	-	-
Sweet potato	235 (97.9)	5 (2.1)	-	-	-	-
Breadfruit	220 91.7)	15 (6.3)	5 (2.1)	-	-	-

Source: Field Survey, 2024; **Numbers in brackets were percentages (%)*Multiple Responses Recorded**

Determinants of Preferences for Selected Orphan Crops among the Farmers

The determinants of preferences for selected orphan crops among the farmers were considered in this section and the results obtained were presented in Table 5. The findings on preferences and utilization of selected orphan crops reveal that sweet potato ($\bar{X}$=4.8) and cowpea ($\bar{X}$ = 4.1) are the most preferred crops, followed by bambara groundnut, African rice, and others. In terms of utilization, breadfruit ($\bar{X}$=4.9), sweet potato ($\bar{X}$=4.5), cowpea ($\bar{X}$ = 4.4), and bambara groundnut ($\bar{X}$=4.0) are the most widely used. The high preference and utilization of these orphan crops can be attributed to their nutritional value and potential health benefits. As noted by Cruz (2014), many orphan crops are rich in nutrients, have low free sugar, and low glycemic content, making them suitable for diabetic patients. Moreover, orphan crops like acha have the potential to reduce hunger and malnutrition, particularly during times of food scarcity. According to Vietmeyer *et al.* (2016), Africa's native crops, including orphan crops, can be effective tools in fighting hunger on the continent. The study highlights the importance of promoting and supporting the production and utilization of orphan crops, not only for their nutritional value but also for their potential to improve food security and livelihoods in the study area.

Table 5: Percentage Distribution of the Farmers Based on the Determinants of Preferences for Selected Orphan Crops.

Determinants	Mean($\bar{X}$)	Decision Rule ($\bar{X}$ = 3.0)
Nutritious	4.8	Accepted
Resilient to climate variability	2.8	Rejected
Improves soil fertility	3.8	Accepted
Health benefits	4.6	Accepted
Tolerant to diseases and pests	2.7	Rejected
Adaptable to extreme soil conditions	3.6	Accepted
Food security	4.2	Accepted
Compatible with the agro ecology of the area	1.8	Rejected
Can be processed into different products	4.0	Accepted
Low cost of production	3.4	Accepted
Easy to cook	4.4	Accepted
Has a long shelf life	4.0	Accepted
Has high market value	3.0	Accepted

Source: Field Survey, 2024

4 CONCLUSION AND RECOMMENDATIONS

The study concludes that farming in the study area is mostly undertaken by male farmers who are in their prime age and they are mostly small-scale farmers. However, it was established that the major orphan crops grown by the farmers in the study area were bambara groundnut (99.2%), cowpea, sweet potato and African rice, while sweet potato and cowpea were the major Preferred orphan crops in the study area. Moreover, the most utilised orphan crops in the area were breadfruits, sweet potato, cowpea and bambara groundnut. The study provides the following policy recommendations based on the findings of the study. Government agencies should develop targeted policies and interventions that support the production, processing, and marketing of orphan crops.Extension services and NGOs should provide training and capacity-building programs for farmers on modern production techniques, processing, and marketing of orphan crops.Private sector organisation's should provide market linkages, quality inputs, and credit facilities for orphan crop farmers.

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