

Salt production and salt trade in the Makgadikgadi Pans

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Salt has long been traded far and wide in Africa. The many Iron Age sites around the Makgadikgadi Pans may have been settled for this purpose. Indeed, these pans are still used for salt production and trade, and this paper describes the traditional methods still in use. Alas, these leave few material traces: it will be difficult to find direct evidence of past salt production at Makgadikgadi.

Salt is one of the natural resources that has been important to man. Today, between a third and a half of the sodium we consume is added during cooking or at the table (Warlaw & Insel, 1990). Since the effects of excessive salt use are not immediate, there has been a general tendency to take in more salt than the human body needs, and this has been largely influenced by appetite for the taste of the commodity (Swales, 1993). It must be appreciated that table salt is not the only salt. Other sources of salt exist in the natural context and their purity and quality differs. The value of salt has not only been recognized in Western civilization. In Africa for instance, large scale exploitation of salt has been documented (Roberts, 1973; Connah, 1991, 1996; Davison, 1993). Looking back through time, salt has been a trade item of significant value among many societies. Davison (1993) talks of the establishment of caravans between Malawi and the Indian Ocean, trading mainly in salt. Salt has bought food for the people of Kibiro in Uganda (Connah, 1991, 1996). The ways of acquiring salt cannot all be outlined, but it has in many instances created avenues for interaction between individuals, societies and within societies. For instance, in Zambia it was used as an object of paying tribute to the chief among the Bemba; it was also exchanged in peace making processes, and in other ways (Roberts, 1973).

As exemplified by the above citations, studies conducted on salt in many parts of Africa have highlighted that salt sources, where available, have been extensively used. Botswana, especially the Makgadikgadi Pans, has been known to produce salt. References have been made to societies exploiting salt from these pans but up to now no comprehensive study has been conducted. Scanty formal documents exist on salt exploitation and trade in this region. James Denbow (n.d.: 4) indirectly confirms that Basarwa living in the vicinity of Sowa Pan exploit and trade in salt when he says:

... the salt processing techniques and trade routes to Zimbabwe used by local San today could thus have been in existence for 500 years or more.

However, no details are provided on its exploitation. This factor has been the primary incentive for doing this study, strengthened further by Cashdan (1979) who alludes to the salt trade in the Nata region of Sowa Pan. These above cited works are apparently the only existing documents that mention salt trade in Botswana.

The other factor that influenced this study is archaeological. This is related to the statement made by Denbow in the report mentioned above. The margins of Sowa Pan have been recognized to harbour many archaeological sites with occupation periods spanning from the 9th century to the present (Reid & Segobye, 2000). Of interest, is the fact that these sites are reasonably close to likely salt producing locations. It is possible therefore that the societies that peopled this area may have exploited the salt and even used it as a commodity of trade. A study focusing on exploitation and salt use among the living

societies known to exploit salt was therefore seen to be of great value. In this paper, therefore, I intend to discuss aspects of salt exploitation and use among present day societies, with the view of aiding interpretation of the archaeological sites in the Sowa Pan margins, especially as regards their exchange patterns.

The study focuses on the Makgadikgadi Pans, an area that once was a lake. The lake gradually shrank until it reached extinction about 200 000 years ago (Cooke, 1979). Today this area, together with the Okavango Delta, dominate the geography of the middle Kalahari. At certain times in the past the pans have been much drier than today. Most of the pans are white expanses of saline and highly alkaline mud. Today, a variety of ethnic groups inhabit the area. Basarwa have been the first to settle in this area (Cashdan, 1979). Bangwato were the first to turn these areas into cattle posts. In the area around Mmatshumo and Mosu, Bangwato dug boreholes for their cattle (Fig. 1) and hired Basarwa to look after their cattle but did not pay them except to let them drink the milk from the cows. This area was later, in the mid 1940s, inhabited by Bakhurutshe, Bakalaka and others, who were relocated by Rakoosha Seropola who was the chief at Rakops (Gabotlale, pers. comm.). The Nata area also experienced the introduction of different people: Bakalaka, Bakhurutshe and Basotho, who saw this area as good grazing land (Cashdan, 1979). Today, these groups of people still inhabit these areas.

Salt

Salt is known to chemistry as sodium chloride; table salt contains 40 percent sodium and 60 percent chloride (Warlaw & Insel, 1990). Whilst it is an essential nutrient, if taken in excessive quantities salt can be toxic. In the short term the difference between the two extremes is vast since the body can cope with a wide range of sodium intake (Swales, 1993). According to Swales it is difficult to establish an optimal salt intake which is consistent with the greatest level of health, since many factors come into play when considering this, such as the environment in which individual lives and the physiological and medical conditions that may influence the body's requirement for sodium. A low sodium diet coupled with high perspiration losses or diarrhea, can deplete the body of sodium leading to undesirable effects such as muscle cramps, nausea, vomiting, or even shock and coma (Warlaw & Insel, 1990).

When considering the usefulness of salt in the body the sodium component is usually the most emphasized. This emphasis on sodium does not mean that the anion (chloride), is of no physiological importance. As some studies suggest, the changing of the anion component may influence the physiological effect of the sodium ion (Swales, 1993). Swales (1993) mentions that the human body contains on average, about 500 mmol of sodium, some of which (about 200) are bound to bone, and largely metabolically inactive. The remainder are related to water distribution. The body fluid is divided into intracellular, and extracellular fluid spaces with high concentration of sodium in the extracellular fluid spaces (including blood) and low in the intracellular fluid spaces. There is therefore, a substantial concentration gradient of sodium between the intracellular and extracellular compartments whose maintenance is fundamental to life, and can be achieved through a number of transport processes. Swales further outlines the physiological actions of sodium important in understanding its role in health: sodium gradient is a chemical drive for fundamental cell functions. In the tissues in the central nervous system for instance, release of neurotransmitters is associated with the sodium gradient across the cell membrane so that the activity of the brain and peripheral nerves relies upon the sodium gradient. Warlaw & Insel add that impulses are driven down the nerves by the sodium ions. Thus, sodium ions are important for nerve conduction. The process also depolarizes cell membranes as the

positive ions rush in, generating electric current. As regards the physiological aspects, the importance of salt cannot be underestimated. There is a complex interaction of sodium balance and body function occurring at body level, organ level and individual cell level (Swales, 1993). One other good thing about salt is that since it can be added to food on the table, it retains all its nutritional value which in other foods is lost during cooking. Thus salt has been favoured as the carrier of iodine (iodised salt) which counteracts goitre (Swales, 1993).

On the African continent, in historic and prehistoric times, exploitation of salt by different communities has been documented (Fagan *et al.*, 1969; Roberts, 1973; Connah, 1991; Alexander, 1993). This demonstrates that salt has always been an important commodity with variable uses in many different societies. Despite the fact that salt is such a valuable resource, and despite the fact that we have salt producing locations in Botswana, there exists no detailed substantive and comprehensive study of salt production and salt use in the country. The few documents that exist include Elizabeth Cashdan's unpublished Ph.D. dissertation (1979) where she alludes to the trade in salt in the Nata region and the Boteti River area. In the Nata area, Bushmen obtained salt from Sowa Pan and traded it with the Bantu of the Bokalaka region for sorghum. Cashdan, however, maintains that this trade was engaged in by the Bushmen as a buffer against food shortages in instances when the environment did not produce enough to sustain their food needs. James Denbow (n.d.) in his report on preliminary archaeological reconnaissance for the BP soda ash project on Sowa Pan suggests that salt could have been a major trade item among communities living there. This suggestion was not backed up by any evidence of salt trade or exploitation but instead was based on the fact that the site of Toranju was in close proximity to the pan. Denbow feels this site could have been strategically established to have good access to the salt. Besides the above mentioned, I do not know of any other primary document that mentions salt trade or salt exploitation by communities that lived in close proximity to the resource in Botswana.

In other parts of the world salt has been shown to be a revered item of trade and has been produced from many different sources. I shall confine myself to the examples of salt exploitation on the continent of Africa. The raw materials used in the production of salt in Africa are rock salt, seawater, saline springs and soils (Sundstrom, 1974). It is important to note however that salt studied by archaeologists rarely survives even at the sites where it was obtained (Alexander, 1993). Because of this factor many studies on salt production and trade have relied on ethnographic and ethnohistorical evidence (Connah *et al.*, 1990; Connah, 1991, 1996; Vogel, 1993; Davison, 1993). In these studies, salt has been documented as a major commodity traded widely during the first and the second millennia AD (Fagan *et al.*, 1969). Caravans were set up to trade largely in this commodity between southern Malawi and the Indian Ocean, as few salt sources existed between these two points (Davison, 1993). In the various transactions that were conducted, the value of salt is highlighted by the fact that it was in some cases even traded for precious goods (Fagan *et al.*, 1969).

For some communities, trade has been the backbone of their economy as exemplified by the work done by Connah (1991, 1996) at Kibiro in Uganda. Salt production and trade in Kibiro is thought to be about a millennium old and is still important today. Not all areas, especially those in the inland have good sources of salt such as saline springs and soils. In cases of this nature, salt has been produced from vegetation, especially from plants growing on the banks of lakes and rivers. In some instances, even salt produced from burnt plants was traded, as was the case in Malawi during the 1940s (Davison, 1993). Davison also mentions salt being produced from goat dung!

It is doubtless that salt has been highly esteemed in many parts of this continent. Its value has been more evident among the Iron Age communities, especially communities that concentrated on agriculture. Lovejoy (1986) in his analyses of the production and distribution of mineral salts in the central Sudan, a region that encompasses the Lake Chad basin, the central Sahara Desert, the Benne River basin, and the Niger Valley, further amplifies the importance of salt. Here salt was traded over enormous distances: for example in the case of central Sudan and the source at Amador, it was traded over 1000 km on animal transport. Lovejoy observed salt being used for culinary purposes, as well as for medicine by traditional doctors, and in the local industries for tanning and curing animal skins. Because of the scarcity of high quality salt in the central Sudan, they used *narol* which had lower quantities of sodium chloride and greater amounts of soda. Salt is even seen to have played important roles in the politics of some societies. Roberts (1973) observed that around the Luitikila-Mufubushi confluence salt was a powerful inducement to Bemba conquest in a war between the Bemba and the Bisa in 1826 – 31. Salt was used to pay tribute to the chiefs in those times.

Salt can be produced with a variety of methods. Salt extracted from saline earth has been produced by dissolving the soil, filtering the saline liquid from the soil, then evaporating it either by boiling or exposing the solution to solar heat (Fagan *et al.*, 1969; Connah *et al.*, 1990; Davison, 1993). A variety of plants can also be used to extract salt, especially those growing by the waterside. Vegetation is cut, dried, then burnt. Water is then filtered through the ash into a collecting pot and then boiled to produce salt as residue (Davison, 1993). Despite these variations, salt production has basically followed the method of dissolving, boiling and evaporation (Fagan *et al.*, 1969; Evers, 1975). Salt for trade has been produced in the form of cakes which are easy to handle for transportation over long distances (Fagan *et al.*, 1969; Connah, 1991, 1996).

Salt production in some instances has been detected archaeologically. Evidence has been derived from pottery and other material left in the archaeological record that are associated with salt production (Fagan *et al.*, 1969; Evers, 1975; Connah, 1991, 1996). Other evidence can be derived from the colour of the soil due to the effect of heat, especially at sites that are considered to have been salt production centers (Evers, 1975). In other cases mounds of soil collected over extended periods of time can be seen (Connah, 1996). Nevertheless, even Connah's principal proof of salt production at Kibiro is indirect: that Kibiro could not support agriculture, being too dry, and therefore had to trade other commodities.

Methodology

From Cashdan's Ph.D. dissertation, I was led to consider Nata as a starting point. During archaeological fieldwork at sites on the southern margins of Sowa Pan, I conducted a chance interview with an elderly man from the village of Mosu who informed me of two salt sources: Tswantsha near Mmatshumo village and another source near Mosu village. Due to transportation problems, for further interviews I decided to focus my attention only on the main villages although I was aware of the existence of minor settlements, such as cattle posts, which were inhabited by people who could know about salt exploitation. Thus, Nata, Mmathsumo and Mosu were selected as the major areas of my focus. Whilst at Mosu, I faced a problem of finding people who knew about salt exploitation from the pan. Many of the people that I met claimed ignorance. This was aggravated by the fact that it was ploughing time and a lot of the people had migrated to the farms.

I began my interviews in Nata in the month of June. My interviews were generally not discriminatory (see Matshetshe, 1998 for the questionnaire used). It should be noted that today Nata is a big village inhabited by different ethnic groups. These, among others,

include Basarwa, Bakhurutshu, Bakalaka and Bangwato. Interviews in the Nata area ran for a week and at the end of the trip I had also managed to obtain a sample of the salt that was collected from the Nata River by one of the informants. It had been part of my plan to visit the salt producing areas that could be found during the time of my research. Whilst in Mosu during the month of June, I visited the salt producing area of Xoichiba. Unfortunately, there was no salt as the pan was too wet and the salt had not yet started to crystallize on the pan surface. However, samples of salt from this area collected in the previous season were acquired from one of the local inhabitants of Mosu. Another trip was arranged later to go to Tswantsha. On reaching the area with the help of a guide, we found the salt was only beginning to precipitate on the pan surface. I had hoped to observe a demonstration of salt collection by the guide but this was not possible as the salt was only beginning to form and therefore not ready for collection. In August, I arranged another trip to conduct interviews in the Boteti area. Mosu and Mmatshumo were the focus. I only managed to conduct a few interviews in the neighbouring cattle posts.

It was not possible to visit all the salt producing areas because of constraining factors such as transport and time. Also due to limited resources, it was not possible to survey the areas for material signatures of salt production that may exist. Because of this factor, we may be missing important information that could aid archaeological interpretation. Of the mentioned salt sources, none has been studied to establish their extent. We cannot therefore, make comparisons between these areas except by making inferences from the information collected during the interviews.

The recent history of salt exploitation and trade in Botswana

Salt in the Boteti area forms on the surface of the pan. It is a limited resource in that it occurs only in certain specific locations on the pan. Whilst several salt sources are discussed here, there could be other salt sources in the pan which are not mentioned in the interviews because they are perhaps not known by the respondents. Nevertheless, there seems to have been three major salt producing areas in the Boteti inlet area: Tswantsha, Xoichiba and Debeekam. It appears Tswatsha is the largest and most popular of the salt bearing areas in the entire Boteti area. In all these sources salt forms at about the same time of the year. The salt starts to form from the winter season and continues into the early months of spring, in the period before the rains. Salt is usually ready for collection from the end of July and up to the month of September, depending mostly on the prevailing weather conditions. In the absence of chemical analysis one may assume, based on the information collected, that the three areas produce salt of similar quality and chemical composition.

Because the salt forms on the surface of the pan it is easily accessible. By appearance, this salt looks pure and it cannot be easily distinguished from table salt. The period from the twilight of winter into the first months of summer (generally the dry period) is very significant to most of the people who live close to the salt producing locations. Many would be seen journeying to the pan to harvest the salt. Methods of carrying the salt varied, as did the quantity collected, according to personal need or the type of container used or the method of transport. Those who used donkey transport, for instance, stood a better chance of collecting more salt than those who traveled on foot to the salt source. As the salt was collected for different reasons, for use in the household or for trade, different modes of transport were used. Moreover, not everybody had donkeys and the distances from the different home bases to the salt sources differed; those staying nearer could afford to walk to the salt source with less strain.

To carry the salt, people would use woven baskets of different sizes or bags made from animal skin. A sizeable wooden stick or a metal rod, if available, was used to break through

the salt layer on the pan surface and to pluck out slabs of salt. When fully solidified and compact, the slabs plucked out can sometimes be even so large that a single person cannot carry them unaided. Salt collecting continues until the rainy season, when rainwater will dissolve the salt on the surface.

Today, the nearest village to Tswantsha is Mmatshumo. In different directions from Tswantsha exist a number of cattle posts, some nearer to the salt point than Mmatshumo and some much farther. Names like Matsalankwe, Ganeganega, Sasa, Kwacha, Guaxae (known today as Guguga) and many others can be recalled. These, according to the informants are Bangwato cattle posts but were settled most of the time by Basarwa. Informants, both Bantu and Basarwa indicate that Bashuakhwe and Madanisan lived in different areas around Tswantsha.

Basarwa living in this general area appear to be related to the Basarwa found in the Nata area, as some informants claim. One informant, claiming to belong to a group of Basarwa known as Tsiretsire, says that when he was still a teenager their family abandoned their Bangwato masters living at Mmeya (commonly known as Mokubilo) to go and live under Kgama (the father of Sekgoma) around the Nata area. Whilst at Mmeya, they lived under a Mongwato known as Dijeng. It was not unusual for Basarwa to change masters in this way (see Hermans 1977). This shows that Basarwa could move over long distances and that Basarwa groups found in Tswantsha and those found in the Nata area were closely related. It is possible Bangwato found some Basarwa occupying the Tswantsha area and hired them as their herdsmen. The Xhaise (or Tchaite, as referred to in Cashdan 1979) is another group that lived in this area. According to an informant, a Xhaise, they migrated from the direction of Maun, along with their Bangwato masters and settled at Ganeganega. Bangwato who had cattle in these areas dug boreholes for watering their cattle which were cared for mainly by their Basarwa servants. Bangwato spent most of their time in Serowe. Basarwa who cared for these cattle were not paid, but they had rights to the milk. Otherwise they fended for themselves. Salt trade was one of the ways they could acquire grain and maize from the groups that practiced agriculture. When the salt is ready, Basarwa head for Tswantsha to go and collect salt and usually these will be small expeditions of not more than ten people. These expeditions could at times take up to two days to reach the salt source. According to informants, Tswantsha belonged to Basarwa, but it is difficult to tell which group. It is also mentioned that other groups that had interest in collecting the salt had to obtain permission from the Basarwa who owned the salt source. However, nobody was ever denied access to the salt and this includes also the Bantu groups that had interest in collecting the salt. Some of the groups that collected salt could come from as far as Rakops, Mopipi and the general Boteti River area.

Xoichiba, another salt producing area, is about 30 km North of Mosu village. According to informants, a small hill outcrop visible in the southeastern direction from Kubu Island is very close to, and roughly to the North of Xoichiba. Xoichiba could have been less significant than Tswantsha. Nevertheless, it seems to have been an important salt bearing location exploited by ethnic groups of similar composition to those of Tswantsha. According to an informant, when they were relocated to Mosu around 1941, they found Xoichiba exploited by Basarwa. This may suggest that the location was not very popular among groups living far away. Aside from Mosu, areas such as Chibagena, Xobakhwe and others, which are mostly Bangwato cattle posts, also benefitted from this salt source. They employed the same methods of exploitation as at Tswantsha.

Debeekam seems to have been a salt producing area of considerable worth. Informants locate this source between Mopipi and Gweta. More precisely, it is said to be between Maditsenyana and Mawela. An informant in Nata described Debeekam as a stream on the

surface of the pan. Salt here, according to informants, forms both on the surface of the pan and on the bed of the stream. This area was generally exploited by the people of Mopipi village and neighbouring settlements.

Nata River rises in the present Zimbabwe and empties into Sowa Pan south of Nata village (Cashdan, 1979). An informant alludes that in Zimbabwe the river is called Manzimnyama which directly translates as 'black water'. When the river enters the pan, it divides into smaller channels that hold water in pools created in these channels. Slabs of salt form beneath the water in these standing pools. From the village of Nata and up to the pan, the river is concentrated with salt and the concentration increases as you approach the Sowa Pan. In the dry season, salt can be seen crystallizing in the river even in the vicinity of the village. The slabs of salt forming in the river are largest in the pools closest to the pan. This area has been named 'Sua' by the Bashuakhwe of the area. Sua translates as 'itchy'. Informants say that when Bashuakhwe reached this part of the river they unknowingly plunged in to wash and in a moment everybody was itching all over, hence the place earned its name. It appears that Basarwa were the predominant group when it came to salt exploitation; especially noted for their dominance in salt exploitation are the Bashuakhwe.

It is said that salt in the pools is found in stratas, possibly formed from the yearly flows of the river. Informants further mention that the salt that stays too long in the water tends to be pinkish in colour whilst recently formed salt appears white. Outside the river, on the pan surface, salt precipitates over large areas in the dry season. This salt is said to be pinkish in colour. People who exploit salt in the Nata area give preference to the salt formed in the river. They regard salt formed on the pan surface as just *lehulo* (foam) and say that it is too frail. Salt in the river is more resistant to dissolution when exposed to water. The pools from which the salt is exploited are ascribed different names by the local people. These include: Mmadigwetlha, Ledutela la kubu, Xampapa, and many more.

As at Boteti, the end of winter and early months of spring mark the period when people harvest the salt at Sowa. At this time water levels in the river will be approximately knee high or lower. Usually the salt is not visible when under water. Basarwa therefore would use their digging sticks to successively poke through the sand on the river bed. If the stick encounters a layer of salt in the process, a deep resonating sound is produced. Having located the salt the person will then exert more force to break through the salt layer. Huge slabs of salt are produced from repeated actions of this nature. An informant mentions that sometimes axes are used to cut out salt blocks. Certain tree species were favoured because of their strength for crafting the digging stick. These include *mopane*, *motsiara*, *meselesele* and others. The digging stick was slightly sharpened at one end so that it could drive through the salt layer with ease. Usually the size of the digging stick was a matter of personal preference. Blocks of salt removed from the river are washed of mud and placed on the grass, in direct sunlight to dry.

Basarwa were mostly attracted by wild animals to come to this area. As one informant says, they settled at Sowa in their pursuit of wild animals. During the dry season, the animals are attracted to Sowa by the water standing in pools. Here Basarwa would put up a temporary camp that could last even for more than a month. It is possible Sowa was discovered during one such seasonal movement. On settlement at Sowa, the environment was exploited for food, and salt was another resource that was exploited. Salt by then could have been exploited for culinary use only, for meat and bitter plant foods. With time, salt became important as a trade item, especially to Bokalaka. As the importance of salt was realized, people could now come and camp near the salt source primarily to exploit the salt. Basarwa informants claim that they did not put up any shelters whilst camped at the salt

source. They usually brought along with them some food from their home bases which was augmented by food gathered and hunted whilst they were at the new camp.

Some people who lived quite close to the pan made frequent day trips to collect the salt. Basarwa acquired a few donkeys when they began to interact with Bantu groups, especially Bangwato, who had cattle posts in the area. Donkeys soon became the major mode of transporting salt in the trade. Although some Bantu individuals joined in the trade, Basarwa had the lion's share in the exploitation of salt.

In the Boteti area, salt was most commonly carried in animal skins. Usually skins of wild animals, especially the impala, were preferred for making the bags. Large bags could be made by sewing together two animal skins. Bone or wood would be used to make the needles, and for thread tough tissues lining the vertebral column of an animal were used. Thread from cow was considered not strong enough though it was sometimes used. Also used for carrying the salt were baskets woven from the leaves of a *mokolwane* tree. Salt collected in baskets is usually carried by individuals whilst salt collected in animal skins is transported by donkey.

In the Nata area all the above mentioned methods were familiar but the most popular method was by donkey. The dried blocks of salt were bound together using thinly cut straps of leather to make a sizeable load for the donkey. Sometimes the straps were made from the leaves of the *mokolwane* tree. The leaves are twisted to squeeze out the juice. They are then woven together to make a strong tie. Two bundles of salt blocks are joined with a strap and placed on the donkey back such that a bundle hangs on either side. Before this step, it must be ensured that a protective layering of leather blankets is made to cushion the back of the donkey. The protection is also to prevent the salt coming into contact with the body of the donkey. If salt is allowed to contact the body of the donkey, it eats out the fur leaving a permanently bald patch. A variant of this method is that of using a sizeable branch to haft the salt block. An appropriate sized branch that is 'Y' or 'V' shaped is used. The salt blocks are tied onto one face of the branch and the branches hang on either side of the donkey. In this method, the branch creates the barrier between the body of the donkey and the salt blocks but still the salt workers provided a protective layering of blankets. On arrival at the home base the salt is unloaded and stored in the house, sometimes on a prepared raft. In the case of Nata salt, sometimes further drying was necessary and so the salt would be left in direct sunlight outside the house.

It will be remembered that salt that forms on the surface of the pan is considered too frail to be transported without bags. To solve this problem, this salt has to be processed. The salt from the pan was pounded in a mortar, transferred into a container and wetted with water that contains crushed bark of a *moretlwa* tree. The wetted salt is poured into a prepared pit of roughly 20 cm in diameter, and about 15 cm deep. Hot ash is piled on top until it covers the mouth of the pit. It is believed this crushed bark enhances the strength of the block as the salt solidifies. A stick is always stuck in the middle so that the salt cake comes with a hole in the middle. Prepared usually in the evenings around sunset, the salt is left in the pit overnight and usually it is ready in the morning. It is then removed and earth is scraped off. The salt is now ready for trade. The holes in the center are for handling convenience; a strap is passed through these holes and knotted at the ends, holding two cakes of salt. Salt cakes, at minimum two, would hang on either side of the donkey. Preparing the salt in this fashion was usually done outside the compound. Salt prepared in this manner was not popular in the Nata area.

Domestically, salt was mainly used in cooking meat and sometimes in plant foods to enhance the taste. One informant says that they did not use salt much in meat but preferred adding it to some fruits such as that of *mokolwane*. Salt became increasingly popular in

cooking with the increase in Bantu-speaking populations in the Nata area. In Bokalaka salt was used in meat but principally it was used in cooking *delele*, a small edible plant popular in Bokalaka that grows during the rainy season. Informants add that traditional salt was preferred over European salt for use in *delele*. When Bakalaka use table salt in cooking *delele* they usually add soda to enhance the taste and the texture. Traditional salt, because it is still unrefined contains a lot of impurities and soda is one of them.

In the Nata area salt was traded mainly to Bokalaka and was exchanged mainly for sorghum grain. Although its origin is difficult to establish, most of the informants agree that the trade was born of contact with Bakalaka, and to a lesser degree with Bangwato. Basarwa claim to have acquired donkeys from the Bangwato and Bakalaka. With their introduction, there was an upsurge in trade activity as much larger amounts could be carried and more frequently. Some of the donkeys, as informants claim, were bartered from Bakalaka in exchange for biltong (J. Ntuanane, 23-06-97). Most of my informants mentioned that they found the salt trade already in existence. It is possible therefore that this trade existed long before Botswana was declared a protectorate. In the exchange, it is claimed there were no standard prices. However, baskets of different sizes were used to measure quantities of sorghum in the exchange process. Informants mention that *seroto*, special baskets with a leather base normally used to store *mabele* (sorghum) in Bokalaka, was sometimes used as a measuring instrument in the exchange. Besides sorghum other items were also involved in the trade. From the Nata area, Basarwa traded also in *mokolwane* leaves which were used in weaving baskets. Finished baskets were also sold. Other items from Basarwa included biltong, tanned skins sometimes made into blankets, straps for harnessing cattle and other items. Goods that were received from Bokalaka included glass beads, gun powder, tobacco, *dagga*, and other items.

In some instances, Bakalaka would come to Nata and trade some items for salt and other things offered by Basarwa. But in most instances Basarwa did much of the travelling in this trade relationship. They carried their salt on donkey backs whilst people travelled on foot. On average, the journey to Bokalaka took about four days. When going to trade, Basarwa in many instances traveled in small groups of about ten people. On reaching their destination, they would make temporary camp outside the settlement where they would be trading their items. It was in this camp that exchange was conducted; those who had interest in buying would go to these camps. This trade usually ended with the two groups making friends in their midst. With friendship ties established, the next trade session would not necessarily be conducted in camps outside settlement, but instead, Bakalaka families would host their friends when they arrived and trade would be conducted from those homes.

In the Boteti, it appears the salt from Xoichiba was traded mainly to Bokalaka. This is probably because of the nearness of the salt source to Bokalaka. Salt from Tswantsha went to both Bokalaka and to people living at the Boteti River. At Boteti River, salt was traded mainly for maize, whilst at Bokalaka the main trade item was sorghum. In this area, donkeys still served as the main vehicles in the trade. When the Khurutshe migrated to Boteti River from Shoshong around 1750, they found the Teti already occupying the area and practicing farming on the floodplain (Gabotlale, pers. comm.). The Teti are Basarwa. It is possible that they interacted with other Basarwa who lived in the areas around the salt producing locations, especially at Debeekam and Tswantsha. Salt in the Boteti therefore could have been traded to the Boteti River people even before 1750. Basarwa were later joined in salt exploitation by other ethnic groups that came into the area. It appears that salt was never short of demand; as Gabotlale (pers. comm.) notes, many ethnic groups around the Boteti River in times of drought engaged in the salt trade in spite of the long distance from the salt sources, and did not wait for those near the salt producing areas to bring salt to

them. They traded with the Bakalaka in Bokalaka for sorghum and millet. In both the Boteti and the Nata areas, salt trade must have been at its optimum in times of drought.

In the period before European infiltration into both the Nata and the Boteti areas, the salt trade flourished and this can be regarded as the optimum phase of salt trade. The decline in the trade activity, according to the information gathered, came at different times and for different reasons. In both areas, salt trade after the acquisition of donkeys seems to have blossomed until the introduction of cheap and easily accessible European salt into the area. This salt gradually overtook traditional salt until today, where only occasionally people collect salt to trade. In the Boteti area, as informants say, a major decline in the salt trade was witnessed during the drought that affected the area in the 1960s. During this time the government gave out maize meal and beans to help alleviate drought; as one interviewee points out:

From about 1965, the government issued out soup and maize meal in packets and beans too; Basarwa now that they are given, stopped selling the salt. (Abofilwe Charlie, 12-08-97)

It seems this phenomenon, coupled with increasing infrastructural and economic developments in the area saw the end of the salt trade.

The first noticeable cause for the decline of salt trade in the Nata area was adoption of agriculture, especially farming by the Basarwa. According to informants, this started during the reign of Sekgoma in Ga-Mangwato. Farming became increasingly popular among Basarwa during the reign of Tshekedi Khama who as some informants say gave ploughs to plough the fields (G. Botsang, 23-07-97). Not all Basarwa engaged in farming, and those who did had small fields around their compounds and so they still had to engage in the salt trade to augment their produce and other available food resources in the area. Salt trade therefore continued but at a lower intensity. The continuity of the trade was partly due the fact that Bakalaka still needed the salt for cooking *delele* (a grass or herb cooked and used as relish). With growing interaction between Basarwa and especially Bakalaka through the trade, livestock theft increased. According to the informants, Tshekedi was worried about the situation and gave an order that instructed Bakalaka to cease movements in the vicinity of his cattle posts. At this time, Basarwa and Bakalaka had established very close relationships from interaction during the trade. Unable to conduct their trade freely, they continued the trade behind the chief's back. This was not so difficult as the chief did not assign any regiments to enforce the order. Informants further allude that Tshekedi, sensing no improvement, appealed to the colonial government to intervene and thus the Dukwi fence was erected to monitor cattle movements. Many of the informants claim that the fence was a hindrance to the salt trade and stopped it. This fence was actually erected to control the movement of animals, especially the African buffalo, in a bid to curb the spread of foot and mouth disease. This fence, from Maitengwe Quarantine camp to Dukwi Quarantine camp, runs 86 km and continues through Makoba Quarantine camp (roughly in the southwestern direction) and into Ghanzi district (Foot and Mouth Veterinary Cordon Fences Map, January 1985, Botswana). The portion between Maitengwe and Makoba was erected in 1955. This date, therefore, marks the time when the salt trade drastically declined. The trade was not totally extinguished: informants allude that Bakalaka preferred local salt over European salt for cooking *delele*. Today, salt exploitation is not dominated by Basarwa but is an activity different ethnic groups engage in for various reasons. Salt today is used by some to preserve and keep animal skins soft, whilst they are waiting to be tanned.

With modern transport, people can now exploit salt in far greater quantities than in the past. Many farmers use this salt for cattle. Although salt trade has not been totally abandoned, European salt has replaced the traditional salt and only occasionally do people bother to go and exploit the traditional salt. Mostly this salt is not collected for trade now but for domestic use.

Salt in the prehistory of Sowa Pan

The margins of Sowa Pan appear to have been favourable locations for settlement by iron using communities from about AD 800 – 1800 (Reid & Segobye, 2000). A series of discoveries have been made on the margins of Sowa Pan by James Denbow during an archaeological reconnaissance for BP Soda Ash project at the Sowa Pan (Denbow, n.d.) and by Mike Main whilst conducting management training exercises between 1993 – 1996 along the escarpment that runs parallel to the southern margin of Sowa (Main, n.d.). The sites discovered represent a continuum of cultures spanning from Zhizo of about the 9th century to the present. The Archaeology Unit of the University of Botswana was engaged in a project in this area from 1996 – 1999. One major concern of this project was to try and find out why these culturally distinct groups continuously preferred this area for settlement.

Iron age communities have always viewed salt as an important commodity and have widely traded it during the first and second millennia (Fagan *et al.*, 1969). The Zimbabwe and Khami traditions (13 – 18th centuries) are known to have engaged in exchange activities between the regional centers and the capital. The trade items included grain, livestock, beads, salt, ceramics, gold, and other items, most of which today are archaeologically invisible (Hall 1987).

Martin Hall (1987) mentions that Toranju, a Zimbabwe period regional center, may have had a more specialized economic and political relationship with the central state. Toranju, as well as other settlements located around the Sowa Pan may have been located there to control the processing of salt and its trade to Zimbabwe. This being the case, it is possible that sites from other periods found along the margins of Sowa Pan may also have exploited the salt. Archaeological work at some of the stone wall sites of the Zimbabwe tradition revealed items associated with high status such as copper, beads, and ivory: in the past salt was indeed exchanged for precious goods such as these (Fagan *et al.*, 1969; Roberts, 1973).

At Mosu 1, a site on the escarpment behind Mosu village, Andrew Reid of the University of Botswana recovered a cache of ivory bangles which could have been introduced into the site through some form of exchange with other societies. Although we cannot say that the ivory was exchanged for salt, we can be sure of the existence of trade in this area. From fine sieving at this site glass beads were recovered which also could have been introduced into the site through long distance trade. Because the salt sources of Tswantsha, Xoichiba, Debeekam and Sua are within accessible distances from these archaeological sites, it is likely that salt was indeed used in the trade.

Salt from Makgadikgadi Pans could have been used as tribute by the commoners to the regional centers and even to the central state, alongside cattle. Garlake (1978) records that at the regional center of Manikweni, cattle dominated the faunal remains (40-45%) with most of the beasts being of tender meat bearing age (18-24 months). This is in sharp contrast to the commoner sites' middens that had only about 16 percent cattle and with more sheep and goats. He concludes that prime stock must have reached the elite through tribute or as the product of herds distributed in a form of patronage. Roberts (1973) records salt being paid as tribute to the chief among the Bemba. Hall (1987) identifies Toranju as a Zimbabwe tradition regional center. We therefore cannot rule out the possibility of Toranju receiving salt from the commoner sites as tribute.

As the informants themselves acknowledge, salt that forms on the pan is too frail to be transported over long distances. You will note that the salt has to be exposed to sunlight and air so that it does not melt, therefore carrying it in bags is not ideal. Basarwa, and later Bantu-speakers who engaged in the salt trade preferred to bake salt into manageable cakes. Baking the salt made it more compact and resistant to breakage. The hole that was made in the center of the salt cake made it easy to be carried on donkeys as described above. In both the Nata and the Boteti areas informants alluded to instances when people would carry the salt to the trade points. These journeys took several days as the consumers or customers lived far, more than 80 km in the case of the Nata – Bokalaka trade.

These activities suggest the possibility of salt being specially prepared and transported all the way to Zimbabwe as tribute. Salt prepared in this fashion could even have been traded between the regional centers. In the case of salt obtained from Nata it entailed even less preparation as it needed no baking before it could be transported over long distances. Some informants in this region allude to instances when salt was traded to present day Zimbabwe, around the city of Bulawayo. An informant recalls an instance when people would come from Zimbabwe to Maitengwe and other nearby villages exchanging peanuts, sorghum, groundnuts and other items for salt.

According to Garlake (1973), Great Zimbabwe ranks in the classification of social anthropologists as a unilateral or coercive state rather than an organic or voluntaristic one, implying therefore that it had a thin economic base, susceptible to rapid dissolution if things went wrong. He further suggests that the collapse of Great Zimbabwe could partly be attributed to lack of salt as resources were directed to the then rising Mwene Mutapa Kingdom in the 15th century. Considering that the Khami state emerged at the collapse of Great Zimbabwe, perhaps the salt resources of Makgadikgadi Pans now sponsored a new and emerging state. A wall structure on the escarpment near Mosu village, believed by the local people to be the birthplace of Kgama the Great, is actually a Khami settlement high status wall (Huffman, pers. comm.). Other sites exist in the southern part of the Sowa Pan that possibly fit the description of a Khami settlement (Main, n.d.). The Khami state could have captured and re-directed the salt trade routes leaving Great Zimbabwe with little or no salt.

Conclusion

It is not easy to establish when salt was first exploited in the Makgadikgadi Pans, but through time people who lived close to the salt sources, especially Basarwa, have exploited the salt for various reasons including for trade. Basarwa in both the Boteti and the Nata area have exploited salt from when they were still nomadic to the time when they became sedentary. In the Nata area informants mention that they went down to the salt bearing areas in pursuit of wild animals, which concentrate in that area in the dry season, attracted by water in the pools in this part of the river. We can assume that trade in the Boteti was more intense than in the Nata area. More salt sources are known in the Boteti area and have been exploited regularly even to the present. Cashdan (1979) records that trading for grain is only a buffer for the Nata area whereas it is the basis of subsistence for the Boteti Basarwa.

According to informants, the salt sources were owned by Basarwa before the infiltration of the Bantu groups. Permission was sought from the owners of the sources before strangers could exploit the salt. No incidents are recalled when the Basarwa refused anybody permission to exploit the salt. It seems that the salt trade in the Nata area began to decline in the early 1900s when many Basarwa started turning to the practice of agriculture, which the informants generally believe was encouraged by chief Tshekedi Kgama, but which could have started during the reign of Sekgoma. The erection of the Dukwi cordon fence in 1955

is another factor that is believed to have contributed to the decline of the salt trade in this region. Many allege that these effectively closed the trade routes between Nata and Bokalaka and the trade was virtually extinguished. In the Boteti the trade started to die off in the 1960s, when the salt workers started relying on the food offered by the government for drought relief. Cashdan (1979) observes in the Nata area that trade has been greatly reduced and concludes that salt trade was not very important among the Basarwa. She further mentions that the demand in Bokalaka for salt was not high enough to make salt trade a reliable economic activity. Her observations however do not disqualify salt as an important trade commodity in the prehistoric times because as Alexander (1993) records, demand for salt is directly proportional to the scale of production. We must note also that Cashdan's study may have missed a lot of factors as it was general and not specific to investigating salt trade. Moreover we cannot simply rely on the present demand and supply to measure the same components in prehistoric times: care has to be taken when applying ethnographic information to interpreting the past.

Below the Sowa Pan escarpment we find land that is ideal for cattle keeping. There are also natural springs of running water at some points in the escarpment. These are attractive locations to settlement. We can therefore suggest that past settlement locations along the escarpment were not influenced by the position of the salt bearing locations but rather by other resources. This phenomenon may be interpreted to mean that salt trade in both the present and the past was not the major economic activity. Nonetheless, salt sources in accessible distances from the sites or settlements may have been exploited to augment the economic base of the concerned societies.

This study has relied heavily on interviews that were limited mainly to the villages of Mmatshumo, Mosu and Nata. Informants were scarce. As a result, inferences and conclusions were made on the basis of scanty information. Lack of transport further hampered survey around the known sites. It is possible, that salt resources mentioned in this paper may not be the only ones that exist in the pan area. This highlights the need for further survey. However, whilst this research has indicated the likelihood that salt was an important item in the past, it also indicates that we are unlikely to find any direct evidence for its exploitation. The salt comes readily in blocks that can be carried to the trade areas, therefore there is no production necessary. This being the case, there is only slim hope to find salt exploitation manifest itself directly in the archaeological record.

Notes

Mr. Kabelo Matshetshe is currently a teacher at Tutume McConnell College. His research essay was written in 1998 under the supervision of Andrew Reid. The original contains eleven photographs which have been omitted for space. The text was lightly edited for style.

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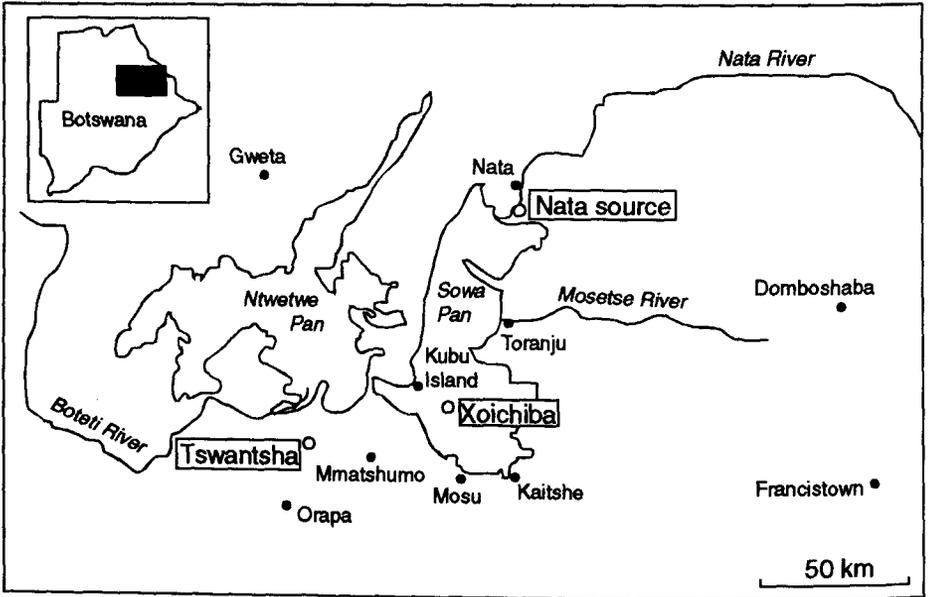


Fig. 1. The Makgadikgadi Pans with the place names mentioned in the text.