

A long tradition of long storage

The experience of the Aten

Ganawuri lies near latitude 8°35'E and longitude 9°N in the south-west of Jos Plateau, partly on the plateau (1400 m elevation) and partly at its foot (1000 m). The annual rainfall of about 1500 mm falls mainly between April and November, but also in the weeks before, air humidity is already high.

Acha - pride of the Aten

The main cereal is acha (*Digitaria exilis*), an ancient small-grained crop domesticated in Africa. In some parts of Africa, it is called fonio. Acha is the staple food of the Aten. They say that uprooting acha means annihilating the Aten.

The Aten also grow millet and sorghum and tried growing maize for some years. But maize needs chemical fertiliser. The Aten say this weakens the soil, which demands more and more fertiliser each year. Besides, fertiliser has become very costly. So now the Aten are investing renewed energy in growing acha, which does not need fertiliser to do well. But there seems to be no farming venture without problems: weeding acha is very tedious work, and women do this for up to 8 weeks of the year.

As acha is very important to the Aten in terms of nutrition, economy and culture, they store it with great care. They have developed a granary called a *rumbu*, in which threshed acha grains can be stored safely for many years. It is a matter of pride for Aten farmers to still have older grains in the *rumbu* when new grains are harvested. These are then added to the grains from previous years.

A particular year's harvest may remain in the *rumbu* for 3-4 years without any use of chemicals to control pests. Some Aten even claim that they can store acha for up to ten years in this way. Almost without exception, the farmers continue to use this traditional storage method, not only for acha but also for millet and sorghum.

Smoke controls pests

The granary is made of local clay, mixed with acha straw, in the form of a multistorey structure with props also of clay. The ground floor is divided into a kitchen and a staircase. The upper storey has several small chimney-like compartments. Sometimes there is even a third storey. Each man is expected to build his own *rumbu*, and to teach this art to his sons.

Within a few days after the grains are put in storage, the heat and smoke from cooking on the ground floor drives out or kills any pests stored inadvertently with them. The smoky conditions generally keep away new pests. The heat reduces the moisture content of the grains to a

Farmers want to store their cereal harvests well to provide a secure food supply for the family. They also want to be able to keep grains to sell when prices are higher, rather than when the market is glutted right after harvest. But they face problems of maintaining the right moisture content in stored grains and protecting them from pests. Through generations of learning from experience, the Aten people of Ganawuri have developed effective ways of dealing with these problems.

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level which prevents microbial or fungal growth. The firewood and cereal stover used by the women for cooking thus serve for both preserving and preparing food.

The *rumbu* is constructed in such a way that only the family has direct access to the upper compartments. This helps prevent stealing by outsiders. In former times, a man guarded the grain also against pilfering by female family members and personally allocated grain to each of his wives. These days, however, many women may take what they need to cook for the family. But they are not allowed to sell any of their husband's acha.

Modernising the rumbu

In recent years, the style of *rumbu* construction has been changing. Now, both traditional and modern *rumbus* can be found. The traditional ones are circular or slightly oblong in shape, covered with grass. The small thatch cover can be removed easily to give access into the var-

ious compartments. A disadvantage of the traditional *rumbu* is that, if fire breaks out, both the roof and the grains are lost.

This is why some farmers have now made *rumbus* which can be roofed with corrugated iron sheets. The modern *rumbu* is built in a rectangular form, by laying mud bricks instead of molding the granary walls into shape in the traditional way. It looks like a normal house, but the upper storey is divided into a passage way and many small "rooms" for different types of grain.

Independent storage

In the wetter areas of central Nigeria, the government has started to build huge steel silos. These are also meant for central storage of surplus grains from subsistence farmers. However, it will take some years before these silos are widespread. It is also questionable whether such high-external-input storage structures will be attractive to Aten farmers, who pride themselves in their skills and independence in grain storage. The *rumbu* is likely to maintain its superiority for some time, serving to hold the family's grain needs as well as to "feed" the national silos, if the Aten choose to sell some of their surplus.

Modern science has not been able to offer anything which is as cheap and effective as the *rumbu*, which is made exclusively with local materials and requires no chemicals. Grain farmers living in other areas with similar climatic conditions could learn much from the storage methods of the Aten farmers.

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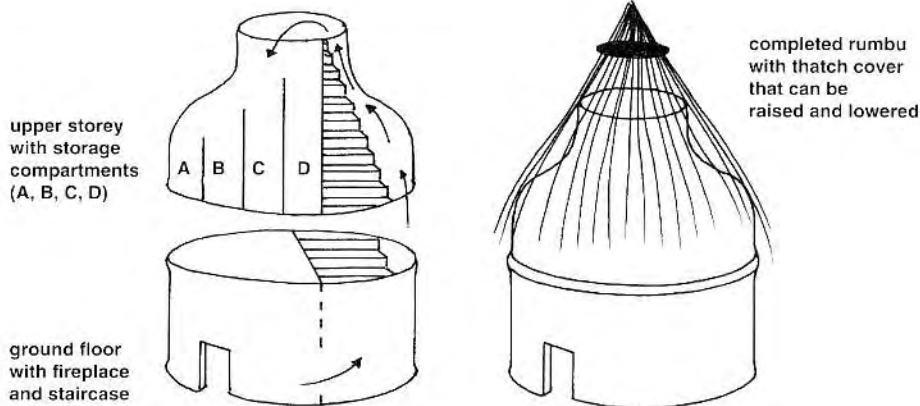


Figure 1: Traditional *rumbu* for acha