

■ GHANA

Recent archaeological research on cisterns at Saakpuli, Northern Ghana

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Introduction and background

In October 2001, I carried out an archaeological reconnaissance, involving limited survey, mapping and ethnoarchaeological data collection on cisterns in Saakpuli (100 30' N, 00 50' W) (Figure 1). The study area is located in the Savelugu-Nanton District, in the Northern region of Ghana. It is about 40 kilometers south of Walewale and 6 kilometers east of Disiga, off the Tamale-Bolgatanga highway. Farming is the main subsistence activity. Groundnut is a leading crop grown for consumption and for sale in the nearby markets, and at Walewale, Savelugu and Tamale. Other crops such as millet, corn, cassava and yam are cultivated on a small scale for consumption. In recent times, cotton cultivation is being promoted by cotton companies operating in northern Ghana. Livestock include cattle, goats and sheep. Other domestic animals are fowls, dogs and donkeys. There is no market place, school, clinic, mosque or church building in Saakpuli.

Saakpuli is a small village of 27 thatch-roofed households with a population of about 300 people. The people are mainly Dagombas and they speak Dagbani which is one of the dominant languages in this region of Ghana. Three of the 27 households in Saakpuli belong to Frafra settlers from the Upper East region of Ghana. There are no other ethnic groups besides these two. Islam is the main religion in the village but I noted a strong adherence to indigenous religious practices. Saakpuli has attracted the interest of the Savelugu-Nanton District Assembly as a slave market site. It is a place of interest to the Upper East Regional Museum in Bolgatanga as well as the

National Museum in Accra. It featured prominently in museum exhibitions held in September 18 to December 15, 2000 in Accra and April 26-May 15, 2001 in Bolgatanga. In early 2001, the director of UNESCO's Ghana Office visited Saakpuli and he was fascinated by the cisterns in the area. His desire to see these cisterns properly investigated formed the basis of my first visit to Saakpuli.

Until my research, the main reason for visits to Saakpuli were for the collection of slave related iron artifacts and photographing of some of the cisterns for exhibition purposes. It has not been the subject of detailed archaeological investigation. The major goal of my first trip to Saakpuli in October 2001 was to locate and ascertain the pattern of distribution of the water cisterns, to obtain data on their numbers, their design and morphology; and to collect ethnoarchaeological information. This paper presents a report on results from that work.

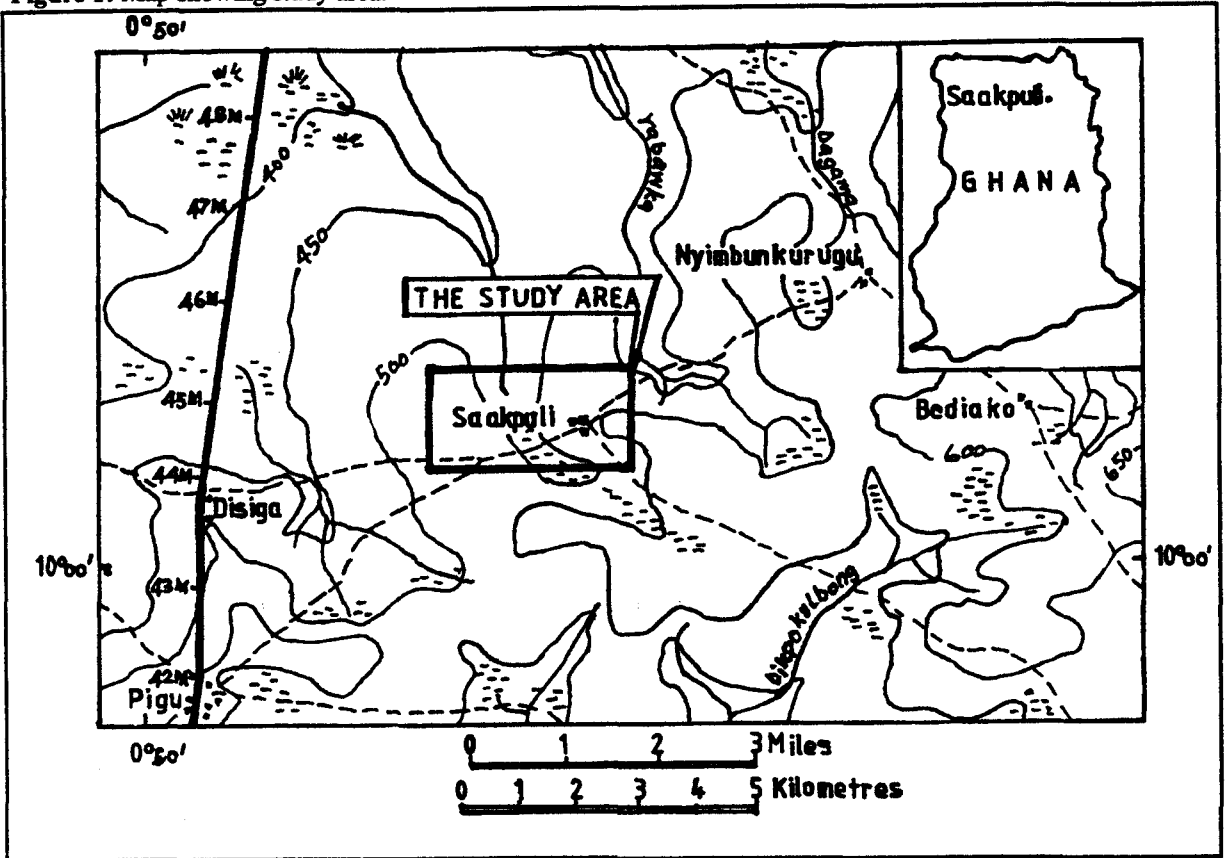
Field Survey and Mapping Results

This first field season served as a reconnaissance mission. The trip coincided with the rainfall season when vegetation growth was thick and high. For most of the time, surveys relied on footpaths. All surveys were performed by myself and three local assistants, Mahamadu Amidu, the linguist of Saakpuli, Bukari Sulemana and Alhassan Yakubu. Fear of snake bite and possible attacks by animals such as porcupines in the thick grass and tree growth was made known to me by a hunter and my local assistants. This threat affected the outcome of the survey especially in areas where numerous cisterns were found. Despite these limitations, the survey achieved a lot to form the basis of a more rigorous future research. From the surveys, I found different locations of cistern collections which in line with earlier Salaga research findings I have referred to as cistern fields.

Cistern Fields

By Cistern Field (CF), I mean an area that has more than three cisterns located together. Using this definition, I documented 3 cistern fields; these are all found in low-lying areas that serve as channels for seasonal flash floods during the rainy season. During periods of prolonged heavy rainfall, such areas become flooded and the water level subsides only with the abatement of the rains. These flood zones

Figure 1: Map showing study area.



are located between 800 m and 1.2 km to the south-west of Saakpuli. We could not map the connections to these cistern sites to the village due to the vegetation problem. The dry season will be the best time to do this. The first Cistern Field (CF1) has 4 cisterns. However, we were not able to locate any of them. I called off the search to prevent any problems of snake bite because it was not possible to see the ground surface properly.

Cistern Field Two (CF2) has 40 cisterns according to local accounts. My assistants counted them in the dry season in early 2001 during one of the visits of personnel from the Bolgatanga Museum. Locating and counting these cisterns at the time of my research was difficult due to vegetation growth. After counting the 28th cistern we stopped the search. Ethnoarchaeological data that I collected showed that the people of Saakpuli refer to a cistern as *beliga* and several cisterns as *belisi*. CF2 is called *beliborbugu* in Dagbani which means "uncountable cisterns". In the Saakpuli area, linguistic evidence supports archaeological evidence to show that CF2

has the highest number of cisterns. I have the strong conviction that I might find more than 40 cisterns including those that are sealed up or have collapsed. This emanates from my experience in Salaga where in the village of Garinshami, 8 km south, my guides told me of the presence of 13 cisterns but when I did a detailed survey, I found 23. At Wankanbaya, (a Hausa term meaning slave bath) in Salaga, the discovery of over 4 dozen wells and cisterns was far above local estimates.

There is a third cistern area, Cistern Field Three (CF3). It is located about 1 km northwest of Cistern Field Two. The residents of Saakpuli refer to this area as *beligahima* meaning "broken or collapsed cisterns". The name is appropriate because I counted 5 depressions measuring between 6 m and 9 m across and up to one meter deep. I observed that these depressions resulted from the collapse of several cisterns located in close proximity. These cisterns eventually had their underground chambers joining together to form a huge unit, that is, if the chambers were not already joined during their construction.

Portions of the broken chambers containing water were seen. I found on the edge of one of the depressions a cistern that is filled with sediments and damaged by animal burrowing. It measured 40 cm wide at the lip and neck with a pisolith cement roof thickness of 50 cm. Evidence from Salaga shows that, a 50 cm thick pisolith cement roof for a cistern is not enough to prevent roof collapse with time. With several cistern chambers joining together, the chances of the roof collapsing is high. Each of these depressions might have had between 3 and 5 cisterns at the time of their construction and use. In effect, there is only one surviving cistern almost sealed) in an area that may have had between 15 and 25 cisterns in the past.

There are several trees growing in the area and the fear of reptiles and other dangerous animals prevented me from spending a longer time than I wanted. My assistants were not comfortable being in the area for long. When we moved out of the forested area, I found two cisterns all containing water that looked clean. I was therefore not surprised when one of my assistants knelt down and drank from one of the cistern water using his hand. When I asked my assistants to compare cistern water with borehole water, they said that cistern water tastes clayey and natural and borehole water tastes salty.

The picture of cistern location and distribution outside these three fields is different. The cisterns are found individually and are surrounded by settlement mounds of varying dimensions. One of these cisterns is called *beligana* meaning "isolated or single cistern". It is located 1.2 km to the north of Saakpuli. This cistern contained water at the time of visit and my assistants recounted that it has been one of the major sources of water supply in Saakpuli until the construction of a borehole as recently as 1999 by World Vision International. From the design point of view, the single *beligana* cistern shared similarities with two cisterns found at CF2 located about 1.5 km to the south west. The implications of specialization in the design of cisterns is possible but we have to wait until the 40 or so cisterns at CF2 are properly investigated.

From *beligana*, my assistants wanted me to see another single and isolated cistern located 800 m away but when we got to the area, our search proved futile. Grass had formed a mat completely covering the land surface. We called off the search. Later,

Awuni Akeri, a well-digger, hunter and a Frafra resident of Saakpuli took me to a collapsed single cistern 600 m north east of the village. The depression had water and the footprints of bush animals were visible. Around it, I counted 6 settlement mounds. It was after this visit that Awuni reiterated his early advice to me not to walk in the bush in search of anything at this time of the year. The footprints confirmed his caution that porcupines are regular occupants of the cool and wet locations of old cisterns. Three days later, Awuni brought to me a porcupine that he has trapped with a wire in one of his selected cistern spots.

Numbers, distribution of cisterns and their implications

The evidence shows that there are 3 cistern fields where we have over 60 cisterns including those that have collapsed. Why these areas have concentrations of cisterns and who owned them need to be understood. In Salaga, one cistern field associated with slave bathing had over 4 dozen cisterns. Today, there are families or villages in Salaga that claim ownership of the cisterns. In Saakpuli, the situation is different. So far, it has not been possible to establish a direct link between the cisterns at CFI, CF2 and CF3 and the present people who resettled in Saakpuli some three decades ago. The link between the people and the mounds is more evident in the oral history and ritual practices narrated to me.

There are possibilities of a relationship between the cisterns and the slave trade. I visited the slave market site of Saakpuli, surface collected artifacts and did a test excavation. The data is being analyzed. A detailed investigation of the slave market will be done in the next field trip. In Salaga, the slaves were used in constructing wells and cisterns among several other activities. But as to whether the cisterns in Saakpuli were constructed by slaves or served as a location for bathing of slaves calls for further investigations. From the water management point of view, Saakpuli cisterns show a deliberate attempt to catch/harvest and store some of the large volumes of water that flooded the low lying areas to the west of the settlement.

For now, the limited archaeological and linguistic evidence shows that we have three cistern fields sharing between them over 60 cisterns. I

cannot provide information on the morphology and designs of Saakpuli cisterns in this report. Data for that purpose was collected. But it is of limited use now as it is based only on the lips and necks of the cisterns. Details on the dimensions of the tanks and appropriate depths of the cisterns are not available now. Most of the cisterns contained water making it difficult for me to see the inside or descend into their chamber by means of a ladder. For the few cisterns that did not contain water, siltation from soil sediments, leaves, stones, wood and grass has taken up the chambers and all or part of the neck of such cisterns.

The timing of the next field trip will coincide with a dry season when all the cisterns will be dry. I can then descend into the chambers of cisterns and see the interior using a flash light. I did such a thing in Salaga. For the cisterns that are heavily silted up, cleaning of one or two is needed. I have undertaken such an exercise in Salaga by contracting three well-diggers to clean two wells/cisterns at Wankanbayi in May, 2001 and January, 2002. In Saakpuli, there is only one well-digger who does not know how to dig a cistern and has not cleaned one before.

Once cleaned, the details of the interior dimensions of cisterns at Saakpuli can be added to the details on neck and lips available. This will enable a comparative study of the cisterns as they occur within the same or different cistern fields. Saakpuli cisterns can also be compared to Salaga cisterns. This will provide a database for understanding these water holding facilities in the economies and daily life of the prehistoric and historic populations of northern Ghana.

Conclusions

The investigation has established that Saakpuli has several ancient water cisterns as a significant feature of its archaeological landscape. It has also shown that water management is an important component

of the economy of Saakpuli. Like Salaga, the people of Saakpuli lived in a savanna environment that had all that was needed for human settlement and trade except for a year-round-supply of water. Rainfall was limited to a part of the year. The rest of the year was dry. But there was water that came with the rainy season and flowed or collected on the land surface. Some of this water that was harvested into tanks for which over 60 of them have been found in three cistern fields.

There are cisterns located elsewhere as well as several settlement mounds. These have to be studied together. Saakpuli had a slave market and I have observed that the distribution of settlement mounds and oral information suggest a "town" in the past that covered an area of at least 4 km². I cannot conjecture the population now. But suffice it to say that water was needed on a daily basis for residents, traders, slaves and domestic animals. It is in this light that we have to appreciate the archeological and other evidence of intensive water management involving the use of cisterns in the culture history of Saakpuli. The next stage of research will seek to understand these issues.

Acknowledgments

Funding for this research was provided by the French Embassy (Accra, Ghana) through the initiative of the Director of UNESCO Ghana office. I thank Professor James Anquandah for mentioning me to the Director and for providing me with academic and other support. My gratitude goes to the District Chief Executive of Savelugu-Nanton District Mr. A. A. Abubakari Atori, the District Engineer Mr. Djokoto and Mr. Alhassan Iddrisu Gallant (the District Tourism Officer). Finally, to the Chief of Saakpuli, Chief Alhassan Yakubu, his linguist Mahamadu Aminu, Bukari Sulemana, Alhassan Yakubu and others of Saakpuli, I say thank you for receiving and sharing your experiences with me.