

Indigenous Storage Structures among the Ungwai of Central Nigeria

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ABSTRACT The techniques of construction of yam storage structures and granaries among the Ungwai of the savanna region of Nigeria are examined in this paper. All the building materials are usually locally sourced by every adult Ungwai regardless of sex. Men are more directly responsible for the actual construction of these structures while women supply food and drinks particularly a popular local liquor called *burukutu* (brewed from guinea-corn or millet). All these storage structures are constructed on a work-group or co-operative basis. This is an age-old mechanism for ensuring the survival and progress of the people of the region. Only one or two yam storage structures are located in a compound or settlement while granaries are often numerous. Indeed, granaries outnumber living houses. This is a reflection of the great intensity of cereal cultivation in the region.

INTRODUCTION

Food, from prehistoric times to-date, remains one of the basic needs of man across the world. It is therefore not a surprise that different peoples have always been formulating or propounding models of varying degrees of sophistication in order to grapple with the issue of food. Given the indispensability of food for sustaining the human body and thereby ensuring healthy spiritual growth, scholars from different climes, cultures and disciplinary perspectives have always been trying hard to clarify as much as possible, our understanding of this all-important subject (Andah, 1993; Peoples and Bailey, 1999).

Apart from cultivating crops needed for consumption and sale, conservation and preservation constitute a vital aspect of ensuring sufficient and quality food for a given population. This is, as a matter of fact, a reflection of man's recognition of the high level or unpredictability of climatic conditions with their attendant problem of hunger/famine when such conditions are unfavourable in any given location and time period. Given all these problems, among others, the Ungwai people of the Middle Niger Valley area of Nigeria have been manifesting their cognitive abilities by making efficient utilization of available natural resources to fashion out yam storage structures and granaries of varying sizes and forms. This is a crucial step for conserving and preserving surplus farm produce such as yam tubers, beans, millet and guinea-corn for future needs. The construction of all these storage

structures is done through a work-group system – an age-old socio-economic strategy that forms the backbone of the Ungwai essence. As a result of this situation, the Ungwai people have been able to enhance their survival and progress by reducing food wastage to the barest minimum. This scientific and technological behaviour needs to be elaborated upon in order to be able to cope with today's challenges.

THE STUDY AREA

The broad research area is located within the Middle Niger Valley region of Nigeria. This area is to be found within latitude 6°55'N and longitude 6°58'E. Currently, research work is centred around Kagara and its surroundings. The Ungwai live interspersed among other ethnic groups like the Kamuku, Gwari, Nupe and Hausa. Kagara, which is located approximately 20 kilometres north-east of Tegna, is the headquarters of Rafi Local Government in Niger State. It is on latitude 10°13' N and longitude 6°12' E (Gunn and Conant, 1960; Udo, 1970, 1982; Ogundele, 1992, 2004).

The area is well watered by rivers and streams such as Mariga and Koriga. All these are some of the tributaries of river Kaduna, which is also one of the major tributaries of River Niger (Fig. 1).

YAM STORAGE STRUCTURES – BUILDING PROCESSES

The yam store is the only structure that is not built from mud. Four strong forked poles are cut

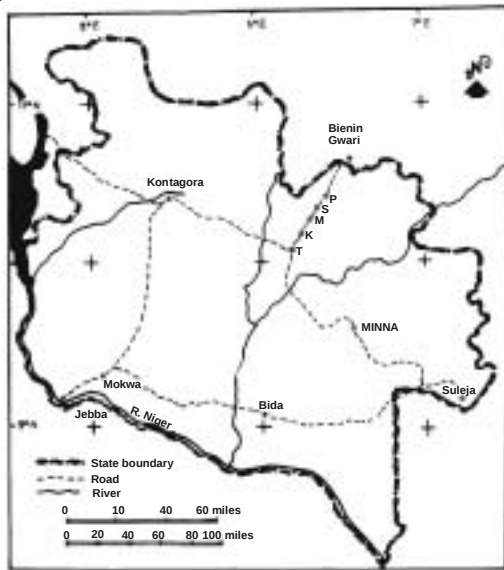


Fig. 1. Map of Niger State (State capital: Minna). The general research area covers the following places : T=Tegina, K=Kagara, M=Mal-kujeri, S=Sarkin-Nauma, P=Pandogari

in the bush, and embedded firmly in the ground about 40cm deep, to form a rectangle. Strong sticks are laid horizontally in the forks, and lashed tightly together. This frame is then walled with guinea-corn stalks, obtained from the farms after

harvesting the grain. One entrance, about 1½m high, is left. The top of the store is completely covered with guinea-corn stalks and grass (Fig. 2). The store is also built cooperatively, though it is much easier to construct than the mud buildings.

Although there is no archaeological evidence for yam cultivation in the locality, oral tradition suggests that the Ungwai were planting yams at the time that they lived on the hill-tops, and continued the practice after they moved down to the plains. Ungwailand belongs to the yam zone of West Africa (Coursey, 1976; Andah, 1993).

Granaries – Building Processes

Mud, water, grass, cow dung and stones are the major building materials used by the Ungwai for constructing granaries. These materials are usually locally obtained. For example, pits are dug near the settlement to obtain plastic mud which would be treaded upon by one or two people, in order to make it more suitable for granary construction. This process-mud preparation involves adding some quantity of water at certain intervals, as well as grass which has been squeezed into bits. The grass which is obtained near a given settlement is well mixed with mud. It is normal to reach a depth of 40cm (or more) before reaching the suitable mud.

After this stage, the base of the granary is



Fig. 2. Yam store of Tanko Wakiti, Nigeria

constructed like that of pottery. This normally involves two or more people. It is indeed a co-operative exercise which may last between 12 and 15 days, depending on such factors as the number of people involved, the expertise of these builders and weather conditions. It is important to note that women and children are not left out in the construction work. For example, women usually provide water from local streams and ponds, while the children can obtain grass around a settlement. This is however not a rigid arrangement because the children can also be involved with mud preparation with particular reference to treading upon it. Walls of granaries are constructed layer by layer and each layer is usually left for a day or two to dry before another one is set on it.

When the base, including the lower part of the structure (granary), has been made, then it is put on the stand in order to continue building up the walls. A granary stand is made of fairly dressed granitic stones numbering between 4 and 8. The lengths of these stones range between 40cm and 60cm, while the breadths vary from 18cm to 24cm. The sizes (specifically the diameters) vary from 60cm to 1 metre. These stones are quarried from granitic outcrops which dot the landscape. The stones are well or firmly fixed to the ground before

putting the base of a granary on top. Sometimes, the stands of granaries are covered with mud, leaving one entry for fowls that are being kept. It follows therefore that some granaries do serve a dual purpose – storage structures for grains such as millet, guinea-corn and rice as well as coops for fowls (Fig. 3).

Indeed, poultry droppings from these coops are collected and used as manure to sustain the soils for agricultural purposes. The lower parts of the granaries are bowl-like or globular, while the upper sections converge therefore making them roughly V-shaped (Fig. 4). Two main types of granaries, based on morphology, have been identified among the Ungwai. They are:

1. The globular type
2. The carinated/angular type

The angular types of granaries are more in number than the globular type. For example, 10 out of the 16 granaries found at Wakili settlement are carinated while the remaining ones are globular. Similarly, Yelwa Kabitu has 9 angular granaries, while only 2 are globular. Both types of granaries have holes created on their shoulders for attaching the roofs to the structures at the end of the construction. These thatched roofs can also be removed from the granaries through

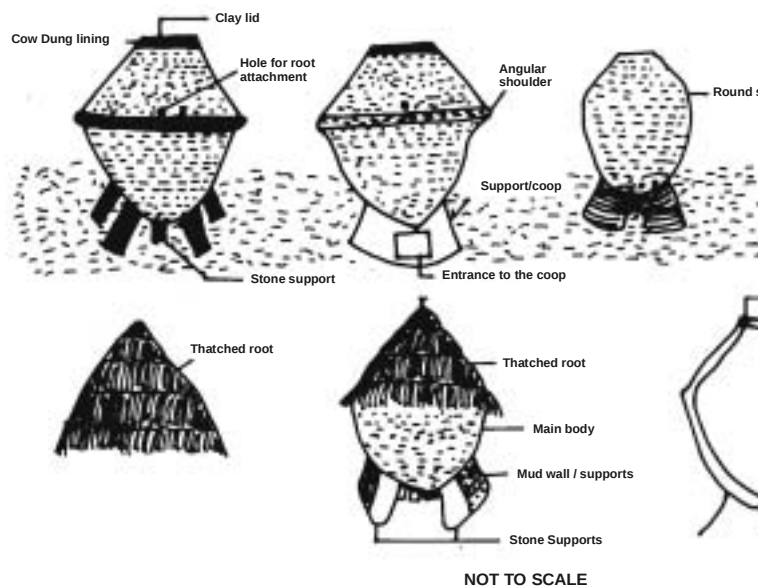


Fig. 3: Granaries from some Ungwai settlements in Nigeria



Fig. 4. A granary at Yelwa Kabit, Nigeria

the hole whenever some grains are needed. The junction of the shoulder and the main body of granary is also raised. This serves, among other things, as a step for entering it. The heights of granaries (including the stands) vary from 1.80 metres to 2 metres while the diameters range from about 1.10 metres to 1.20 metres. Similarly, the average thickness of granary walls is 6cm (with the exception of the bases which are thicker, averaging 10cm).

Granaries can be constructed at any time during the year, although the dry season is often preferred. This is because construction work can go on without any disturbance by the rains and more importantly, the dry seasons (from October to March/Early April) witnesses the end of harvesting of most crops and hence the need for storing them. Each of these granaries has an opening at the top and this varies in diameter between 35cm and 50cm. This is the space from where the granary is entered, usually by a young boy or girl, to store the cereals or to obtain some for consumption or sale. A lid made of clay (about 5cm thick) is used to cover the mouth/entry of the granary. The edges are then ceiled with cow dung. The frame of the roof is made with bamboo, sticks and ropes which are obtained from the bush, in most cases from gallery forests.

After the frame, which looks like a cone, has been constructed, strips of grass (woven grass) are then wound around it, before it is inverted on the granary structure by two or more people.

Construction of granaries is usually done on a part-time basis and almost everybody in a given settlement knows the art, although the degree of expertise varies from one person to another (Denyer, 1978; Daji, 1991 Pers. Comm.; Haruna, 1991 Pers. Comm.; Manuga, 1991 Pers. Comm.). Granaries are located within the settlements and occasionally at the peripheries. Some granaries are so close to the living houses that the edges of their roofs (granaries and living houses) do touch one another.

The raising up of granaries or putting them on stands (of granitic stones) is a major construction method aimed at preventing moisture in the granaries. In this way, crops stored in the granaries may not get bad for a long period of time. This is an effective strategy for preserving the available plant resources of a given community. Similarly, the addition of grass to the mud for construction helps to ensure the durability of the granaries in the face of the vagaries of the environment. As a result of this technological advance, granary walls become waterproof to a great extent, while at the same time, fissures or cracks are prevented. The cow dung-lining of the lid of the mouth of a granary is necessary for preventing vermin and crawling insects from gaining an entry. The cow dung is scrapped and the clay lid removed whenever some grains are needed.

Following this method, the lid is not destroyed and it is carefully returned and ceiled at the edges with some fresh cow dung. The concept of cover-

ing the mouths of granaries with clay lids is similar to the idea of covering certain categories of pottery (e.g. soup vessels) with clay lids among many ethnic groups such as the Yoruba, the Igbo, the Nupe and the Hausa in Nigeria. This development appears to have evolved from pottery technology and may therefore suggest the great antiquity of granary technology in the study area (Daji and Manuga, 1991 Pers. Comm.). It is important to note that certain categories of pottery are still being used in the study area to store grains such as guinea-corn and millet, usually for their immediate or near-immediate consumption.

Local information claims that grains stored in granaries may be preserved for as long as five years. However, the roofs are usually repaired or replaced at least once in 18 months. The degree of durability of these roofs, as indeed the mud structures, depends largely on the expertise of the builders. Therefore granaries are a common feature in the settlement arrangements of the Ungwai and it is not a surprise that almost every adult male or female knows some aspects of, if not everything about, the technology involved. An adult man or woman may have one or more granaries depending on his or her level of industry as well as harvest situations in any given area and year. Thus, for example, more granaries are constructed if the community in question, had abundant or bumper harvests due, among other things, to well distributed rainfall patterns.

As a result of this development, most Ungwai settlements are dotted with granaries. Tanko Wakili and Yelwa Kabitu are two present-day settlements investigated in the study area. The former has 16 granaries while the latter (Yelwa Kabitu) has 11 as at the time of investigation. It is not compulsory however for every member of a settlement unit to have a granary or granaries. Indeed, a woman and her husband may jointly own a granary if they do not have much grains to store, or if the yields from their farms are to be sold immediately. Similarly, adult males who are proposing to marry as soon as possible usually sell out most of their grains such as guinea-corn and bulrush millet, so that they can have money to buy cattle or goats, among other things, for their would-be in-laws.

Consequently, there may not be any serious need for constructing granaries by such young men. It is clear therefore, that there are several factors determining the number of granaries in any settlement within a given time period.

Stealing of grains from granaries by people outside or within a given settlement is most uncommon. This is largely due to the fact that every compound has some watch-dogs that keep vigil over the area at night while during the day time some people, usually the children and aged people who cannot go to farm, are around. Apart from this, the local deity known as *maigiro* serves as an effective measure to control crimes to a considerable extent, since almost everybody fears its wrath.

CONCLUSION

This piece of work has revealed, in a simple way, the great ingenuity of the Ungwai people as manifested in their efficient utilization of available raw materials, such as dry guinea-corn stalks, ropes, stones, mud and grass in order to construct storage structures for yam tubers and grains. This attempt to reduce food wastage to be barest minimum is usually made on a co-operative or work-group basis. Indeed, almost every adult member of a given settlement knows how to construct granaries, at least to a certain degree (Olawoye, 1989; Orme, 1981; Hodder and Orton, 1976; Hodder, 1982).

Granaries are a common feature of the Ungwai settlement and this technological adaptation appears to have developed from pottery technique. This development may therefore suggest the great antiquity of granaries in the study area. It is important to note that most ethnic or sub-ethnic groups, including the Ungwai in Nigeria, do produce, among other things, pottery of varying sizes and shapes to store their food items or crops.

On the other hand, a settlement or compound has only one or two yam storage structures for the entire community. This arrangement is a testimony to the fact that the construction and uses of storage structures among the Ungwai are beyond the confines of economic survival. Indeed, they are a mechanism for ensuring greater social solidarity and oneness of members of a given compound or settlement.

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