



The Impact of Public Libraries on Tiv Management Strategies for Postharvest Losses of Cassava in Benue State

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Abstract: The cultural heritage of any people can be redressed through the preserved cultural values tangibly stored and preserved in media and forms retrievable and usable. Audiovisual heritage are quite essential that the public library system must not afford to elude its storage not only for users but also for posterity. Cassava has played an important role as a staple crop in the feeding of the Tiv people. Cassava is the principal source of dietetic food energy for a significant portions of world populace particularly those living in the lowland tropics, and much of the sub-humid tropics. Incidentally, cassava is the sixth most important crop after wheat, rice, maize, potato and barley and is the primary staple for more than 800 million people in the world and it plays a crucial food security role to the populace due to the fact that its matured edible roots can be left in the ground for up to 36 months. Moreover fresh cassava has a very short postharvest storage lifespan and as such, the Tiv people developed different ways of processing it into durable forms soon after harvest, as well as organizing their local markets where the cassava products would be sold. This study therefore, looks at the impact of the public library through the storage of audiovisual materials on Tiv Management Strategies of Postharvest losses of Cassava for the Development of Agriculture in Benue State of Nigeria. The study sampled 377 out of the population of 20,000. The snowball sampling technique was used in selecting the subjects for the study. Mean and standard deviation statistics was used in answering the research questions. The study found that the Tiv people had various strategies they adopted in managing postharvest losses of cassava. However, the public library failed to acquire and store audiovisual materials on these management strategies for postharvest losses of cassava; information that would have been used for improving and reducing postharvest losses of cassava by farmers. It was therefore, recommended that concerned policy makers should make policies that will allow public libraries to acquire store and preserve audiovisual materials on various indigenous knowledge for development to ensue; and for posterity; and that governments and other stakeholders should ensure that the public library sector is adequately funded and manpower is adequately provided as well.

Keywords: Tiv Management of Postharvest Losses, Postharvest Losses, Cassava, Public Libraries, Audiovisual Materials

1. Introduction

The cultural heritage of any people can be redressed through the preserved cultural values tangibly stored and preserved in media and forms retrievable and usable. The photographs people take, videos they shoot, speeches and music they record, capture in bits, every moment of their life,

culture, event and times that inevitably speak volumes of their history. Abrigo and Abrigo (2010) assert that, these media are jealously guarded and relayed, shown and played back for the younger generations. It is a legacy that people would want to impart to their grandchildren, so that the next generation would have the opportunity to understand their heritage. This is the very core of storage and preservation.

Audiovisual heritage are quite essential that the public

library system must not afford to elude its storage not only for users but also for posterity. Cassava has played an important role as a staple crop in the feeding of the Tiv people. The Tiv had different management strategies of postharvest losses of cassava (*Akom or Alogo*) that includes dried cassava chips (*kpor*), *imyorun* or *imorun* (gari) processing, fermented cassava (*akpu*) and production of base (*mtuhem*) among others, which were potent managing postharvest losses of cassava. Public libraries are supposed to be conscious of ensuring that these postharvest losses management strategies are captured, acquired stored in audiovisual format. Moreover, the public library should also ensure that the host communities and users are met with their particular information needs; but if this is not done, then the aim of establishing such libraries will be defeated.

2. Statement of the Problem

Cassava is the principal source of dietetic food energy for a significant portions of world populace particularly those living in the lowland tropics, and much of the sub-humid tropics. Incidentally, cassava is the sixth most important crop after wheat, rice, maize, potato and barley and is the primary staple for more than 800 million people in the world and it plays a crucial food security role to the populace due to the fact that its matured edible roots can be left in the ground for up to 36 months. Moreover fresh cassava has a very short postharvest storage lifespan and as such, the Tiv people developed different ways of processing it into durable forms soon after harvest, as well as organizing their local markets where the cassava products would be sold. Essentially, all these were part of their management strategies for postharvest losses of cassava. Despite these postharvest losses management strategies, the different varieties of food stuffs processed from cassava are threatened to extinction due to the flooding of expensive western food stuffs in the markets; and the indigenous local markets where the products could be sold are not accessible due to lack of good access roads. In addition, these indigenous postharvest losses management strategies seem to be facing total extinction due to lack of documentation and storage of audiovisual materials on them. Apparently, if this is allowed to continue, the consequences cannot be foretold in the near future.

3. Purpose of the Study

The study intends to investigate the impact of the public library through the storage of audiovisual materials on Tiv Management Strategies of Postharvest losses of Cassava for the Development of Agriculture in Benue State of Nigeria. Specifically, the study sought to:

1. Identify Tiv management strategies of postharvest losses of cassava
2. Determined whether public library has impacted on Tiv management strategies of postharvest losses of cassava.
3. Investigate challenges faced by public libraries on storage of audiovisual materials on Tiv management

strategies for postharvest losses of cassava.

3.1. Research Questions

1. What are the Tiv management strategies for postharvest losses of cassava?
2. In what ways does the public library impact on Tiv management strategies for postharvest losses of cassava?
3. What are the challenges faced by public libraries on storage of audiovisual materials on Tiv management strategies for postharvest losses of cassava?

4. Literature Review

4.1. Public Libraries

Public library is a library that is established and managed with public funds. In other words, it is called an omnibus for the single fact that its users and readership is not restricted. Public libraries are established wholly or partly from public funds. They are not restricted to any class of persons in the community but freely available to all. Public libraries serve as intellectual centers as well as recreational centers. They are the venue through which the overall information resources are made freely available to all (Edoka, 2000; Assoh, 2011; Shidi, Aju & Ashaver, 2014).

Information processing and retrieval are the core aims and objectives of librarianship, which warrants adequate coverage at all levels of education and above all service to all users both learned and non-learned. The fundamental mission of a public library is to collect, organize, store or preserve, and provide access to knowledge and information. Apparently, in order to achieve this mission, public libraries preserve a variety of information materials including print materials such as books, monographs, serials and periodicals; and non-print materials such as audio or audiovisual materials such as cassettes, microfiche and films among others. It is the philosophy of public library to ensure that whether the cultural record acquired is contained in books or in electronic formats, the record is preserved and made available for later use.

Public libraries anywhere they are established, is for the purpose of development. They are a reservoir of society's intellectual history, the custodians of people's knowledge and information. Their collection forms the body (theory) of knowledge from which the young members of the society are taught from. Quite so, public library's primary role in the society is to collect information sources of diverse kinds among others. This is their most crucial function of all. It involves among other things collecting information bearing materials from different sources, organizations and sometime even initiating and encouraging programs that would enable them capture traditional, socio-cultural and economic activities as well as appropriate information formats for posterity (Agber & Mngutyô, 2013).

Importantly, among the various formats of information materials the public library acquires, audiovisual materials

are most suitable for meeting the needs of users in Africa particularly in Benue State. This is in line with Agber and Mngutyô (2013); Agber, Ugbagir, Mngutyô and Amaakaven (2014) who reiterated that for developing countries such as Nigeria, audio and audio-visual media are appropriate information formats for capturing information for the people.

Suffice it to say that the public library is established to serve everybody, it therefore, entails that it is established to serve those who cannot read and write alike. Benue State like other African Regions has farmers who cannot read nor write but who need information to develop their agricultural enclaves. Hence these farmers cannot read nor write, the print materials acquired by the public library cannot meet their information needs. Therefore, it will be appropriate only if the public library will acquire audiovisual materials, which will be most suitable in meeting the needs of the indigenous Benue farmers.

4.2. Cassava (*Akom, Akuma or Alogo*)



Figure 1. A Tiv Cassava Farm in Ageva, Vandeikya, Benue – Nigeria.

The term cassava is most likely derived from the Arawak word for bread, *casavi* or *cazabi*, and the term manioc from the Tupi word *maniot*, which French explorers converted to manioc (Lebot, 2009). Moreover, it is not in the least likely to concur with the Tiv people's belief that the term cassava is derived from Tiv word *kasseve*, which means stick-fence it. The Tiv people used to make a ridge round their houses and plant cassava on it; and when the cassava grew up, it became a cassava fence surrounding the house. Agber (2007) reported that a variety of cassava species are found in the Benue Basin including *Aiv-kpenga*, *Pavnya* (pronounced *Panya*) and *Imande*; and that *Panya* was discovered by a Tiv hunter called Adaga from Gaav Megaclan of the Tiv in about 1794 according to oral history. Moreover, other varieties of cassava in Tiv land of Benue State include: Akpu from which akpu are processed, Yakpe, Genyi, Wari and Gyo-Akom among others.

Cassava (*Manihot esculenta* Crantz, Euphorbiaceae, Dicotyledons) is the sixth most important crop after wheat, rice, maize, potato and barley and is the primary staple for more than 800 million people in the world, mostly in the

poorest tropical countries. Cassava plays an essential food security role because its matured edible roots can be left in the ground for up to 36 months. The crop therefore represents a household food bank that can be drawn on when adverse climatic conditions limit the availability of other foods. The variety of foods that are made from the roots and the nutritious leaves are reasons why cassava cultivation is expanding worldwide (Lebot, 2009).

Fresh cassava has a very short postharvest storage life (Karuri, Mbugua, Karugia, Wanda & Jagwe, 2001). Therefore, the Tiv people develop different ways of processing it into durable forms soon after it is harvested, which forms part of management strategies for postharvest losses.

4.3. Management of Postharvest Losses of Cassava

Postharvest priorities across the globe have evolved considerably over the past four decades, from being exclusively technical in their outlook, to being more responsive to consumer demand. Consumer-driven trends which have contributed to this shift include rising incomes in urban areas, changing dietary habits, more women in the work-place, reduced time for meal preparation and growing demand for safety, quality and convenience (Rolle, 2006).

Postharvest encompasses the conditions and situations surrounding the state of the food after separation from the medium and site of immediate growth or production of that food. Harris and Lindblad (1978) asserted that postharvest begins when the process of collecting or separating food of edible quality from its site of immediate production has been completed. The food need not be removed any great distance from the harvest site, but it must be separated from the medium that produced it by a deliberate human act with the intention of starting it on its way to the table.

Apparently, postharvest losses therefore mean any change in the availability, edibility, wholesomeness or quality of the food that prevents it from being consumed by people. Food losses may be direct or indirect. A direct loss is disappearance of food by spillage, or consumption by insects, rodents, and birds. An indirect loss is the lowering of quality to the point where people refuse to eat it.

Essentially, cassava postharvest losses can be defined as both the physical losses such as weight and quality suffered during postharvest handling operations of cassava and the loss of opportunities as a result of inability of producers to access markets or only lower value markets. In pursuance to boost agricultural development in Benue State, postharvest losses must be managed; and to achieve this, the Tiv people developed different management strategies for postharvest losses of cassava.

Cassava has a short lifespan after harvest and as a result, the Tiv people process it into various forms for easy storage as a stratagem for postharvest loss management. These include:

1. Peeling the cassava, slicing it and sun drying known as *Kpor Akom* (Cassava Chips)
2. Peeling the cassava, slicing, sun drying it and grinding

into flour known as *Mwem ma Kpor* (Cassava Flour)

3. Peeling the cassava, grating, squeezing (demoisturizing) it and frying known as *Gari Akom*
4. Slicing the cassava, sun drying and burning it into ashes known as *Mtuhem* (Base) and
5. Peeling the cassava, fermenting, sieving and squeezing it into lumps known as *Akpu* among others methods of processing.

Incidentally, these methods of cassava processing among the Tiv people practiced as strategies for the management of postharvest losses of cassava were passed down from one generation to another orally. The public library owes the people a duty to go into the hinterlands of the Tiv nation in Benue State to collect audiovisual materials on these postharvest losses management strategies. This would have been achieved by capturing of audio narrations of elderly cassava farmers by recording, as well as organizing custodians of the knowledge to shot informative video clips and snap shot for video slides aimed at educating the younger generation and storing the materials for posterity.

4.4. Methodology

The study adopted a survey design, which is the type of design that enables the researcher to collect data from a group of people through questionnaire, interview or observation techniques for the purpose of analysis and subsequent interpretation.

4.5. Population and Sample

The target population of the study was public library staff, library users, and cassava farmers in Tiv speaking local government areas of Benue State. There are 7 public library branches in the Tiv speaking local government areas of Benue State. These are the Benue state Library Board Headquarters in Makurdi and its branches in Gboko, Vandeikya, Katsina- Ala, Gungur, Aliade and Adikpo with about 33 workers (Mngutyô & Amaakaven, 2013). Significantly, the researchers got a hypothetical population of 993 library users and 18,974 cassava farmers making the total population of 20,000.

The sample size of 680 out of the population of 20,000 was drawn using the sample size table, (Emaikwu, 2015). The snowball sampling was adopted in selecting the subjects. This was due to the fact that there is no adequate list of cassava farmers and library users, which could be used as a sampling frame. The researchers visited the entire population of the study in the study area to meet the cassava farmers in their localities and library users in the libraries. They used the Fish Bowl Technique by writing Yes and No for the respondents to choose and those who chose Yes were finally given questionnaire to respond to it. The researchers did this until they arrive at the sample size of 680.

4.6. Instrument for Data Collection

The instrument used for data collection was Questionnaire

constructed by the researchers. Section A of the questionnaire contained respondents' bio-data, which included sex and occupation. Section B consisted of 7 variables of forms or Tiv management strategies for postharvest losses of cassava. Section C also consisted of 7 variables of ways public library has impacted on Tiv management strategies for postharvest losses of cassava and Section D consisted of 5 variables of challenges faced by public libraries in acquisition and storage of audiovisual materials on Tiv management strategies of postharvest losses of cassava in Benue state. The 19 item questionnaire adapted a 4 point rating scale and respondents were asked to respond by ticking the correct or applicable responses (SA) strongly agree, (A) agree, (D) disagree and (SD) strongly disagree.

4.7. Method of Data Collection and Analysis

Apparently, copies of the questionnaire were administered to the respondents in the study area with the aid of three research assistants, who administered and retrieved the questionnaire from the respondents. Consequently, for the cassava farmers who had no western education, the research assistants read the questionnaire to their hearing and gave interpretation in Tiv language, and the options they selected were ticked for them. These research assistants were asked to administer and retrieve the questionnaire through personal contact to avoid delays associated with mailing and multiple filling. Data were analyzed using mean and standard deviations.

4.8. Answers to Research Question

Data was collected using 4 point rating scale instrument. Importantly, on each research question, data were collected on related items in the instrument. The collected data were analyzed using mean and standard deviation. Apparently, any item of the instrument whose mean rating scores was 2.50 and above was considered significant and any item with the mean rating scores below 2.50 was not considered significant.

5. Demographic Information

Demographically, data were collected from 680 Library Staffs, Cassava Farmers and Library Users, out of which 348 were male representing 51.2% while 332 representing 48.8% were female. Apparently, 28 representing 4.1% were library staffs, 376 representing 55.3% were cassava farmers and 276 representing 40.6% were library users.

5.1. Research Question 1

What are the Tiv management strategies for postharvest losses of cassava?

To answer the research question, data were collected on Tiv management strategies for postharvest losses of cassava. The collected data were analyzed and presented in Table 1.

Table 1. Descriptive Statistics of Tiv Management Strategies for Postharvest Losses of Cassava.

Descriptive Statistics	N	Mean	Std. Deviation
Peeling the cassava, slicing it and sun drying known as Kpor Akom (Cassava Chips)	680	2.9221	.80028
Peeling the cassava, slicing, sun drying it and grinding into flour known as Mwem ma Kpor (Cassava Flour)	680	3.1485	.73619
Peeling the cassava, grating, squeezing (demoisturizing) it and frying known as Gari Akom	680	2.8456	.83972
Slicing the cassava, sun drying and burning it into ashes known as Mtuhem (Base) and	680	2.9265	.77357
Peeling the cassava, fermenting, sieving and squeezing it into lumps known as Akpu	680	2.7176	.91606
Peeling the cassava, grating, squeezing (demoisturizing) it, mixing with salt and other ingredients and frying with palm or groundnuts oil known as Kweesi or Akweesa Akom	680	2.8882	.83860
Peeling the cassava, grating, squeezing and sieving the starch and preparing it for food as Kamu Akom	680	2.9500	.79792
Valid N (listwise)	680		

From Table 1, it can be seen that the mean rating scores of all the items are above 2.50. This means that peeling the cassava, slicing it and sun drying known as *Kpor Akom* (Cassava Chips), peeling the cassava, slicing, sun drying it and grinding into flour known as *Mwem ma Kpor* (Cassava Flour), peeling the cassava, grating, squeezing (demoisturizing) it and frying known as *Gari Akom*, slicing the cassava, sun drying and burning it into ashes known as *Mtuhem* (Base), peeling the cassava, fermenting, sieving and squeezing it into lumps known as *Akpu*, peeling the cassava, grating, squeezing (demoisturizing) it, mixing with salt and other ingredients and frying with palm or groundnuts oil

known as *Kweesi* or *Akweesa Akom* and peeling the cassava, grating, squeezing and sieving the starch and preparing it for food as *Kamu Akom* are the management strategies for postharvest losses of cassava.

5.2. Research Question 2

In what ways does the public library impact on Tiv management strategies for postharvest losses of cassava?

In order to answer the research question, data were collected relating to the research question, analyzed and presented in Table 2.

Table 2. Descriptive Statistics of Impact of Public Library on Tiv Management Strategies for Postharvest Losses of Cassava.

Descriptive Statistics	N	Mean	Std. Deviation
Audiovisual materials on Kpor Akom (Cassava Chips) are acquired and stored by the public library	680	2.0132	.42541
Library acquires and stores audiovisual materials on Mwem ma Kpor (Cassava Flour)	680	2.1206	.52354
Library acquires and stores audiovisual materials on Gari Akom (peeled, grated, squeezed and fried cassava)	680	2.3456	1.27268
Audiovisual materials on Mtuhem ma Akom (Base) are acquired and stored by the public library	680	2.0294	.46594
Public library acquires and stores audiovisual materials on Akpu	680	2.0574	.57278
Public library acquires and stores audiovisual materials on Kweesi or Akweesa Akom (Cassava Cake)	680	2.3338	1.33118
Audiovisual materials on Kamu Akom (edible cassava starch)	680	1.5941	1.03259
Valid N (listwise)	680		

Table 2 shows the mean rating scores of all the items are below 2.50, which implies that the public library does not impact on Tiv management strategies for postharvest losses of cassava through acquisition and storage of audiovisual materials on *Kpor Akom* (Cassava Chips), *Mwem ma Kpor* (Cassava Flour), *Gari Akom* (peeled, grated, squeezed and fried cassava), *Mtuhem ma Akom* (Base), *Akpu*, *Kweesi* or *Akweesa Akom* (Cassava Cake) and *Kamu Akom* (edible cassava starch).

5.3. Research Question 3

Table 3. Descriptive Statistics of Challenges Faced by Public Library on Storage of Tiv Management Strategies for Postharvest Losses of Cassava.

Descriptive Statistics	N	Mean	Std. Deviation
Lack of adequate funding to facilitate acquisition and storage of audiovisual materials on various aspects of indigenous knowledge	680	2.8779	.85543
Inadequate technical knowledge and skills of staffs	680	2.8529	.88955
Lack of adequate staffs	680	3.0176	.82825
Lack of Policy Statement on the acquisition and storage of audiovisual materials on Tiv indigenous knowledge such as management of postharvest losses of cassava	680	2.8353	.87137
Lack of initiative on the part of library management to make attempts to acquire and store audiovisual materials on various forms of indigenous knowledge	680	2.6985	.93468
Valid N (listwise)	680		

What are the challenges faced by public libraries on storage of audiovisual materials on Tiv management strategies for postharvest losses of cassava?

To answer the research question, data were collected relating to challenges faced by public libraries on acquisition and storage of audiovisual materials on Tiv management strategies for postharvest losses of cassava. The collected data were analyzed and presented in Table 3.

From Table 3, it can be seen that the mean rating scores of all the items are above 2.50. This implies that lack of adequate funding to facilitate acquisition and storage of audiovisual materials on various aspects of indigenous knowledge, inadequate technical knowledge and skills of staffs, lack of adequate staffs, lack of Policy Statement on the acquisition and storage of audiovisual materials on Tiv indigenous knowledge such as management of postharvest losses of cassava, and lack of initiative on the part of library management to make attempts to acquire and store audiovisual materials on various forms of indigenous knowledge are the challenges faced by public libraries on storage of audiovisual materials on Tiv management strategies for postharvest losses of cassava.

6. Discussion of Findings

1. Based on the results in Table 1, the findings from the study revealed that processing cassava into *Kpor Akom* (Cassava Chips), *Mwem ma Kpor* (Cassava Flour), *Gari Akom*, *Mtuhem* (Base), *Akpu*, *Kweesi* or *Akweesa Akom* and *Kamu Akom* are the Tiv management strategies for postharvest losses of cassava. Moreover, the Tiv people established markets where their cassava and cassava products could be sold. However, due to lack of good access roads, buyers cannot access the markets and the products are not sold until they waste away.
2. Based on the result in Table 2, findings of the study revealed that the public library does not impact on Tiv management strategies for postharvest losses of cassava through acquisition and storage of audiovisual materials on *Kpor Akom* (Cassava Chips), *Mwem ma Kpor* (Cassava Flour), *Gari Akom* (peeled, grated, squeezed and fried cassava), *Mtuhem ma Akom* (Base), *Akpu*, *Kweesi* or *Akweesa Akom* (Cassava Cake) and *Kamu Akom* (edible cassava starch).
3. Findings from the study based on the result in Table 3 showed that lack of adequate funding to facilitate acquisition and storage of audiovisual materials on various aspects of indigenous knowledge, inadequate technical knowledge and skills of staffs, lack of adequate staffs, lack of Policy Statement on the acquisition and storage of audiovisual materials on Tiv indigenous knowledge such as management of postharvest losses of cassava, and lack of initiative on the part of library management to make attempts to acquire and store audiovisual materials on various forms of indigenous knowledge are the challenges faced by public libraries on storage of audiovisual materials on Tiv management strategies for postharvest losses of cassava.

7. Recommendations

The research discovered that the Tiv people had various strategies they adopted in managing postharvest losses of

cassava. However, the public library failed to acquire and store audiovisual materials on these management strategies for postharvest losses of cassava; information that would have been used for improving and reducing postharvest losses of cassava by farmers. Incidentally, the public library's inability to do so was due to lack of adequate funding among many other factors. Therefore, it was recommended that concerned policy makers should make policies that will allow public libraries to acquire store and preserve audiovisual materials on various indigenous knowledge for development to ensue; and for posterity. Moreover, governments and other stakeholders should ensure that the public library sector is adequately funded and manpower is adequately provided as well. Management of public libraries should also ensure that initiatives on going from one community to another to record and shot films on indigenous knowledge are in place.

8. Conclusion

The study was carried out to investigate the impact of the public library through the storage of audiovisual materials on Tiv Management Strategies of Postharvest losses of Cassava for the Development of Agriculture in Benue State of Nigeria. The study found out that public library does not impact on Tiv management strategies of postharvest losses of cassava through storage of audiovisual materials on the subject matter. Importantly, if public library has acquired and stored audiovisual materials on Tiv management strategies for postharvest losses of cassava, cassava farmers would have accessed these information materials to improve on various ways of managing postharvest losses of cassava in Benue State of Nigeria. The study concludes that public library must make it a point of duty to start acquiring, storing and preserving information materials on indigenous knowledge, particularly in audiovisual format, since this is the only way the library will be useful to the host communities.

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