

Archaeological Sites Survey from Kisiju to Dar es Salaam

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Introduction

An archaeological survey was conducted along the coast from Kisiju to Dar es Salaam in July and August, 1996. This survey included the islets of Kuruti and Boza and extended approximately 10 km to the interior from the seashore. The survey involved land walk over for surface finds. Shovel test pits of 50 cm² were set after an interval of 4 kilometres for checking on underground occurrences of archaeological materials. In places where surface finds were located we also set shovel test pits to record the types and the stratigraphic context of the finds. In this survey 32 sites were recorded ranging in cultural phases from the Later Stone Age, Early Iron Age, Late Iron Age (also known as the Islamic Period) and the Historical period. Environmental attributes were also recorded, including site locations - inland or at the beach, the reliability of the soils for agricultural activities, the type of vegetation cover and accessibility of the sites to fresh water. This information was collected in an attempt to understand factors which led to site patterning in the research area. This paper gives a preliminary description of our results.

General information

The area of survey between Dar es Salaam and Kisiju is located approximately between latitudes 6°49' and 7°21' S and longitudes 39°14' and 39°33' E. However, the research did not cover the whole area within these coordinates because the survey was based on a coverage of only 10 km from the seashore; the real covered area appears irregu-

lar (Figure 1). The coastal plain between Dar es Salaam and Ras Dege is 10 km wide and 8-10 km from Ras Dege to Kisiju (Temple 1970:33). The general elevation of the land is 60m (approximate 200 feet) above sea level. The area from Dar es Salaam to Pemba Mnazi is made up of alternating sand beaches and cliffed coral sea shore. In comparison to the Dar es Salaam - Bagamoyo area (north east), the sand barriers to the south east of Dar es Salaam as far as Dege are less extensive forming dams across or partly on the mouths of small river streams. This has led to formation of estuaries in areas like Mbuamaji and Mjimwema. The sites from Dar es Salaam to Ras Dege are sheltered from the southern monsoon. Most of the areas south of Ras Dege are cliffed and its only south of Pemba Mnazi that sand barriers form the coast (Temple 1970:31).

At Ras Kimbiji, coral reefs rise to the heights of between 20 and 30 metres. In most of the areas the cliffs are very steep. This area is a part of the "Mtoni Terrace" (Cilek 1976). It consists of coral platforms and deposits of sand (Cilek 1976:52-53). These form narrow strips between the ocean and the raised coral platform of Mtoni Terrace extending directly to the height of 20-25m of Tanga terrace. Pemba Mnazi represents the most southern coral platform of the Dar es Salaam area on the Mainland coast north of the Rufiji delta. The area between Pemba Mnazi to Kisiju down to Rufiji Delta consists of Holocene black sand deposits. Silts and fine grained sands from the Rufiji Delta dominate the area south of Kisiju.

The coastal areas from Dar es Salaam to Kisiju are described by Hathout (1983; Tanzania 1976) as undulating entisol. They are sandy with moderately good drainage. Hathout described them as having "moderately severe limitations that restrict the range of crops or require special conservation practices". The natural vegetation described as bushland, thicket and savanna. This area receives an average of 1000-1400 mm of rainfall per annum with two growing seasons. The long rains and main growing season starts at the beginning March and ends in June while the short rains and second growing season starts at the end of October and ends in December.

Recorded sites and finds

Kirungwi-Mkundi (Site 1, 7°21'S, 39°19'E)

Kirungwi is located about one km to the south east of site 2 (Figure 1) on the sub islet of Ziweziwe and is about one km north west of the Ziweziwe site (Chami and Kessy 1995). At Kirungwi is a Later Stone Age site. No test pit was done at the site. This Later Stone Age site consisted of a scatter of quartz flakes and pottery eroding from a cliff as a result of ocean water (Figure 2). The lithics and pottery suggest the site is contemporary with the site found in Ziweziwe, Kisiju in 1994 (Chami and Kessy 1995). The pottery is typical Early Iron Age. Though the materials found at the site are very scattered, the area represents a good place to investigate the connections/relationships between Later Stone Age and Early Iron age groups. Unfortunately, the Later Stone Age site of Ngevu (see below) in Shungubweni did not contain Early Iron Age ware. A site recently discovered at the Rufiji district has shown similar cultural materials (Chami and Mapunda, forthcoming). A piece of thin light green glass and blue glass bead were as well found at the site. That piece of glass has many bubbles in the interior and was made using the blowing technique.

Kerekese Village (Shaurimoyo, Site 2, 7°20'S, 39°19'E)

In this area, two sites were located approximately 1 km from each other. The east Shaurimoyo site is approximately 2 centuries old. This was confirmed by the presence of Chinese blue on white ware and European ware of the 18th century. Local pottery was also found in the site. The west Shaurimoyo site has large concentration of local potsherds on the surface. At the surface were blue and white Chinese ware and European ware of the 17-18th and 18-19th centuries respectively. A test pit revealed only local pottery at 5 to 50 cm below the surface.

Mpafu (Site 3, 7°17'S, 39°21'E)

This site is located at approximately 850 meters north of Mpafu village. A test pit revealed

local potsherds extending from the surface to 55 cm. On the surface, 18-19th century European and Chinese porcelain were also present.

Kuruti Islet (Sites 4, 5 and 6)

This is located to the southern east coast of Shungubweni. Three sites were recorded in the islet. Site 4 (7°17' S, 39°23' E) is located in the southern part of the present Kuruti village and extends for approximately 300 m². The site has been extensively eroded by the sea. A high concentration of local potsherds were recovered from 10 cm to about 95 cm below the surface. Shell middens were also observed on the eroding surfaces of the site. Despite an extensive assemblage of cultural materials exposed by the sea waves, none of the pottery from the site was decorated. Some of the potsherds resemble those of Mdimuni site (Chami and Kessy 1995) in that they are long necked with thin built bodies without decorations. Site 5 (7°15' S, 39°24' E) consists of local potsherds from the surface to 30 cm. Local pottery and 18th-19th century European ware found at the surface of site 6 (7°15' S, 39°24' E). Three of the local potsherds were decorated (Figure 3). One, painted in red on the inside, dates the site to the 15th century (Chittick 1974). A shovel test pit done at the site revealed local potsherd from the top to 60 cm below and one of those had a zigzag line incision around its neck.

Boza Islet (site 7, 7°15' S, 39°25'E)

Boza islet is located on the eastern side of Shungubweni. The islet cultural development is distinct despite its proximity to Kuruti islet. Two sites at Boza islet consists of stone structures. At the southern tip of Boza islet (site 7) are ruins of stone house and a stone tomb. A wide range of cultural materials including local, Chinese, Near East and European wares were collected from the surface. Some of the Near East wares were a light green sgraffiato and early monochrome ware which dates the site to 13th and 15th century respectively. Other pottery from the Near East include three pieces with buff greyish paste and one is yellow glazed to the outside without glaze to the interior. The rest of the pieces are buff glazed. Of the Chinese wares, one was a 13th-14th century grey glazed celadon made out of a white paste and two were blue and white

Figure 2: a-e: Kirungwo stone artifacts; f: Kirungwi pottery; g-h: Funza (17) pottery; i-k: Kiperani pottery; l-m: Jinobaya pottery.

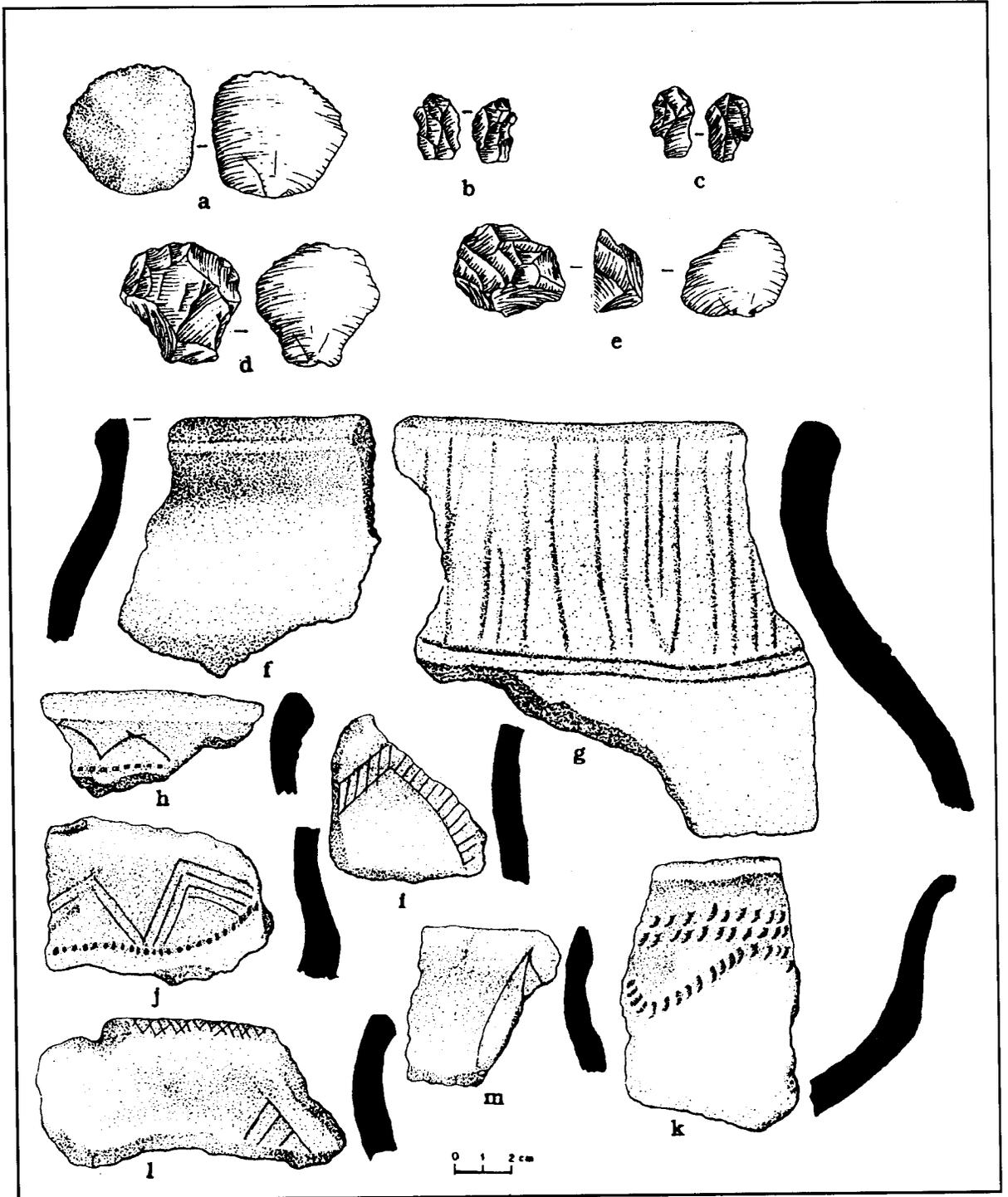
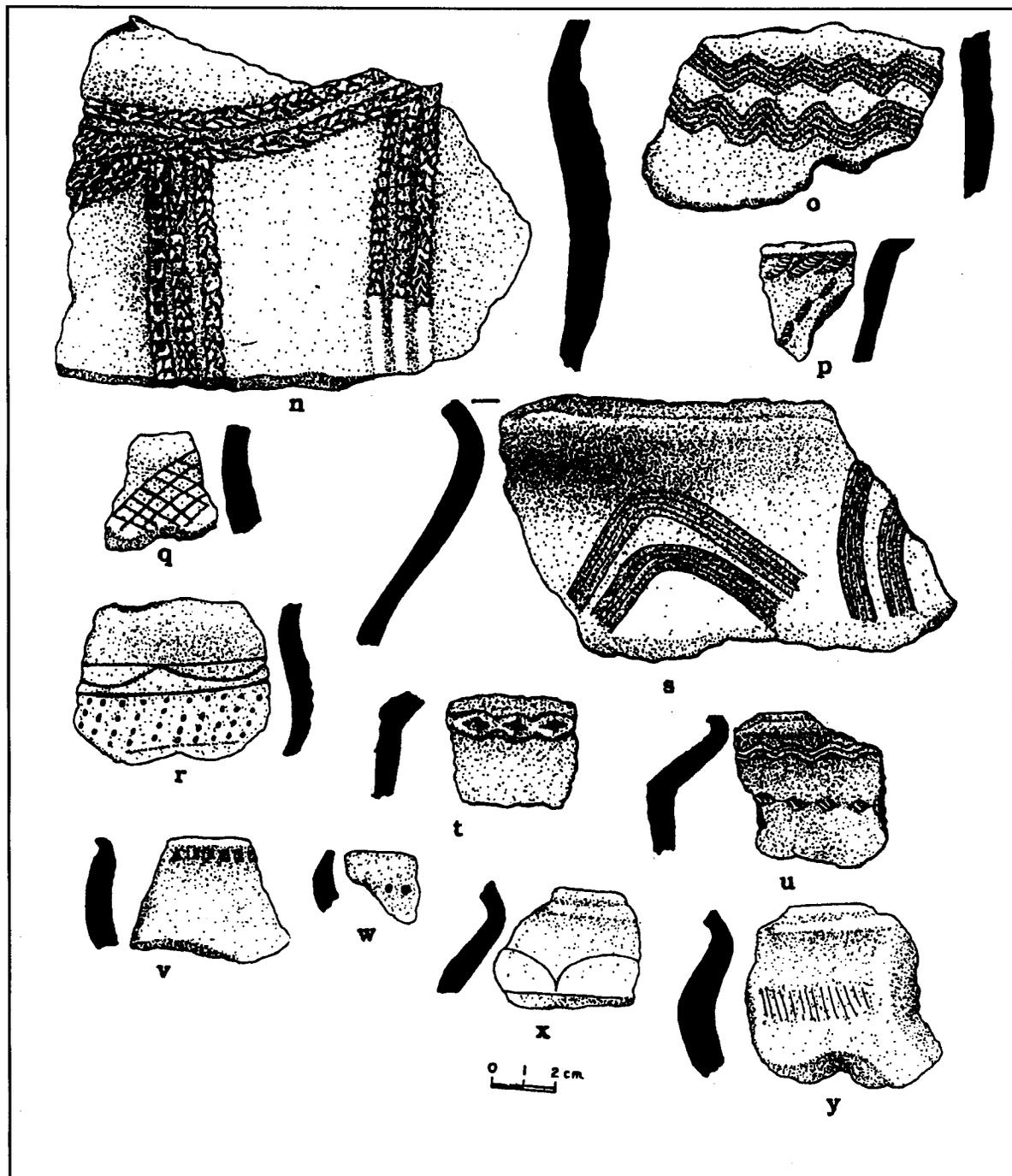


Figure 3: n-r: Pemba Mnazi (19) pottery; s-u: Kuruti pottery; v-w: Mbutu Bandarini pottery; x-y: Mbuamaji pottery.



sherds of the 15th -16th century. The fourth Chinese sherd was cream glazed and decorated with dark greenish and faint blue decorations. The materials evidences above suggests the site to be contemporary to Kilwa at some stage (Chittick 1984). The only European ware at the site is of the 19th century. Other materials include unglazed cream buff ware decorated with incised quadrangles, a blue glass bead and a light green moulded glass with ridges (origin of these imports is not yet established). The rest were clay lump, iron slag probably from iron smith industry and a granite rock. The granite rock is not of coastal origin, therefore, probably imported from the interior.

Boza (Site 8 and 9, 7°14'S, 39°25' E)

At approximately three hundred metres from the present village settlements is site 8. At the site is a mosque ruin. Local potsherds and animal bones were recovered from a shovel test pit done at the site from 25-80 cm below the surface. Another test pit was done at site 9 approximately 400 meters north east of site 8 and local potsherds including a burnt clay bead were recovered from 0-95 cm. Clay beads have been found in other sites dating from the 12th-13th century as well as in the 16th-19th century A.D. (Chittick 1974). No other reliable dating materials were found at this site, therefore, the dating of the site is not certain. However, the stratigraphical context of the cultural deposits from both test pits suggests a long time occupation.

Ngevu (Site 10, 7°13'S, 39°24'E)

Ngevu site is located approximately 5 km southeast of Shungubweni village. To the east of the site is a swamp beach. A concentration of local potsherds was found in eroded surfaces. However, the concentrations are found in a layer of only 20 cm depth. The concentration of these pots suggested that this may have been the remains of salt making. Most of them were identified to be bowls and basins. An old man from the village explained to have seen their fathers and grandfathers making salt by using pots although he did not have the knowledge of this particular site. Scattered Later Stone Age artifacts made out of quartz were as well observed from the area. These scatter of stone arti-

facts extend for approximately three kilometres north to Mkungu. A blue glass bead was as well recovered from the site.

Kiperani (Site 11, 7°12' S, 39°24'E)

This site is located approximately 800 m north of Ngevu. The eastern side of the site lies on a mangrove swamp and has been severely eroded by the sea water. At the eroded surfaces were concentrations of local potsherds including triangular incised ware (TIW) and special sandstone (soapstone like) probably used for sharpening metal equipment. An shovel test pit done at the site revealed animal bone and local potsherds. Among the local potsherds found was a TIW pottery found at base of cultural layers, 50 cm below the surface (Figure 2). However, in comparison to the concentration of the deposits from the eroded surfaces, the test pit results represents very low concentration. The TIW pottery dates the site to the 8th-11th century. A few Later Stone Age artifacts were found at about 300 m south of the site. This is an implication that the site predates the Iron Age.

Mkungu (Site 12, 7°12' S, 39°25' E)

This site is located approximately 1.7 km north east of Kiperani and approximately 500 m south west of Manji salt work. At the site are scattered Later Stone Age lithic artifacts and local potsherds. Only one local sherd at 50 cm below the surface was recovered from an shovel test pit done at the area. On the western side of Manji salt work are surface scatters of local potsherds. The pottery awaits further analysis.

Kigunda (Site 13, 7°12' S, 39°25' E)

A sesanian Islamic and local potsherds including TIW were found at an eroded surfaces on the sea beach swamp at the site. This evidence dates the site to the 9-11th century A.D. A shovel test pit done at this spot of the finds revealed nothing in the first 40 cm. At this level the soil was wet clay indicating that we were at the water table. However, another test pit excavated about 400 m to the south yielded heavy deposits of local undecorated pottery from 0-70 cm below the surface.

Shungubweni kwa Kimweri (Site 14, 7°11' S, 39°24' E)

This site is located at a bluff close to ocean inlet at the mouth of river Mbezi and to the immediate east of the Kikunguni river (a tributary of river Mbezi). Local pottery (one painted on graphite), Persian ware and blue and white Chinese ware collected from the surface date the site to 12th-13th and 15th century (Chittick 1974). A shovel test pit was dug close to a grave (tomb) claimed to belong to a ruler (Kimweri) but nothing was obtained.

Jino Baya (Site 15, 7°12' S, 39°21' E)

This site is approximately 7 km from the ocean shore and about 3.3 km west of Shungubweni village. A shovel test pit done at the site produced local pottery, a piece of iron and iron slag at 30-60cm below the surface. Based on the TIW pottery (Figure 2), the site dates to the 8-11th centuries. Both TIW and iron materials were obtained at the base of the cultural layers.

Kikurwi (Site 16, 7°9' S, 39°22' E)

This site is located near a small lake at one of the tributaries of river Mbezi south west of Funza village. Survey of the area revealed surface scatters of local pottery. The pottery await further analysis. A shovel test pit done at the immediate east of the river revealed nothing to the level of 40 cm below surface.

Funza (Site 17, 7° 8' S, 39°23' E)

Site 17 is located approximately 4 km south of Funza village. A shovel test pit done at the site revealed Early Iron Age pottery at 50-65 cm below the surface. This type of pottery is thickly built with bevelled rims decorated with punctates or comb stamping and horizontal line incisions. With exception of the incisions this pottery resembles those discovered at Mkundi River Later Stone Age site (Figure 2). With the present available evidence the site predates the 8th century A.D. (Chami 1988; 1994). Similar type of pottery was recovered by the Field School of the University of Dar es Salaam in July-August 1996 at the Rufiji District (Chami and Mapunda, forthcoming).

Funza (Site 18, 7°7' S, 39° 24' E)

A shovel test pit was done at approximately 500 metres to the east of Funza village. Plain sherds were collected at 0-30 cm below the surface. Below that level to 80 cm the sherds were decorated with two lines of comb stamping along the shoulder.

Pemba Mnazi (Site 19, 7°10' S, 39°29' E)

Site 22 at Pemba Mnazi is located to the south west. This site is located at the profile been eroded by the ocean at the delta of river Mgungani/Muruwani. A large percent of the pottery recovered at the site are decorated than from any other visited area. Thirteen different types of decorated pottery were identified from the site (Figure 3). The most unique feature in these pottery is the application of decoration on appliqué (Figure 3-n). This type of decoration technique is not common along the East African coast. Local people interviewed about the knowledge of the site claimed the site to have been used for burial activities. This suggests that the decorated pottery were used for ritual activities. In contrast the 18th-19th century site at Kimbiji (site 25, see below) used imported pottery for ritual activities at the grave yard. One shovel test pit was done at the site and two more test pits to the west of the site but no cultural materials were found.

Pemba Mnazi (Site 20, 7° 7' S, 39°31' E)

Approximately 800 metres to the southeast of Pemba Mnazi is a site with high concentration of cultural materials. The site is approximately 1 km x 500 metres. It is currently being eroded by the sea. A constructed road from village to the beach shows in its profile local pottery and shells from the surface to a depth of 90 cms. A 1892 Germany coin (*Deutsch Ostafrika*), European ware of the 18th-19th century, and orange glass beads were collected from the surface. A shovel test pit done at the area south of the road revealed cultural materials from the surface to the depth of 1 metre. Some of the pottery from this site have great affinity to the pottery found at the graveyard at the river

Muruwani/Mgungani suggesting the graveyard was of similar age. Evidence of red painted pottery dates the site to back to the 15th century A.D. (Chittick 1974). Most of the painted pottery are bowls.

Pemba Mnazi (Site 21, 7° 8' S, 39°30' E)

The site is located 3 km north east of the present village of Pemba Mnazi above an ocean bluff. Cultural materials were recovered from 0-40cm below the surface. Materials include European ware of the 19th century and local potsherds. Local pottery from this area have close affinities to those found in the grave yard (site 22) and those found in site 21.

Buyuni Mbuyuni (Site 22, 7°8' S, 39° 31' E)

A shovel test pit done at the area revealed cultural materials from 0-30 cm below the surface. All recovered pottery were local. Surface collection included a number of the 18-19th centuries European ware.

Buyuni (Site 23, Kibungo 7°5' S, 39°32' E)

Buyuni village is located approximately 1 km west from the Indian ocean. Surface collection revealed local pottery. Some have similar decoration motifs to those found at Pemba Mnazi. Shovel test pits were dug to the south, west and north of Buyuni. Only recent local undecorated pottery were recovered from one test pit located to the west of the main road to Dar es Salaam close to river Katembo. The pottery were recovered between 0 and 30 cm below the surface.

Kimbiji Pwani ya Kazi (Site 24, 7°0' S, 37°32' E)

This site is located about 3 km south east of the present Kimbiji town on a fertile plain at the bottom of a cliff, half a km north of the lighthouse at Kimbiji. It is approximately 4 hectares. Within the site is a mosque ruin which the walls are still standing. Based on the evidence of blue on white

Chinese ware and blue green glazed Persian ware the site dates to the 15th century. The site is very rich in local potsherds but most of the sherds were undecorated. Only one sherd with incised lines was recovered at the site. A shovel test pit done at the site revealed local undecorated pottery daub and shells from the surface to a depth of 70 cm.

Kimbiji (Site 25, 6°59' S, 39°32' E)

This site is located approximately 300 metres to the east of Kimbiji town. At the site are stone ruins with a high concentration of local and imported potsherds on the surface. There is also a ruined mosque which is believed to have been constructed in the 18th century A.D. The area surrounding the mosque is a graveyard in which most of the graves are big sherds of 18th-19th century European wares used in ritual activities. A shovel test pit dug at the site consisted of a high concentration of local potsherds from the surface to 80 cm depth. Finds from the deposits suggest the site was occupied continuously for a long time. Proportionally, only few local potsherds were decorated from the site, which is probably contemporary with the site of Pwani ya Kazi.

Kanyegwa Mfunguni (Site 26, 6°57'S, 29°30' E)

The site is located above the ocean bluff, approximately 1 km south of Ras Kutani. Local potsherds were observed on disturbed surfaces. A shovel test pit done at the site earned local potsherds at 30-60 cm below the surface. The pottery awaits further analysis. No imported sherds were found at the site.

Ras Kutani (Site 27, 6°56' S, 39° 30' E)

The site is found on a plain land below an ancient ocean bluff at Ras Kutani. A big part of the site is at presently occupied by the Ras Kutani Hotel Resort. The site consists of ruins which traditions claim to have been a mosque. The mosque is also reported in the annual report of the Department of Antiquities (1959:21), and is now covered with heavy vegetation. We managed to view only a section of a standing wall. Local potsherds were

found in concentrations on the surface. A test pit dug 300 metres north of the Ras Kutani Hotel revealed local potsherds between 0 and 50 cm depth.

Mwanamkuru (Site 28, 6°54' S, 39°30' E)

This site is about 3 km east of Mbutu Bandarini. The site was found at a flat plain at the bottom of an ancient sea bluff. Within the site are standing walls of a mosque ruin, a few stone graves and abandoned well. Local potsherds and daubs were observed on the surface. A test pit revealed a high concentration of local potsherds between 0 and 50 cm below the surface. None have decorations.

Mbutu Bandarini (Site 29, 6°53' S, 39°28' E)

The site is located close to the beach approximately 2.5km east of the Mwongozo village and at the delta of Bandarini river. This is another site with stones ruins of a Mosque and houses. Around the mosque is a graveyard and an ancient well. The mosque at the site is said to have been built at the 14-15th century A.D. (Antiquities 1980:20). The site has heavy concentrations of local potsherds on the surface. Imports at the site include Chinese celadon of the 15th century, Chinese blue on white and European ware, both of the 18th century. A test pit revealed heavy deposits of local potsherds between 0 and 60cm below the surface. Very few sherds had decorations (Figure 3).

Ras Dege (Site 30, 6°52' S, 39°27' E)

The site is located along the beach approximately 4 km north west of Mbutu Bandarini. A test pit revealed local potsherds at 30 cm-100 cm below the surface. Most of the pottery recovered was undecorated. Only one potsherd had punctate decorations around its shoulder. Based on the evidence of local pottery painted in red (outside and inside), the site dates to the 15-16th century A.D. (Chittick 1974).

Mbuamaji (Site 31, 6°52' S, 39°25' E)

The site is located along the beach north of Mbuamaji town. One area of the site has already

been destroyed by a bulldozer. The site has a high concentration of imported and local cultural materials. Imported materials include Dutch copies of Chinese blue and white ceramics, and a Chinese blue and white potsherd, all dating to the 18-19th centuries. Others include Persian ware, glass, red and white beads, and Indian red pottery painted with black stripes. Some of the local pottery had incised decorations (Figure 3) while others were painted in red or graphite. The painted pottery dates to the 12-13th and the 15-16th centuries respectively (Chittick 1974). One of the local potsherds was found to have decorative motifs of the same type as those found at Shungubweni and Pemba Mnazi. The Mbuamaji site is distinguished from any others north of Pemba Mnazi by its wide range of cultural materials, both local and imported. Mbuamaji therefore, should have been a very prosperous settlement. At the site is a mosque with inscriptions dating to AH 1017 (1608 A.D.). Early work by Chittick at the site suggests the inscriptions to have been brought from another mosque (Chittick 1969), since its architectural style belongs to the 19th century. The new dates for the site (below) would suggest the inscriptions to belong to an earlier mosque at the same site.

Mji Mwema (Site 32, 6°51' S, 39°21' E)

This site is located at the immediate east of the modern town of Mji Mwema, and consists of stone ruined houses and a mosque. A test pit revealed local potsherds, European ware of the 19th century, glass and Indian ware, from 0-80 cm from the surface. The Indian ware had a red paste and was painted in black stripes. Lots of fish bones were recovered. The annual report of the antiquities division for the year 1958 reports to have found a light green glazed Islamic ware which dates back to the 14th-15th centuries (Antiquities 1959:21). Although we did not find reliable artifacts to date the site back to this century, the cultural stratigraphy (depth) suggests the site to have been occupied for a long time. Even though on the base of artifact finds, the site of Mjimwema seem in many respects to be contemporary to Mbuamaji.

Information on areas without sites

Tundwi (7°4' S, 39°28' E)

A survey was conducted in an area of over 10 km south and 4 km north of the Tundwi village but only recent cultural materials were recovered. This area has fertile soils and is well supplied with surface fresh water. These two features played a great role in attracting settlement (see below). However, there is one notable thing. The area is located approximately fifteen kilometres from the ocean on its eastern side. Although the site is located within 10 kilometres from the ocean on its southern side, the area the south is bounded by the Muruwani area, which lacks surface fresh water supply and has sandy and infertile soils. Muruwani has no archaeological sites and is also presently without permanent occupation. The land at Tundwi is at present well populated with exception of the area beyond 3 km south of the village. However, this resulted from recent road communication with other areas.

Muruwani (7°10' S, 39°28' E)

An area covering approximately 5 km along the beach of Muruwani was surveyed. Muruwani consists of scattered scrub trees. The soils are infertile and no source of fresh surface water. The area is not sheltered and is affected by direct sea waves. The present situation shows that the area has not attracted any settlement. A survey along the coast and to the interior indicated no archaeological materials.

Discussion

The survey identifies the area from Kisiju to Dar es Salaam as an area with four levels of cultural complex. They are the Later Stone Age, Early Iron Age, Late Iron Age or the Islamic period and the Historical period. The Later Stone Age and Early Iron Age materials from Kirungwi are of the same phase as those of the Ziweziwe site located 1 kilometre south of Kirungwi (Chami and Kessy 1995). However, none of the materials at Kirungwi were found in their primary context; all materials were collected at the base of eroding surfaces. None of them were evident in the eroding profiles. Most finds, especially the Later Stone Age lithics, were

from very scattered deposits. No research has yet established the stratigraphic position of the lithic artifacts. One excavation trench (2 x 2 metres) at Ziweziwe in 1994 located only Early Iron Age materials. Further research is required to confirm the layout of the cultural deposits and to provide more knowledge about the relationship between the Later Stone Age and the Early Iron Age communities, an aspect that has not been well explored in the archaeology of the East African coast.

From the analysis of finds close affinities are noted between the Early Iron Age pottery from Funza, Ziweziwe and Kirungwi. This is based on the rim profile which is very thick and bevelled. However, the pottery from Kirungwi represents earliest Iron Age Pottery. Pottery from Funza is later than that of Kirungwi and some of it represents some features of TIW. Some of the TIW pottery features noted in Funza pottery include simple triangles, punctates and bevelled rims while the rest of the body is heavily built (Figure 2). These features possibly mark a transition between the Early and Later Iron Age. Pottery of similar cultural background (Early Iron Age) have been recorded from the Rufiji valley (Chami and Mapunda forthcoming) and from Limbo (Chami 1988). The pottery from Kigunda and Jino Baya represents later forms of TIW. This suggests a continuation of the Iron Age ceramics in the area of Shungubweni ward. The evidence of iron slag from Boza and Jino Baya suggests iron working. However, based on the limitation of this research no further details can be given on this technology.

Most of the sites recovered in other areas are those of Late Iron Age/Islamic and Historical periods. Although the sites are categorised into these general chronological periods there are remarkable differences among them. Some of the sites have deposits without or with very little evidence of imports such as the site of southern Kuruti islet. This site seems to be contemporary to Mdimuni site at Kisiju (Chami and Kessy 1995). Some of the sites have dense concentrations of local pottery without decorations or very little percent are decorated. Such sites include Pwani ya Kazi, Kimbiji, Mbutu Bandarini and Mwanamkuru. This pottery forms the base of the deposits and date to the 12-19th century A.D.

One of the basic aims of this research was to understand site patterns. Three features seem to be most important: the reliability of fresh water on the site, proximity to the ocean (since the ocean is considered as a permanent and reliable natural protein reserve), and evidence of high agricultural potential. Other factors affecting settlement patterns include belief systems, along with social, political, economical and ecological factors. These aspects will be addressed in future research.

Only four sites were found in the interior. These include the Early Iron Age sites at Funza and Jinobaya, and two others, at Kikurwi and Funza, whose chronology is not yet established. The rest of the sites found in the interior are recent (Jinobaya, Kikurwi and two at Funza). The cultural deposits from the interior sites were not as dense as those of the sites near the seashore. No archaeological sites were recorded on the western sides of Kerekese and Mpafu, east, west and north of Tundwi and Tundwi Songani. None of the sites from Pemba Mnazi to Mji Mwema have pre-11th century cultural deposits. With the exception of the Boza islet, no site is yet known to have stone ruins south of Pwani ya Kazi to Mkundi. Most of the sites from Pwani ya Kazi to Mji Mwema have stone ruins. There was a general trend for sites to be located on fertile soil. This was obvious for the areas around Muruwani and the area between sites 22-24. The area in Muruwani to the Mbezi river is completely sandy and infertile and no sites were found. The area between sites 22-24 is fertile enough to support agricultural crops but coral protrudes to the surface and this makes cultivation very difficult. The beaches also have very steep coral cliffs of about 20-30 metres high. At the same time surface or shallow pit fresh water resources above the cliff do not exist. No archaeological sites were found in this area either.

During the research, areas of fresh water and its availability to sites were recorded by means of personal observation and interviews. With the exception of Ras Dege, Kimbiji Pwani ya Kazi, Kigunda, Funza (site 17) and Mwanamkuru, most sites were located in areas where fresh surface water is available at a distance less than 500 m. This analysis is based on the availability of fresh water without the use of modern technology e.g. availability of fresh water from rivers, streams, swamps, water holes or the digging up of shallow pits by

using simple technology. The western side of Kerekese village has fertile soils with several areas with fresh water but despite that no archaeological settlements were found. Most of the areas to the west of Mpafu village though have excellent supply of fresh water have severely infertile soils and a large percentage of the land is covered with papyrus swamp, marsh and bog. The areas of Tundwi Songani especially those of the north and the south east have good fresh water supply but the soils around are very swampy during the rain season. The soils are good for swamp plants like rice. There was no archaeological material from the area. The area around Tundwi to the north east and west has excellent supply of fresh water and the soils around the area are fertile. However, only recent material was found.

Shift of Settlement patterns: Shungubweni as an example

The Later Stone Age sites are located from Shungubweni area to the south at Mkundi and Ziweziwe. The same applies to the Early Iron Age and the early phases of the (Iron Age TIW sites). No general conclusions can be established as a specific reason for the pattern of an early site's location, as political or social reasons may also be involved. But, generally, the location of sites along the beach seem to have depended on the nature of the harbour apart from other factors. Good harbours would have facilitated the work of people involved in marine activities. Changes which altered the expected functions of the site are suggested to have been the prime causes of the shift in settlement patterns.

At the present time the beach around the sites of Ngevu, Kiperani, Ziweziwe, Kirungwi and Kigunda are covered with silted swamp with mangrove vegetation. Sea water reaches these sites only during high tides. However, based on the nature of the landscape the situation suggests the presence of an open beach with shallow sea water at the time of their occupation. The presence of shallow sea water in the past at these harbours would have encouraged the exploitation of the marine resources by the use equipment made of simple technology, for example, simple boats. This type of resource exploitation would have been further encouraged by

the existence of islets on the eastern side of the harbours. The islets acted as barriers from direct strong sea waves therefore protecting the waters at the harbours. At the same time this encouraged fish breeding grounds as well as suitable grounds for sea shell exploitation during low tides. The Ziweziwe site is one of such locations where the remains of sea shells reveal an extensive exploitation of the marine resources (Chami and Kessy 1995).

Observation at the sites has shown that harbour locations have changed throughout time. This was caused by siltation problem associated with the growth of mangrove vegetation around the sites. A major contribution to this siltation was from the silt brought further inland to the sea by rivers. The small rivers on the beach from Kiperani to Kisiju were silt carriers but, the Mbezi river was a major agent in the siltation process. Observation from the survey indicates that the settling and distribution of the silt brought from the inland to the ocean depends on the nature of the working force of the ocean water as well as water circulation at the respective areas of deposition. The environment around the sites between Kisiju and Kiperani seem to have encouraged silting from the past. This is based on the fact that the sea water around the sites was sheltered from the direct sea waves due to presence of the islets on the eastern side. The situation suggests faster deposition of the silt from upcountry around the sites which was beyond the erosive and transportation capacity exerted by ocean waves. As the area became silted it encouraged growth of mangrove vegetation. The growth of mangrove vegetation further strengthened the siltation process. It is said that mangrove vegetation encourage siltation by trapping small particles of soil (Walter and Steiner 1968). After the harbours of Ngevu, Kigunda and Kiperani were subjected to siltation and mangrove growth the area stopped from functioning as harbours. New harbour operating centers were established in the islets of Kuruti and Boza. The dating of the cultural materials from both areas support this argument. The harbours of Kiperani and Kigunda were occupied from the 8th-11th century A.D. It appears therefore, that after the siltation of the harbours new harbour was established in Boza by the 12th century. The siltation of the beach around these harbours therefore account for the absence of late cultural deposits in the harbours of

Kiperani and Kigunda. With exception of Mkundi, Kiperani and Kigunda, most of the sites to the east and north of Shungubweni have later cultural deposits. Although the cultural materials from Kuruti suggests early occupation possibly before the 15th century but certain dates for occupation are not yet established as the material from the sites are waiting further analysis.

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