

CULTURAL PRACTICES AND POST-HARVEST HANDLING OF SELECTED NEGLECTED FOOD CROPS IN SOUTH-EAST AND SOUTH-SOUTH NIGERIA

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ABSTRACT

The study was conducted to assess cultural practices and post-harvest handling of some selected neglected food crops (bambara nut, bread fruits and bush-mango) in South-east and South-south Nigeria. The specific objectives of the study were to; identify the cultural practices of selected neglected crops; identify the post-harvest handling procedure of the selected neglected crops; identify uses of other parts of the neglected crops apart from the food storage organs and investigates the medicinal value of selected neglected crops. A purposive and snow-ball sampling procedure was used to sample 120 farmers of selected neglected crops in South-east and South-south Nigeria (Akwa-Ibom, Ebonyi and Rivers). A well-structured questionnaire was used to obtain information from the respondents and presented using percentage and mean. The result showed that the cultural and agronomic practices for the neglected crops included; nursery (66.7%), intercropping (79.2%), fertilizer application (66.7%) and weeding (100%). The farmers use the neglected crops as soup, chips, flour, and food by boiling or roasting. Processing activities done before storage include fermentation, breaking of the pod, sun drying and cleaning of the crops without water. The method of storage showed that 25% used nylon, 65% used bags and 10% used air tight container. The farmers made use of; leaves of neglected food crops for animal feeds formulation, fermented fruits for organic manure, and stems and branches for timber woods for building and construction. Also, farmers used some of the neglected tree crops for treating fever, stomach upset and diabetes. Also, it is used to boost blood level, antibiotics, pile treatment and prevention of heart failure. The study recommended that Research institutes, ADPs and other related NGOs should work in collaboration to train the farmers on modern methods of post-harvest handlings of crops in the study area. Also, policy maker should formulate policy that will encourage the production of neglected food crops in large quantity.

Key words: agronomic practices, processing, storage, neglected food crops

INTRODUCTION

Nigeria is a country that is blessed with productive soil and conducive climate that supports the production of variety of food crops in large quantity but most of these food crops are neglected and underutilized. Little or no attention is given to the neglected crops in terms of research, they are also known with poor agronomic practices and subsistence production level leading to under estimation and under exploitation of the potential value of the crops (Olayemi *et al.*, 2021). According to Idowu (2009) neglected crops receive little research attention, poor commercialization and marketing, and lack of effective policy frame works for harnessing their potentials in Nigeria. While many crops are underutilized in Nigeria fewer crops such as maize, rice and wheat are also over utilized. Over concentration on fewer food crops for consumption and other useful purposes result to loss of some of these over used crops. Jose (2019) reported that our over reliance on fewer species of staple food to feed ourselves can lead to increase in loss of biodiversity for food and agriculture which puts food security and nutrition at risk. Also, Watson

(2019) confirmed that the health of ecosystems on which we and other species depend is deteriorating more rapidly than ever and that, we are eroding the very foundation of our economies, livelihoods, food security, health and quality of life worldwide (Olayemi *et al.*, 2021). Industrialization and urbanization have also led to destruction of many valuable tree crops and plants in the forest, without any attempt on agronomic practice to ensure continuity which results in extinction of remarkable number of tree crops and plants. On this note, Ibrahim *et al.* (2022) stated that Nigeria is among the highest rates of primary forest deforestation and more than half of such forests have been lost. They added that agricultural practices, timber exploitation, charcoal production and fire wood collection are the causes of deforestation. Human population is also increasing rapidly and the rate of plant extinction is increasing as well, more than 90% of crop varieties have disappeared from farmers' fields (FAO, 1999). The reduction in plant species is an indicator of threats to the capacity of the world to produce food for ever growing population (Spriggs, 2003). Elemasho *et al.* (2022) stated that there will be an increase in

demand for food world widely by 2050 and the demand for food may be greater than available quantity of food. Meaning that food will be insecure, and to avoid food insecurity more potentials in agriculture is needed to be utilized. Olayemi *et al.* (2021) stated that if importance of the neglected and underutilized crops can be realized, the potentials for agriculture and rural development can be unlocked.

There are many indigenous crops such as African walnut, sweet melon, and pigeon pea that can improve food security level and increase farmers' income in developing countries such as Nigeria but not given adequate attention due to the promotion of staple food such as rice and maize and poor agronomic practices attached with the production of some neglected food crops (Karaye *et al.*, 2017). In addition, some of these crops are also difficult to process, for example, the seed extraction in bush-mango is time consuming and it could be among the reasons for neglecting the food crops. Therefore, the crops remain underutilized and not even known due to little or no research documentation on it.

Cultural practices are traditional agricultural methods used to enhance crop productivity through conservation of water and soil to improve crop productivity by reducing weeds, pests and diseases. They are simple to practice and do not require any formal education or the use of machines. Examples are bush fallowing, mulching, weeding, crop rotation, intercropping and use of organic manure. However, traditional practices are known with challenges such as time consumption, laborious, low efficiency and lack of quality assurance (Oyeronke *et al.*, 2015). The traditional practices are common in crop production in Nigeria and this has made farming laborious and unprofitable. Also, Karaye *et al.* (2017) reported that poor management practices are responsible for low yield of crops in Nigeria and thus make farming to be physically strenuous and economically unrewarding in nature. This could be the reason farmers neglect the production of some crops.

Post-harvest losses are major challenges of food security in Nigeria, the rate of food losses is higher in all levels of post-harvest handling due to inadequate storage facilities and low levels of processing technology. Ijioma (2012) also reported that, due to poor post-harvest handling, agricultural productivity which has been below thresholds in the country making food, and fiber insufficient to feed the rapid growing population. Most neglected crops are still cultivated and processed in traditional ways. It is on this basis that this study assessed the cultural practices and post-harvest handling of selected neglected food crops in South-east and South-south Nigeria.

The specific objectives were to identify the cultural practices of selected neglected crops in the study areas, the post-harvest handling procedure of the selected neglected crops, and the uses of other plant parts of the neglected crops apart from the food storage organs, as well as to investigate the medicinal value of selected neglected crops.

METHODOLOGY

The study was carried out in South-East and South-South Nigeria: Akwa-Ibom, 4.9057° N, 7.8537° E (Nigeria Investment Promotion Commission, 2020); Ebonyi, 6.2649° N, 8.0137° E (Ebonyi State Government, 2021); and Rivers, 4.8396° N, 6.9112° E (National Fadama (III) Development Project Rivers State, 2012) in May 2021. The population for the study involved producers of the selected neglected crops (bambara nut, bread fruits, and bush-mango). A multistage-sampling procedure was used for this study. The first stage involved purposive selection of three states, two states from the south-south (Akwa-Ibom and Rivers States) and one state from the South-East (Ebonyi) where the three selected crops (bambara nut, bread fruits and bush-mango) are still found. The second stage involved liaising with Agricultural Development Programme (ADP) in each state through their extension agents for the selection of four local government in a state where the selected crops are still grown. A total of 12 Local Government Areas (LGA) (Abak, Ibiono-Ibom, Itu, Oruk-Anam, Ezza-South, Ikwo, Ishielu, Ohankwu, Degema, Abua-Odual, Ahoda-East, and Asari-Toru) were selected in the three states. A community where the selected crops were cultivated was selected from each LGA, thus make four communities in a state and 12 communities in all three states (Ikot Obong, Use Ikot Ubo, Ema Itam, Nket Ikot Ubo, Amagu, Amokpo, Ishiagu, Amike, Ilelema, Otari, Ula-Ehuda and Abalama). In each of the community snow-ball sampling procedure was used (because only few farmers cultivated the selected neglected crops in a community) to sample 10 farmers for all the selected crops from each community, and a total of 40 farmers in a state and 120 respondents in the three states selected. Data were collected from the respondents through the use of questionnaire. The questionnaire contained relevant questions based on the objectives of the study. Descriptive statistics such as frequency, percentage and mean were used to present the data.

RESULTS AND DISCUSSION

Cultural Practices of Selected Neglected Crops

Table 1 shows results on kinds of neglected food crops produced by farmers and 20.8% farmers of the neglected food crops produced bambara nuts, while 25% were farmers of bread fruits and 54% were farmers of bush-mango. This implies that less than half of the population of the respondents produced bambara nuts and bread fruits, this could be related to the extent of the crops being neglected in the study area,

Table 1: Distribution of farmers according to the kinds of neglected food crops produced in the study area

Neglected food crops	(%)
Bambara nut	20.80
Bread fruit	25.00
Bush-mango	54.20
Total	100.00

Field Survey (2021)

which could lead to loss of traditional knowledge on the crops. This supports FAO (2017) that neglected food crops are planted less often by farmers, which could lead to loss of traditional knowledge.

Cultural Practices of Selected Neglected Crops

Table 2 shows that 87.6% of the farmers of bush-mango (48.3%) and bread fruits (18.3%) in the study area cultivated the selected food crops in which cultivated bush-mango are mainly agricultural breed varieties, with lower timber quality and seed quality. Only 12.5% of the farmers of bread fruits (6.7%) and bush-mangoes (5.8%), respectively, do not cultivate the crops. However, the crops grow as wild crops. This implies that some of these valuable tree crops such as wild bush-mango trees were not commonly found in farmer’s possession again, this could be due to deforestation and disappearing of the trees. If preventive measure is not taken through tree replanting, wild bush-mangoes will not be found again in the zone in the future. This supports the findings of Watson (2019) that the health of ecosystems on which we and other species depend is deteriorating more rapidly than ever, he added that, we are eroding the very foundation of our economies, livelihoods, food security, health and quality of life worldwide.

Cultural Practices of Selected Neglected Crops

Table 3 shows the years of growth of selected neglected food crops in which 20.8% of the neglected crops are annual plant which is bambara nuts while 79.2% of the neglected crops are perennial plants and they are bread fruits (25%) and bush-mango (54.2%). The annual plant completes its life cycle from germination to the production of seeds within one growing seasons (Pohranicni, 2022), while perennial plant lives more than two seasons or years (Yash and Derrick, 2021). All tree plants are perennial and can survive more than thirty years. Meaning, bush-mangoes and bread fruits are permanent trees. This corroborates with Plant for a Future (2021) who described bush-mango as an evergreen tree growing to 30.00 m (98.00 ft) by 30.00 m (98.00 ft).

Table 2: Distribution of farmers of neglected food crops according to the crops being cultivated or grows naturally

Neglected food crops	Cultivated (%)	Not cultivated (%)
Bambara nut	20.80	0.00
Bread fruit	18.30	6.70
Bush-mangoes	48.30	5.80
Total	87.50	12.50

Field Survey (2021)

Table 3: Distribution of farmers according to the years of growth of selected neglected food crops produced

Crops	Types	(%)
Bambara nut	Annual	20.80
Bread fruit	Perennial	25.00
Bush-mangoes	Perennial	54.20
Total		100.00

Field Survey (2021)

Table 4: Distribution of farmers according to the sources of seedlings/seeds of neglected food crops produced

Sources of seedlings/seeds	(%)
Extension agents	1.40
Agro dealers	19.10
From previous season	43.60
Others (friends, relatives and markets)	35.80

Field Survey (2021)

Table 5: Distribution of farmers according to the period of planting of selected neglected food crops

Period of planting	Crops	(%)
March/April	Bread fruits	18.30
	Bush-mango	47.50
May/June	Bambara nuts	20.80
	Bread fruits	6.70
No fixed month/grows wild	Bread fruits	6.70
	Bush-mangoes	5.80

Field Survey (2021)

Cultural Practices of Selected Neglected Crops

The results on source of seedlings to farmers are presented in Table 4 and 43.6% of the farmers of neglected food crops got the seedlings or seeds for the production or planting from the previous season, while 35% of the farmers sourced for seeds or seedling from others (friends, relatives and purchase from markets) and 19.1% of the farmers bought the seeds or seedling from agro dealers and only few 1.4% of the farmers sourced for seeds or seedlings through extension agents. This means that there is insufficient number of extension agent’s ratio to the agricultural stake holders in the study area. Ibirogb (2018) also confirmed the inadequacy of human resources in extension delivery system. They stated that the ratio of extension officers to farmers is insufficient and that the ratio still remains one officer to two hundred farmers (1:200) in Nigeria.

Cultural Practices of Selected Neglected Crops

Table 5 shows that many of the farmers (65.8%) that cultivated the tree plants, (bread fruits and bush-mango) planted in March/April. Bambara nuts are planted in May/June by 20.8% of the farmers. The remaining 12.5% of the farmers were bread fruit and bush-mango farmers that did not cultivate the tree plants but the trees grow naturally. The reason for the months of planting could be associated to the rainy season which provides adequate water for the planted crops for proper germination. This agrees with Daily Trust (2019) that rainy season is characterized by low temperature and any crop that requires such climate condition for germination should be widely cultivated.

Cultural Practices of Selected Neglected Crops

Table 6 depicts that 20.8% of bambara nuts farmers planted the crops directly on the farm no nursery activities were involved. However, bread fruits farmers (18.3%) and bush-mango farmers (48.3%) raised the seedlings from nursery before transplanting it to farms, while the remaining farmers of bread fruits (6.7%) and that of bush-mango (5.8%)

Table 6: Distribution of farmers according to other important agronomic practice of selected neglected food crops

Other important agronomic practice	Crops	Yes (%)	No (%)
Nursery	Bambara nut	0.00	20.80
	Bread fruit	18.30	6.70
	Bush-mango	48.30	5.80
	Total	66.70	33.30
Intercropping	Bambara nut	0.00	20.80
	Bread fruit	25.00	0.00
	Bush-mango	54.20	0.00
	Total	79.20	20.80
Manure/fertilizer	Bambara nut	0.00	20.80
	Bread fruit	18.30	6.70
	Bush-mango	48.30	5.80
	Total	66.70	33.3
Weeding	Bambara nut	20.80	0.00
	Bread fruit	25.00	0.00
	Bush-mango	54.20	0.00
	Total	100.00	0.00

Field Survey (2021)

met the tree crops growing without any form of nursery practice. All the tree crop farmers (79.2%) (bread fruits (25%) and bush-mango (54.2%), respectively) planted other arable crops (such as maize and cocoyam) with the tree plants (intercropping system). Only 20.8% of bambara nuts farmers’ population did not practice intercropping, most of the bambara nuts farmers reported that bambara nuts do not thrive well especially the pods when intercropped with other crops. About 66.7% of tree crop farmers (bread fruits (18.3%) and bush-mango (48.3%) applied organic manure while 20.8% bambara nuts farmers did not use fertilizer or manure, this supports the findings of Xin *et al.* (2020) that bambara nuts has ability to fix nitrogen in the soil and thrive well in a poor soil condition. All the farmers (100%) weeded their farms as at when due. This implied that farmers of neglected food crops in the area had good knowledge of agronomic practices that can increase productivities of the neglected crops in the study area.

Cultural Practices of Selected Neglected Crops

The result on the sign of maturity of selected neglected food crops is presented in Table 7. The result shows that 54.2% of bush-mango farmers and 25% of bread fruits farmers stated that the fruits fall down naturally from the mother tree at maturity without being plucked. Bambara nuts farmers (20.8%) mentioned discoloration and wilting of the leaves as signs of maturity in bambara nuts. The implication of the findings is to know when harvest should be done to prevent deterioration that follows peak of maturity. This agrees with Directorate Plant Production (2011) that bambara nut plants should be harvested as the plants change color from green to yellow or die off.

Cultural Practices of Selected Neglected Crops

Table 8 presents result on period of harvesting in which 25% of the farmers’ harvested bread fruits in May/June, while 54.2% of bush-mangoes farmers also harvested their crops the same May/June. About 20.8% of bambara nuts’ farmers harvested bambara nuts in November/December. This supports Daily Trust (2018) that bambara nuts takes about 5-6 months to mature after planting in May/June.

Cultural Practices of Selected Neglected Crops

From Table 9, all (100%) farmers of neglected food crops harvested their crops manually. This implies that production of neglected food crops was done in traditional ways. The traditional methods are known for low efficiency and lack of quality assurance. This corroborates with Oyeronke *et al.* (2015) that the traditional methods of crop production have deficiencies such as time consumption.

Post-Harvest Handling Procedure of the Selected Neglected Crops

Table 10 above indicates the unit of measurement for neglected food crops and about 44.2% of the farmers of neglected crops used basin/basket as unit of measurement, and 31.7% of the farmers used custard rubber and only 15% of the neglected crop farmers used bags for measurement, while 9.2% of the respondents used local scale. This implies that the basin and custard rubber are the most common local unit of measurements in the study area that farmers used to measure their yield.

Table 7: Distribution of farmers according to the signs of maturity of selected neglected food crop

Signs of maturity	Selected neglected crops	(%)
Natural falling from the tree	Bread fruits	25.00
	Bush-mangoes	54.20
Discoloration and wilting of the leaves	Bambara nuts	20.80

Field Survey (2021)

Table 8: Distribution of farmers according to the period of harvesting of selected neglected food crops

Signs of maturity	Selected neglected crops	(%)
May/June	Bread fruits	25.00
	Bush-mangoes	54.20
November/December	Bambara nuts	20.80

Field Survey (2021)

Table 9: Distribution of farmers according to the mode of harvesting of selected neglected food crops

Mode of harvesting neglected food crops	(%)
Manually	100.00
Mechanically	0.00
Total	100.00

Field Survey (2021)

Table 10: Distribution of farmers according to the unit of measuring yield of selected neglected food crop

Unit of measurement	Crops	(%)
Basin/basket	Bambara nut	10.00
	Bread fruit	9.20
	Bush-mango	25.00
	Total	44.20
Custard rubber	Bambara nut	4.20
	Bread fruit	10.00
	Bush-mango	17.50
	Total	31.70
Bags	Bambara nuts	6.60
	Bush-mango	8.30
	Total	15.00
Local scale (kg)	Bread fruit	5.80
	Bush-mango	3.30
	Total	9.20

Field Survey (2021)

Post-Harvest Handling Procedure of the Selected Neglected Crops

Table 11 shows that 39.2% of the farmers (bread fruits (25%) and bush-mango (14.2%) practiced fermentation; the breaking of the pod is another activity that is practiced by 20.8% farmers of Bambara nuts and 40% of farmers of bush-mangoes. Also, sun drying is practiced by 20.8% of farmers of bambara nuts and 48.3% of farmers of bush-mangoes before storage while winnowing is done only by bambara nuts producers (20.8%). This revealed that neglected food crops undergo some post-harvest activities before storage.

Post-Harvest Handling Procedure of the Selected Neglected Crops

The result in Table 12 depicted that majority (65%) of farmers of neglected selected food crops used bags for storage and 25% of the farmers used nylon and only few (10%) farmers used airtight container. This implies that the farmers use local storage methods for storage, even though the local storage is not as effective as modern storage system developed by Nigerian Stored Products Research Institute (NSPRI) a reputable research institute with mandate of post-harvest loss reduction. Some of NSPRI storage technologies are zero fly bags, Purdue Improved Crop Storage bags (PICS), hermetic storage (steel drums), and inert atmosphere system (silos) (NSPRI, 2018).

Post-Harvest Handling Procedure of the Selected Neglected Crops

Table 13 shows result on processed neglected food crops into varieties and 54.2% of the farmers processed the neglected crops into soup and 16.7% of the farmers processed the neglected crops into chips and 7.5% of farmers processed neglected crop into flour while 45.8% of the farmers processed neglected crops into food by boiling or cooking the neglected crops. Meaning that the neglected crops can be processed to many useful products through value addition which could also unpin the potentiality of the crops in terms of reducing food insecurity.

Table 11: Distribution of farmers according to the activities before storage of selected neglected food crops

Activities before storage	Crops	Yes (%)	No (%)
Fermentation	Bambara nut	0.00	20.80
	Bread fruit	25.00	0.00
	Bush-mango	14.20	40.00
	Total	39.20	60.80
Breaking pod	Bambara nut	20.80	0.00
	Bread fruit	0.00	25.00
	Bush-mango	40.00	14.20
	Total	60.80	39.20
Sun drying	Bambara nut	20.80	0.00
	Bread fruit	0.00	25.00
	Bush-mango	48.30	5.80
	Total	69.20	30.80
Cleaning/winnowing	Bambara nut	20.80	0.00
	Bread fruit	0.00	25.00
	Bush-mango	0.00	54.20
	Total	20.80	79.20

Field Survey (2021)

Table 12: Distribution of farmers according to the method of storage of selected neglected food crops

Method of storage	Crops	Yes (%)	No (%)
Nylon	Bambara nut	0.00	20.80
	Bread fruit	0.00	0.00
	Bush-mango	0.00	54.20
	Total	25.00	75.00
Bagging	Bambara nut	16.70	4.20
	Bread fruit	0.00	25.00
	Bush-mango	48.30	5.80
	Total	65.00	35.00
Air tight container	Bambara nut	4.20	0.00
	Bread fruit	0.00	25.00
	Bush-mango	5.80	19.20
	Total	10.00	35.80

Field Survey (2021)

Table 13: Distribution of farmers according to the products from processing of selected neglected food crops

Products	Crops	Yes (%)	No (%)
Soup	Bambara nut	0.00	20.80
	Bread fruit	0.00	25.00
	Bush-mango	54.20	0.00
	Total	54.20	45.80
Chips	Bambara nut	9.20	11.70
	Bread fruit	7.50	17.50
	Bush-mango	0.00	54.20
	Total	16.70	83.30
Flour	Bambara nut	5.80	15.00
	Bread fruit	1.70	23.30
	Bush-mango	0.00	54.20
	Total	7.50	92.50
Food (roast or boil)	Bambara nut	20.80	0.00
	Bread fruit	25.00	0.00
	Bush-mango	0.00	54.20
	Total	45.80	54.20

Field Survey (2021)

Post-Harvest Handling Procedure of the Selected Neglected Crops

Table 14 shows that 76.7% of farmers experienced losses during handling and 23.6% of the farmers did not experienced noticeable losses during handling. This finding showed poor post-harvest handling on crops after harvest and this could reduce the farmers' income. Rockefeller Foundation (2015) stated that in a developing country, post-harvest food loss reduces the income of 470 million smallholder farmers and downstream value chain actors by at least 15% and poor income result in poor standard of living.

Table 14: Distribution of farmers according to the losses during handling of the selected neglected food crops

Losses	Crops	Yes (%)	No (%)
during handling	Bambara nut	19.20	1.60
	Bread fruit	20.80	4.20
	Bush-mango	36.70	17.50
	Total	76.70	23.30

Field Survey (2021)

Uses of Other Plant Parts of the Neglected Crops Apart from the Food Storage Organs

Table 15 shows uses of other part of the plant apart from the food storage parts that are still useful to the farmers. About 21% of the farmers made use of pods shaft and leaves of neglected food crops for animal feeds and 30.8% made use of fermented fruits parts of neglected crop for manure, while about 30% of the farmers used the stems of the economic tree for timber purposes. This means that neglected crops in the study area have multipurpose uses.

Medicinal Value of Selected Neglected Crops

Table 16 shows result on medicinal value of selected neglected crops and 8.4% of farmers used some of the neglected food crops for curing fever and 6.9% of the farmers used some of the crops to cure stomach upset, and 8.4% of neglected farmers used the crops to cure diabetes while 2.3% of the farmers used neglected crops to boost blood level, also 6.9% of the respondent used it for antibiotics and 8.4% of the respondents used it for pile treatment and 5.3% of farmers also used it to prevent heart failure.

CONCLUSIONS AND RECOMMENDATIONS

The study has shown that there are cultural practices established by the respondents for the production of the neglected food crops in the study area such as nursery, weeding, manuring and intercropping, post-harvest handling before storage include fermentation, breaking of pods, sun drying and winnowing. The most common methods of storage used for the neglected food crops includes, storing in bags, nylon and air tight containers. The selected neglected food crops are processed to soup, chips, flour, and food. Some parts of the neglected food crop plant such as peels used for animal feeds formulation, fermented mesocarp for manure and stem for timber. Neglected foods crops are also used for medicinal purposes which indicated that the neglected crops were not only used as foods but also have health benefits. Post-harvest technologies especially processing and storage technology should be developed for the selected neglected crops to reduce post-harvest stress and losses so as to encourage the farmers in production of the neglected crops. Research institutes, ADPs and other related NGOs should work in collaboration to train the farmers on modern methods of post-harvest handlings of crops in the study area. Policy maker should formulate policy that will encourage the production of neglected food crops in large quantity so as to increase food production and ensure food security in the nation.

Table 15: Distribution of farmers according to other useful parts of selected neglected food crops and their uses

Uses of other parts	Crops	Yes (%)	No (%)
Pods shaft/leaf for animal feed and forages	Bambara nut	20.80	0.00
	Bread fruit	0.00	25.00
	Bush-mango	0.00	54.20
	Total	20.80	79.20
Fermented fruits for manure	Bambara nut	0.00	20.80
	Bread fruit	25.00	0.00
	Bush-mango	5.80	48.30
	Total	30.80	69.20
Stem for timber	Bambara nut	0.00	20.80
	Bread fruit	25.00	0.00
	Bush-mango	5.80	48.30
	Total	30.80	69.20

Field Survey (2021)

Table 16: Distribution of farmers according to the local medicinal uses of selected neglected food crops

Medicinal uses	Crops	(%)
Leaf for fever treatment	Bread fruit	1.50
	Bush-mango	6.90
		8.40
Stomach upset	Bush-mango	6.90
		6.90
Stems and roots for diabetes	Bread fruit	1.50
	Bush-mango	6.90
		8.40
Boost blood level	Bush-mango	2.20
		2.30
Antibiotics	Bush-mango	6.90
		6.90
Pile treatment	Bush-mango	8.40
		8.40
Heart failure	Bush-mango	5.30
		5.30
		5.30
None	Bambara nut	20.80
	Bread fruit	21.04
	Bush-mango	13.00
		53.40

Field Survey (2021)

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