

Maritime History in Mozambique and East Africa: The Urgent Need for the Proper Study and Preservation of Endangered Underwater Cultural Heritage

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Abstract The East African coast is a rich domain for underwater cultural heritage, whose archaeological remains are only beginning to reveal the extent of indigenous nautical technology, regional and international social contacts, and far-reaching maritime trade routes sailed for millennia. The diversity of remains found under water range from cultures up and down the East African coastline to further afield: from China, points surrounding the Indian Ocean, to the Persian Gulf, Middle East and Europe. In Mozambique, important steps to investigate and preserve this heritage have been taken over the last 20 years by several groups of local scholars in collaboration with international research institutions. However, this heritage, especially that which lies along the northern Mozambique coast, has also been subjected to extensive and serious disturbance by commercially-oriented salvage programs. These salvage activities have not only had a very negative impact on the state of the cultural resources themselves, but have also prevented the access of legitimate scholars to these resources—particularly grave is the intervention at Mozambique Island, a UNESCO World Heritage Site. Among the meritorious efforts to mitigate this situation, in Mozambique and world-wide, the 2001 UNESCO Convention for the Protection of the Underwater Cultural Heritage is an outstanding initiative and needs to be ratified by Mozambique and other East African states.

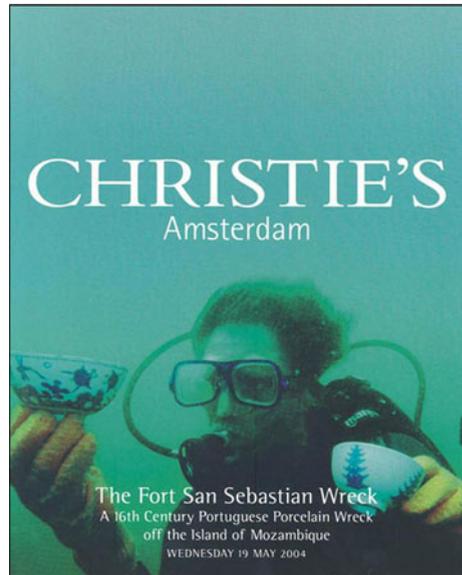
Keywords Mozambique Island · Arqueonautas · Commercial salvage operations · Indian Ocean trade · East African heritage management

Introduction

Incorporated in the Indian Ocean navigation and trade networks since the first millennium AD, East Africa possesses an important and valuable underwater cultural heritage (UCH). Especially important in this context is the northern Mozambique coast with the historical

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Fig. 1 Cover of the Christie's catalogue of the Mozambique Island underwater heritage auction. A Ming pottery collection salvaged by Arqueonautas was sold in this auction in 2004 (Christie's 2004)



harbor at Mozambique Island (a UNESCO World Heritage Site), which was an epicenter of ancient marine trade routes linking East Africa with Indian Ocean states such as ancient Persia, India, Indonesia and China, among others. Archeological research along the Mozambique coastline must be organized in such a way as to document, protect and disseminate what is left, on land and under water, of this considerably unknown past and develop national intervention capacities. To this effect, efforts have been made over the past few decades by local institutions and academics to develop research and curatorial capacities, and programs with international support have been implemented; several of these efforts regarding investigations into the extensive and as-yet largely unknown maritime history of Mozambique are presented and discussed in this paper.

This important maritime heritage, as well as access to it, however, has been and continues to be adversely threatened by the actions of commercially-oriented underwater 'salvage' groups. As a specific example, the systematic scheme of for-profit salvage in northern Mozambique, undertaken by the Portuguese company Arqueonautas, is discussed in this paper. Their interventions, and subsequent sale of finds at auction, such as that in Amsterdam in 2004 (Duarte 2010; Christie's 2004) (Fig. 1), serve as an example as to why the academic community studying this heritage need to react and mitigate the destructiveness of commercial salvage activities involving UCH. The UNESCO 2001 Convention on the Protection of the Underwater Cultural Heritage is an important instrument of protection in this regard, and its ratification must be considered by East African states such as Mozambique if the region's rich, diverse and irreplaceable heritage is to be properly studied and preserved.

Historical Background of Navigation and Maritime Contacts in East Africa

Along the East African coast are submerged archaeological remains that are of fundamental importance for reconstructing the history of ancient trade and navigation that is

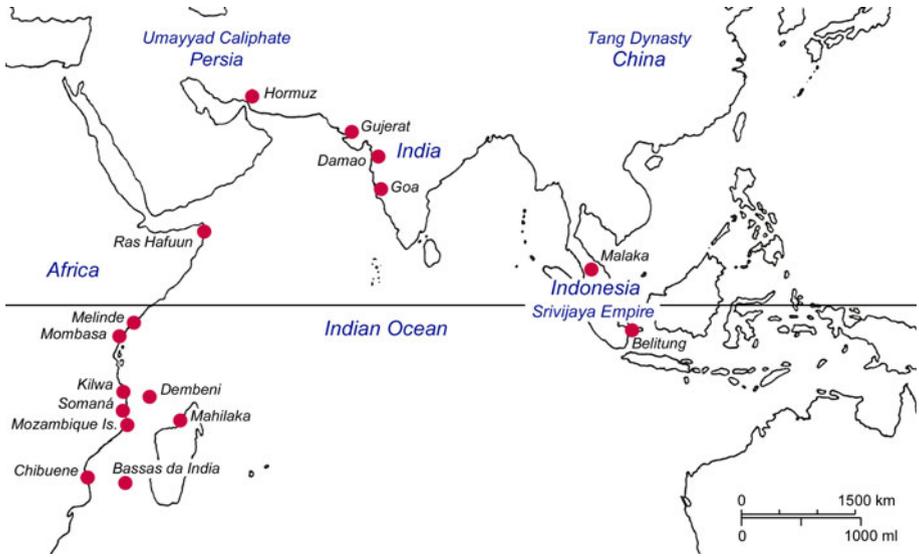


Fig. 2 Indian Ocean and places mentioned in the text (R. Duarte)



Fig. 3 Tang Dynasty plate, AD 618–906. British Museum (R. Duarte)

linked to the wider socio-economic development of the Indian Ocean region (Duarte 1993) (Figs. 2, 3). This doesn't derive from just spectacular wrecks with rich treasures or fantastically preserved hulls; even simple objects found in secure archaeological contexts provide important clues to reconstruct a still largely-unknown past.

Throughout the first millennium important kingdoms and empires were shaped in the broad Indian Ocean region, first in relation to the spread of Hinduism and Buddhism, and after the eighth century, with Islamic expansion. At the beginning of the Islamic expansion

the Umayyad Caliphate (AD 651–750) overtook the Sassanid Empire in ancient Persia, extending their domains to the greater part of the Iberian Peninsula, all of North Africa, Arabia and the north Indian subcontinent. The Caliphate established trade relations with the powerful political entities in the Far East including China, where during the Tang Dynasty (AD 618–906), outstanding ceramics were produced.

The now-famous Belitung wreck, named after the island in front of Sumatra where it was lost in ca. AD 830 and relocated in 1998 by local fishermen, reveals the wide trade in Tang ceramics. Not very much is known about this Arab- or Indian-made vessel: its point of departure on its last voyage is thought to have been in China, its destination possibly Indonesia or the far-away western Indian Ocean countries where the ship might have been built. Among its interesting features was the nature of its cargo, consisting mainly of Chinese Tang pottery (Flecker 2000, 2001, 2005, 2008), some of it *sancai*, or three colors—a designation linked to the predominantly brown, green and blue colors derived from the use of metal oxides in a pioneer glazing technique still in use today. Tang pottery was so highly valued and extensively traded throughout the Indian Ocean at that time that it began to be imitated. Imitations were extensively produced in faraway Persia, giving origin to a pottery that is commonly known as “Sassanid glazed ceramics” and later “Sassanid Islamic ceramics” (Duarte 1993:20). These ceramics were disseminated through all the Indian Ocean countries, including those along the east coast of the African continent, giving an idea of the extension of Indian Ocean trade and navigation by the end of the first millennium AD (Figs. 4, 5).

At the time of the Belitung wreck, the region of Belitung, in present Indonesia, was part of the flourishing Srivijaya Empire (seventh to thirteenth centuries AD), a powerful maritime potency based on the island of Sumatra. An interesting description in a letter written in AD 718 by one of the Srivijaian kings, Sri Indravarman, to a Umayyad Caliph, Umar bin Abdul Aziz, reports the trade relations between the two political entities and curiously mentions the offer of an East African (*Zanj*) female slave—an interesting reference to the regional slave trade at that time (Azra 2006).

A further indication of trade with East Africa in the end of the first millennium comes from the interesting book *Wonders of India* written in AD 954 by Bozurg Ibn Chariyar (AD



Fig. 4 Sassanid bowl from Iraq, ca. ninth–tenth centuries. British Museum (R. Duarte)



Fig. 5 Sassanid bowl found in the archaeological site of Chibuene (ca. eighth–ninth centuries) in southern Mozambique (Sinclair 1982). Collection of DAA (R. Duarte)

900–953) (Duarte 1993). This fantastic account reports a raid of possibly Austronesian peoples, maybe from Indonesia, who had settled in Madagascar. With a thousand small boats, they raided the East African town of Qanbalu for slaves. The assailants mentioned that they raided the land because it had trade goods useful in their country and for China, such as ivory, tortoise shell, panther hides and ambergris. They wanted to obtain *Zanj*, because they were strong and easily endured slavery. They had pillaged some islands 6 days away, and then several villages and towns belonging to Sofala in the land of the *Zanj* (Duarte 1993:25, after Freeman-Grenville 1981:103).

According to Ibn Chariyar, Qanbalu was a town surrounded by a strong wall (Freeman-Grenville 1981). The Arab geographer Al-Masudi (AD 896–956) also refers to this town (Trimingham 1975:130–135) that was at the time an important urban settlement, presumably the most important trade center in East Africa (Chittick 1977:92). Although the precise location of Qanbalu is not known, recent archaeological research in the region is providing interesting evidence of walled urban settlements from this epoch like Dembeni in the Comoro Islands, Somana in northern Mozambique, and Mahilaka in Madagascar (Duarte 1993).

These are indeed valuable discoveries regarding the still scarce information on the extension of Indian Ocean trade and navigation to East Africa in the first millennium, and underwater archaeological research certainly plays an important role in obtaining further information. From the underwater archaeological point of view, we can dream about impressive discoveries of fantastic “Arab” wrecks from first millennium AD like the Belitung wreck, rare finds that are discovered mostly by accident and must be carefully studied and preserved. But feasible and simple research programs like surveying the distribution of *sancai* glazed ceramics and the related Sassanid ceramics within their contexts along the coast constitutes a rewarding scientific exercise. These ceramics have been found in several archaeological sites along the East African coast from Ras Hafun in Somalia, to Chibuene in southern Mozambique (Sinclair 1982), clearly indicating a southward extension of first millennium Indian Ocean trade on the African continent (Duarte 1993:20). These ceramics have also been found in the most important historical towns of the region like Kilwa (Chittick 1974:302), which obtained great political and economic

importance during the first half of the second millennium. The well-known Moroccan traveler Ibn Battuta visited Kilwa and refers to this important town in 1331 (Dun 2004), as did the Portuguese chronicler João de Barros, who divulged in his work, *Décadas da Asia*, the “Kilwa chronicle”, a vernacular Swahili document about the history of the town (de Barros 1552).

When the Portuguese arrived in East Africa by the end of the fifteenth century, regular commercial voyages were already established to India, Arabia, the Persian Gulf and other ports in the Middle East, and the people of the Gujerat region in modern northwestern India played a prominent role in this regular trade (Alpers 1976). Swahili, Arabs and Indians were known to be skilled sailors and it is reported that it was a local pilot that guided the Portuguese navigator Vasco da Gama from Melinde (in the middle of what is presently Kenya’s coast) to India in 1498. It is thought by some scholars that this pilot could have been Ahmed Ibn Magid, a known sailor from Gujarat and author of the poem *Urzuza de Sofala*, a navigation guide of the East African coast (Aleem 1973).

Kilwa and other important East African towns were conquered in the beginning of the sixteenth century by the Portuguese, together with many other Indian Ocean towns like Ormuz at the entrance of the Persian Gulf and Malacca between the Indian and Pacific Oceans. Portuguese expansion in the Indian Ocean was fast and effective. Already during the sixteenth century Portuguese traders had settled along the East African coast in scattered trade settlements and relied on the main towns like Sofala, Mozambique Island, Mombasa, Melinde, and others, where the Portuguese had established fortresses, to protect their activity (Boxer 1969; Botelho 1934). The extent of Portuguese and in general terms European expansion and colonization in the Indian Ocean tends to lead to a biased Eurocentric approach in UCH research and intervention in the region. But it must be emphasized that Portuguese trading posts in East Africa had, since their beginnings, grown in close articulation with the Indian Ocean traditional trade network in place since the first millennium. The Portuguese largely controlled but did not disrupt this network until the twentieth century.

In 1585, 50 survivors from the Portuguese *nau*, *S. Tiago*, which had wrecked at Bassas da India, an atoll in the middle of the channel between Mozambique and Madagascar, managed to reach the East African coast after an incredible trip of more than 100 miles in a small *batel* from the ship. They came ashore near the mouth of the Zambezi River where they meet a well-established local Portuguese trader, Francisco Brochado, who gave them assistance. Of great interest in their report of these events, published in *Historia Tragico Maritima* (de Brito 1735, 1736, 1737), is the curious description of a now extinct traditional boat, the *luzio*, that they used for part of their journey to Mozambique Island, more than 500 miles north of the Zambezi. According to the description, it was a reasonably sized cargo and passenger boat with a flat bottom. At midships there was a house for storing goods, with a first floor consisting of a cabin for passengers and a veranda. The mast carried a rectangular sail made of mat, probably of palm tree leaf like those of the old Swahili sewn *mtepe* boats, and four or five pairs of rowers sat behind the house at the stern (de Brito 1736).

Slightly earlier, in 1570, the Portuguese commander Francisco Barreto organized a military expedition to the kingdom of the Monomotapa south of the Zambezi using local traditional crafts. Leaving behind the huge and difficult to maneuver Portuguese *naus* in which he had sailed from distant Portugal moored at Mozambique Island, he transported his army of 650 soldiers, horses, canons and supplies down the coast to the mouth of the Zambezi in 20 hired local ocean-going ships, *pangaios*, and proceeded on foot along the river followed by 20 *luzios* that carried all the supplies (Monclaro 1964). At the beginning

of the seventeenth century, in *Ethiopia Oriental*, Father João dos Santos refers to *nauetas*, *pangaios*, *luzios* and *almadias* as boat types sailing along the Mozambique coast in a traditional local trade network in which Portuguese institutions had been integrated. In his interesting description, dos Santos makes valuable references to naval construction, navigation and trade in the region, reporting the use of very effective mat sails and boats of sewn plank technology using coconut fiber “coir” (dos Santos 1608).

Like the *mtepe*, *luzios* have disappeared from the Zambezi and other rivers and extensive bays in Mozambique and at present no remains have been found of these boat types. However, *zambucos* and *pangaios* sailed along the northern Mozambique coast and up to India and Arabia until the twentieth century, following a long established traditional trade network carrying people and goods (Alpers 1975). They are no longer found in Mozambique, but can be seen today in Zanzibar, Mombasa, and other harbors of the Tanzanian and Kenyan coasts.

A clearly expressive 1860 image of Mozambique Island harbor by L. McLeod shows that, with the exception of a British steamer, the majority of the crafts moored there at the time were traditional Indian Ocean trading vessels (McLeod 1860) (Fig. 6). In the foreground of this beautiful picture is the image of an ocean-going *pangaio* that curiously resembles an old Portuguese *caravela* in its rigging with “lateen” sails. Also illustrating Mozambique Island harbor is a 1814 drawing in H. Salt’s book, *A Voyage to Abyssinia...*, in which the jetty, customs house and Saint Paul’s (Governor’s) palace along with a traditional Indian Ocean ship are depicted (Salt 1814) (Fig. 7).

Older residents of the island still remember the huge *pangaios* that used to sail to India carrying cashew nuts and other goods, careened in front of the customs building. Twentieth century colonial development strategies in Mozambique have unfortunately closed the island to traditional Indian Ocean trade and the last big transoceanic traditional ships were seen in this harbor during the 1960s. The conflict at the time between the Portuguese Government and India regarding its possession in Goa put an end to this flourishing trade, with then Prime Minister A. Salazar forbidding boats from the Indian Union to trade in Mozambique as retaliation (Couto 2006).



Fig. 6 Lithograph of Mozambique Island and harbor in 1860 by L. McLeod and T. Picken (McLeod 1860)



Fig. 7 Etching of Mozambique Island harbor in 1814 by Henry Salt (Salt 1814)

Previous Maritime Archaeological Research Related to East African Seafaring

Studying the maritime-oriented past of East Africa, through the reconstruction of local workmanship in naval technology and navigation, ancient traditional trade networks and socio-cultural interchange, is among the important tasks regarding the development of marine historiography and ethnography. Such tasks need proper research methodologies that include the fundamental contribution of underwater archaeology. Several projects have been undertaken in the region, or that relate directly to the region, that demonstrate the effectiveness of this approach as well as the depth of the region's history.

In 1697 Omani Arabs sieged the Portuguese Fort Jesus in Mombasa, Kenya. A fleet consisting of two frigates and two *galliot*s, under the command of General Luis de Mello Sampaio, was sent to relieve the garrison. The effort to give support failed, and the fort fell in 1698, resulting also in the loss of one of the frigates, *Santo Antonio de Tanna*, which wrecked and sank in Mombasa Harbor. The excavation of this wreck in 1977–1981 by Robin Piercy and a team from the Institute of Nautical Archaeology (INA) and the National Museum of Kenya was a pioneering underwater archaeology project in East Africa (Piercy 1977, 1978, 1980, 1981).

The *Santo Antonio de Tanna* site consisted of a preserved hull about 40 m long. The port side of the ship was almost completely missing, but the starboard side survived up to the first deck. This level of preservation and the accuracy of the archaeological recording allowed for reconstruction of the ship's hull, in a pioneer work of great importance in the study of frigates that used to sail in the Indian Ocean. The reconstruction work accomplished in T. Fraga's thesis in 2007 was based on results from the analysis of the excavation field data and textual and iconographic data on contemporary shipbuilding (Fraga 2007) (Fig. 8).

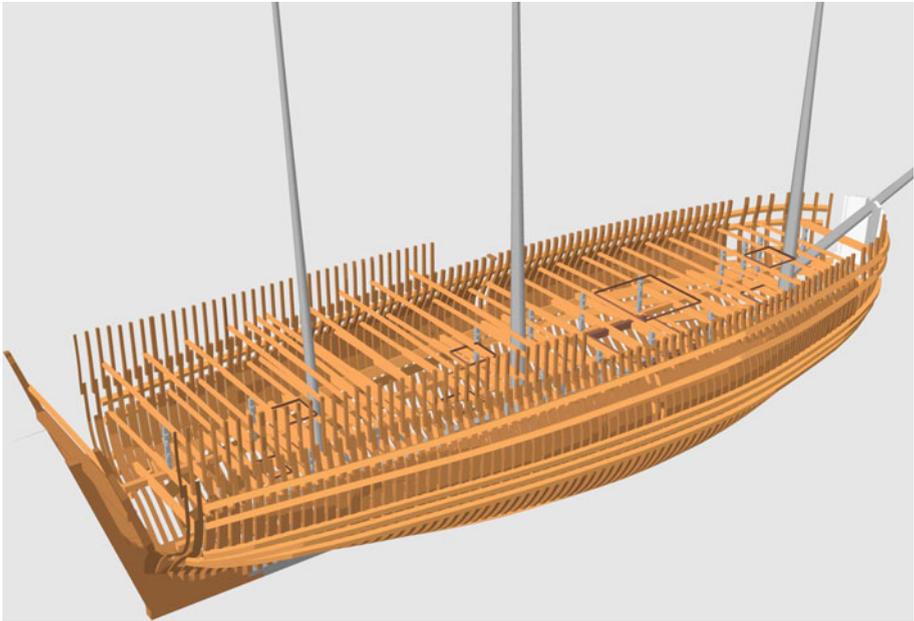


Fig. 8 *Santo Antonio de Tanna* three-dimensional reconstruction by T. Fraga (Fraga 2007)

What is also interesting about the wreck of *Santo Antonio de Tanna* is the nature of its cargo. The ship had sailed from Mozambique Island and its cargo included locally produced traditional pottery (Sassoon 1981) for trade north along the Kenyan coast. Thus, this wreck provides important evidence of the coastal trade in locally produced items by a Portuguese ship, an indication that Portuguese trading activity in the Indian Ocean was closely related to the local traditional economies.

In a meritorious effort in 1998, Portuguese researchers reconstructed another Indian Ocean frigate, *D. Fernando II e Gloria*. The remains of the historical vessel, built in 1843, is presently displayed at a museum in the Almada-Cacilhas shipyard facing Lisbon. Like *Santo Antonio de Tanna*, this 86.75 m long and 1,849 ton frigate was built in India (Damão) of teak wood from more than 3,000 trees from the nearby Nagar Avelly forest (Paine 2000). This quite impressive ship served the Portuguese kingdom well during 1843–1878, when it sailed regularly from Portugal to India and along the African coast on several important missions. It is nostalgically considered the last of the “formidable” sailing “Indian carriers” (Fig. 9).

With its crew of 130 men, the frigate was not easy to operate. A beautiful description, especially for those who love sailing, by the Portuguese admiral Augusto de Castilho gives a good idea of the intricate maneuvering of this big frigate into the harbor at Mozambique Island:

The frigate was flying under full master sails and the jack had been hauled at the head of the bow. As the northern spit of St. George’s Island appeared at true West we luffed in, and presently the coast pilot’s small launch was in full view in the middle of the channel, sailing full out, her two lateen sails well-trimmed and the jack flying at the stern. She luffed totally by the wind, the course sails were hauled up, and the topsail was braced.



Fig. 9 *Fernando II e Gloria*, frigate, 1845. Oil painting by Roger Chapelet

The small launch was getting closer now, her sails and masts down as the ten powerful shining black oarsmen vigorously rowed towards the frigate; one could already hear their voices chanting a monotonous, very rough and throaty chant; at the stern stood the venerable, friendly figure of the pilot master Mussagy Valegy wearing his honorary lieutenant-commander uniform and the big Moslem turban on his head. Minutes later the launch was seeking the starboard, downwind side of the frigate; a bow rope was thrown, she came alongside and the coast pilot, with whom some of the officers were already acquainted, boarded the frigate and took command. We lowered the jack. The launch was tied to the stern, the ship was trimmed and we sailed smoothly on close reach, weathering at short distance the chapel of Our Lady's bastion; then we started spotting the pier and the houses giving onto the inner port, and as we weathered the fortress mast around S 130° W of the compass all sails were already hauled down, and the anchor sank eight fathoms to the bottom at four o'clock in the afternoon." (A. Castilho in do Rego 1904 preface, translated by D. Garcia).

But there are not always such perfect sailing conditions in this place. In 1698, before proceeding to Mombasa, *Santo Antonio de Tanna* was trapped by a hurricane at Mozambique Island, causing extensive damage to the ship including the breakup of the main mast. Strong hurricanes, locally called *monomocaias*, are a frequent cyclical phenomenon along the coast of Mozambique. These hurricanes have been known to cause severe damage to vessels in Mozambique Island harbor for centuries, as can be seen from a dramatic report of such a catastrophe in 1858 by Leote do Rego:

On 1 of April 1858 the town and district of Mozambique suffered a horrible storm of this kind that lasted 24 h and caused there great devastation. At that time there were in the harbor the following boats: the French barge Charles and George, the Portuguese galley Adamastor, the brigs Amizade, Dois Irmãos, Nossa Senhora do Socorro, Flor do Mar, 19 de Maio, yachts Esperança and Livramento; 29 pangaios and the French war sandeel L'Eglè.

Since the day before the atmosphere had looked suspect; but only at 11 on the following day the wind began blowing with fury from SW. At 6 in the afternoon two yachts had already snagged and the majority of the pangaios, losing the moorings, wrecked on the Cabaçeira Coast, and the yacht Livramento capsized in the middle of the channel. At 9 in the night there was a moment of calm, then the wind jumping to the NW with terrible fury. At this time there were already demolished houses, torn trees, and devastated properties, not considering the losses in the sea. The sand raised from the beaches was thrown on the streets of the town. The beach was covered with bodies and wreckage from the ships.

Only two boats and one brig stood at their moorings. The French war boat, with two pangaios that had fallen on his bow, lost its anchor and rudder, and wrecked with severe damage.

All the launches and small boats were lost and two brigs appeared on the following day stranded on the island rocks with great damage. Only on the second day the tempest gradually declined, being verified then that besides the material losses, 24 men from the ships' crews had died." (do Rego 1904:560–561, translation by R. T. Duarte).

This dramatic description gives an idea of the effects of these frequent disasters at Mozambique Island, and especially interesting is the fact that at the time of this event, in the middle of the nineteenth century, there were 29 *pangaios* moored in the island's harbor, making it evident that the great majority of the ships trading there at the time were not European vessels but traditional Indian Ocean ships. In this specific event quite a number of them were lost in this small bay. This is evidence that the maritime history of the island and that of East Africa in general is far from being an "affair" of old Portuguese galleons!

UCH Research Strategies and Preservation Training

Modern terrestrial archaeological research in the region has already begun uncovering aspects of the pre-colonial past thanks to well-structured national and regional research programs such as the Urban Origins in Eastern and Southern Africa Project (Uppsala Universitet 2010) and subsequent follow-ups. Local universities and young scholars now have the capacity to carry out research and dissemination of their own history. But a large part of East Africa's maritime past is still waiting to be discovered under water and studied. Local expertise and national capacity in underwater archaeology must be built.

Despite the pioneering excavation of the *Santo Antonio de Tanna* site in Mombasa beginning in 1977, underwater archaeological research capacities have, in fact, been very incipient in the region; recently, however, this situation is showing signs of improvement. A meritorious effort in this sense is being made under initiatives to promote the tenets of the 2001 UNESCO Convention on the Protection of the Underwater Cultural Heritage and the rules outlined in its Annex, with UNESCO promoting regional cooperation and development throughout the region (<http://unesdoc.unesco.org/images/0012/001260/>

126065e.pdf). In this context the Netherland's Centre for International Heritage Activities (CIE), with the support of local governments and heritage agencies, has recently introduced a broad Maritime Archaeology Development Programme in eastern and southern Africa. This program, with UNESCO support, seeks to develop capacity in all spheres of UCH management through training, the development of educational programs and the creation of "coastal networks" that will be involved in protecting UCH sites (www.heritage-activities.org). These CIE initiatives have already been extended to South Africa, Tanzania and Mozambique in an effort to develop regional capacities for UCH study and preservation (<http://www.heritage-activities.nl/Projects/Search%20by%20country/mozambique>).

Reference must also be made to the 'Southern African Slave Wrecks and Heritage Route Project' (http://www.save-travel.org/index.php?option=com_content&task=view&id=98&Itemid=169), an initiative that has been undertaken since 2008 by academics from George Washington University and the US National Park Service together with African partners. The project actively pursues a field research program to locate, document, and preserve archaeological remains of ships that wrecked while engaged in the international slave trade of the modern era (post-AD 1500), while developing a cultural resource management program that will preserve and protect this irreplaceable—and increasingly threatened—heritage, in order to assist cultural development and tourism.

In Mozambique efforts have already been made to develop local capacity in underwater archaeological research. Preliminary surveys have been undertaken since 1982 by the Department of Archaeology and Anthropology (DAA) of Eduardo Mondlane University (UEM), in Maputo, first with Swedish support through the Swedish Agency for Research Cooperation with Developing Countries (SAREC), in collaboration with the Swedish Antiquities Service (Riksantikvarieämbetet). In this context, a preliminary survey was carried out in northern Mozambique by Swedish archaeologist Per Inger Lindquist. Work was continued by the DAA at UEM with local professionals and the support of foreign archaeologists like Jean-Yves Blot from the Portuguese National Centre of Nautical and Underwater Archaeology (CNANS). During this period, analysis and review of some commercially-oriented underwater intervention proposals presented to the Mozambican Government clarified for national archaeologists the incompatibility between commercially-oriented ventures and scientific research programs (Duarte 1993).

The current situation of underwater archaeological heritage world-wide, still greatly affected by salvage undertakings with commercial interests, is the subject of great concern to archaeologists and the broader academic community, as well as international institutions such as UNESCO. The recent controversy surrounding the Smithsonian's planned exhibition of finds from the Belitung wreck (Taylor 2011), and its subsequent cancellation due to protests from the academic community, is a good example of this situation (Statement on "Shipwrecked" Advisory Group Meetings 2011). The recovery of this important ninth century wreck was the subject of a highly contested salvage operation where the ceramic collection was later sold (Flecker 2000, 2001, 2005, 2008). Although I have not enough information on the details of this specific intervention, the reality is that this is not, unfortunately, an isolated case of UCH subjected to commercially-oriented interventions. Unfortunately, there still exists a propaganda movement of trying to sell the idea that commercially-oriented interventions are compatible with correct archaeological practices: i.e., Odyssey Marine Exploration's attempts to reconcile both perspectives (see Stemm and Kingsley 2010, 2011), and Arqueonautas' promise of future publications of their activities using the names of archaeologists such as Mensun Bound in Mozambique and Dr.

Margaret Rule in Cape Verde (see below; <http://publications.aww.pt/html/mozambique.htm>; http://publications.aww.pt/html/cape_verde.htm).

Concerns about this situation are growing world-wide as it is exacerbated by reputed media operators producing sensationalist articles, broadcasts and movies about adventurous ‘treasure hunting’ operations. Reputed media networks like National Geographic and Discovery, are, unfortunately, not exempt from this ultimately misleading practice of giving such groups the appearance of legitimacy by providing uncritical media platforms.

Despite the emergence of underwater archaeological investigation and training programs mentioned above, the current reality is that UCH along the East African coast, from Somalia to South Africa (only Mozambique has 3,000 km of coastline), has been very poorly subjected to thorough scientific research. On the contrary, uncoordinated scuba diving tourism development in the region and other economic activities (like the recent concessions for exploring scrapyards along the coast) are together significant threats to this heritage in Mozambique. Insufficiently educated tourist agents and scuba diving professionals think to pick up objects under water in order to make additional money from their work; the same is the case regarding scarpyard prospectors. Most significantly, salvage and commercially-oriented interventions have been intensive, with negative effects.

The above-mentioned *S. Tiago*, a Portuguese *nau* wrecked at Bassas da India, an atoll in the middle of the Mozambique Channel, was one of the saddest early examples of an improper intervention in the region. This wreck is one of the most dramatic and impressive of past sea disasters described in *Historia Tragico Maritima* (de Brito 1735–1737). The wreck site was found in December 1977 by a treasure hunter named Ernest Erich Klaar who salvaged artifacts from the site for 3 years. South African-based salvage groups continued to recover objects from the site during the 1980s. From the recovered collection, presently dispersed, a few of the finds that can be mentioned are 12 bronze cannons, one astrolabe, several kilos of silver coins, religious objects, and jewels (L’Hour 1991; Stuckenberg 1982). Few remains from this wreck are left, beyond the dignity of the place that stands in the middle of the ocean as a grave of more than 200 people—a beautiful small atoll that attracts even more tourist diving expeditions. The bulk of the salvaged collection was sold by Klaar’s company, Santiago Marketing Ltd., and bought partly by the Portuguese Museu de Marinha and the South African Natal Museum. Other items are still today advertised for sale on-line (www.sunkentreasure.com). Another commercial salvage operation is that of the seventeenth century Dutch ship *Bredenhof* (VOC), which wrecked at Silva Shoals on the Mozambique coast, just south of Mozambique Island. A rich silver collection taken from the site was sold at an Amsterdam auction in 1986 (Christie’s 1986).

The Specific Situation of Mozambique Island and the Neighboring Coast

Underwater salvage operations and treasure hunting activities that are for-profit not only have had a detrimental effect on UCH, but have also suspended and in some cases prevented scientific research programs from taking place. The most demonstrable situation is what has occurred at Mozambique Island and the neighboring coast, where important archaeological evidence for the study and reconstruction of a still relatively unknown past linked to pre-colonial trade and navigation had already been observed in documentary research and fieldwork surveys. For example, the important coastal urban ruins of Somaná, around 100 km to the north of Mozambique Island, are also a clear example of the intensive integration of this region in the pre-colonial Indian Ocean trade networks since the first millennium (Duarte 1993). And in 1996, Mozambican archaeologists from DAA at

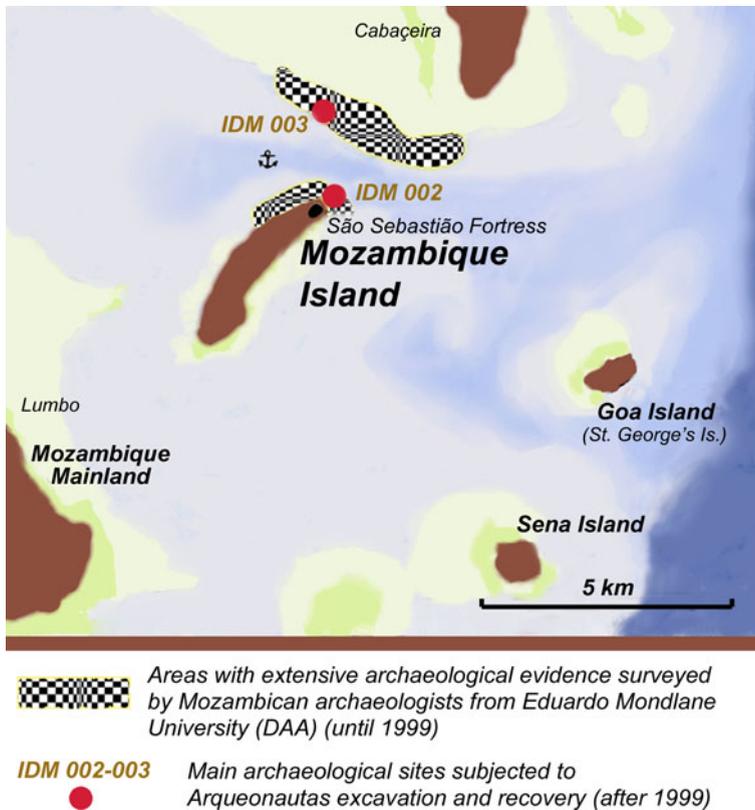


Fig. 10 Mozambique Island: the areas surveyed by archaeologists and the areas subjected to Arqueonautas' interventions (R. Duarte)

UEM decided to conduct archaeological research, including underwater surveys, at Mozambique Island itself. This small island, now an urban center of 14,000 inhabitants located 3 km from the mainland, is the most important historical harbor in northern Mozambique and a UNESCO World Heritage Site (Fig. 10).

Following preliminary surveys already undertaken during the colonial period (Quirino da Fonseca 1965), Mozambican archaeologists found important evidence of pre-colonial trade and navigation in Mozambique Island's bay, under water and on land. In 1996–1999, the UEM group located important sites under water just in front of the island fortress of São Sebastião. Together with modern European wrecks and deposits, evidence of indigenous first millennium, pre-colonial trade and navigation was found in this specific context, making this site ideal for a long-term research project with a strong training component. The logistical conditions (the extensive site lies just in front of the island's São Sebastião fortress) makes this the ideal place for a scientific research training center for the development of national and regional capacities in this field.

During underwater survey activities carried out at Mozambique Island in 1996–1999, Mozambican researchers had the valuable support of American archaeologists Steve Lubkemann and David Conlin from Brown University, working in collaboration with the US Park Service. The aims of this collaboration was to draw up an ambitious underwater

heritage project with American support in order to study and preserve UCH in the national marine parks and reserves of Mozambique, and provide public education and sustainable development initiatives, including cultural tourism. This effort continued in 2003, when the US State Department and the US Park Service (again with the collaboration of David Conlin) organized a 3 week visit to the US for a Mozambican delegation to discuss maritime archaeological opportunities and collaboration through the VOLVIS program (S. Lubkemann, personnel communication).

It is important to note that with these preliminary field studies and research initiatives, there was positive ‘momentum’ regarding the development of national capacities in the field of cultural heritage management: the motivation of national archaeologists, the support of cooperative institutions (like SAREC, the US Park Service, and UNESCO), favorable logistical conditions “on the ground”, and Mozambique Island’s inscription to the UNESCO World Heritage Site list.

Unfortunately, just at this time, in 1999, a decision was made by the Mozambican Government to develop an extensive program for commercially-oriented UCH recovery at Mozambique Island and a ca. 700 km long stretch of northern Mozambique coast with a Portuguese commercial company, Arqueonautas, S.A. (<http://aww.pt>). This agreement put an end to these important initiatives mentioned above. An exclusive license, which has been constantly renewed up to the present, has been and continues to be an obstacle to the development of a national strategy of archaeological underwater research in the country and can be presented as an example of the consequences of poor administrative decisions regarding intervention strategies (Duarte 2010). This decision seems even stranger considering that the national law for the protection of cultural heritage, Law no 10/88 of 22 of December (1988) states that archaeological objects and sites are inalienable property of the State!

Arqueonautas was established on 10 August, 1995, as a private shareholding company in Madeira, Portugal, with the purpose “of protecting and saving World Maritime Heritage in accordance with current professional standards of archaeological practice. This may involve controlled rescue recovery of endangered historical shipwrecks including the conservation and scientific documentation of all related cultural material and cargo, applying sound economic principles. An experienced team of historians, marine archaeologists, research divers, and conservation experts operates from AWW’s [Arqueonautas’] headquarters in Portugal and our offices in Mozambique and Indonesia on a large number of search and recovery projects around the globe” (<http://aww.pt>).

Arqueonautas has been actively surveying northern Mozambique since 1995, where its operations have been directed previously by Portuguese archaeologist A. Camarão, English archaeologist M. Bound, Italian archaeologist A. Freshi, and presently Cuban archaeologist A. Mirabal. We have no information about the results of their activities until after 2000 (<http://publications.aww.pt/html/mozambique.htm>; de Carvalho 2009:20).

After 1999 the sites located and under survey by the DAA researchers at Mozambique Island became the first and major targets of Arqueonautas. Among several disturbances that they made (Jeffery 2011; Duarte 2010) is what they report as the wreck of the sixteenth century Portuguese *nau*, *Espadarte* (Arqueonautas site IDM-002 or the “Fort San Sebastian Wreck”), from which they recovered the ceramic collection sold at auction in Amsterdam in 2004 (see Fig. 1) (Bound 2002, 2004; Anonymous 2008; Christie’s 2004). But the sad story is that Arqueonautas’ operations at this site were a destructive intervention of selective recovery: it was an extremely important archaeological site located in an area of an accumulation of deposits through centuries of local occupation and of fundamental importance to understanding the history of the island and the region that was

under DAA study (Duarte 2010). Additionally, following the granting of Arqueonautas' licenses (currently renewed until 2013), research activities in the area by Mozambican archaeologists were canceled, in this case the research program that was initiated by the DAA at Mozambique Island. This is a great blow to the development of national capacities in this field.

However, Mozambican archaeologists have refused to be included or collaborate with Arqueonautas' program, due to its commercial nature. After initiatives to convince them to join the commercially-oriented project, Mozambican archaeologists have expressed strong reservations and criticisms regarding programs with commercial components linked to the alienation and export of national cultural heritage. This is also in line with Rule 2 of the Annex "Rules concerning activities directed at underwater cultural heritage" of the 2001 UNESCO Convention: "The commercial exploitation of underwater cultural heritage for trade or speculation or its irretrievable dispersal is fundamentally incompatible with the protection and proper management of underwater cultural heritage. Underwater cultural heritage shall not be traded, sold, bought or bartered as commercial goods" (<http://unesdoc.unesco.org/images/0012/001260/126065e.pdf>).

Arqueonautas' activities, covering ca. 700 km of the northern Mozambican coastal strip, is far from being an archaeological scientific program. Expeditions have been conducted every year since 1999, with 40 archaeological sites so far located, with selective recoveries and major excavations at six sites. It is important to note the fact that all the six sites where they have conducted excavations have yielded gold or silver objects and collections of finds valuable for commercial sale (Table 1). Clearly the nature of the site selection indicates that the real objective of the interventions is profit, and this goes against the rules and tenets of the UNESCO 2001 Convention (Duarte 2010).

From these 40 sites, 22 are near Mozambique Island and the remaining 18 are distributed amongst four areas, located between Nacala in the north and Fogo Island in the south. At all these sites are the remains of European wrecks, dating between the sixteenth and the nineteenth centuries, indicating the intent behind the survey objectives: a limited focus on a specific period in history, when European vessels traded valuable goods and carried currency.

From the reported six excavations (discussed only in the publications available on their website: <http://publications.aww.pt/html/mozambique.htm>), four have been made at Mozambique Island. This, together with the fact that half of the interventions are located in the small island bay, denotes two things: (1) the number of finds themselves indicate the importance of the underwater heritage of this specific place and, (2) the extent of damage that has been concentrated on this specific place over the decade it was subject to Arqueonautas' exclusive license.

A reflection on the specific case of Arqueonautas' work at Mozambique Island is helpful to clarify the major biases that characterize the intervention of commercially-oriented companies. The main reasons are outlined below, and are based on the information provided on Arqueonautas' website (<http://aww.pt/>) (Duarte 2010):

- There is no formulation of archaeological research objectives (see Table 1).
- There is no interest in the general context of the sites—the aim is to discover the location of sites in order to recover valuable objects to sell. These actions have destroyed important information regarding archaeological contexts and site formation processes.
- There is an evident lack of knowledge about the local historical context, which has led to mistakes regarding Arqueonautas' approach to the archaeological material.

Table 1 List of the isolated interventions undertaken by Arqueonautas in Mozambique according to a table divuligated by the company

| Site | Ship name | Date sunk | Date found | Position | Description of relevant finds | Remarks |
|----------------|---|-------------|------------------|---------------------|---|--|
| ANG-001 | | | 20-Sept-03 | Mafamede Island | Steel wreck circa 1900s | Observation only |
| ANG-002 | <i>N. Sa. da Guita</i> | 10/8/1721 | 27-Sept-03 | Moma Island | 1 bronze cannon, 5 anchors and 18 iron cannons. Gold and silver coins recovered | Observance and pre-disturbance survey |
| ANG-003 | | | 1-Nov-03 | Caldeira Island | 6 anchors, several pieces of lead, boat shaped lead ingots, copper ingots | Observation and pre-disturbance survey |
| ANG-004 | <i>San Antonio</i> | 1512 | 1-Nov-03 | Santo Antonio Shoal | 2 ancient anchors and a scattering of ballast stones | Observation and pre-disturbance survey |
| ANG-005 | <i>Bredenhof</i> | 1753 | 17-Nov-03 | Silva Shoal | 15 iron cannons, 5 anchors, lead rolls and ingots, iron bars, copper coins (VOC 1752) | Observation and pre-disturbance survey |
| CAD-001 | | | 11-Nov-04 | V diazi Shoal | 13 iron cannons, several cannon balls, lead shot, lead sheathing and ballast stones | Observation only |
| IDM-001 | | | 15-May-01 | Moz. Island | Stone ballast pile in a sandy bottom, some wood structure | Observation and pre-disturbance survey |
| IDM-002 | <i>Espadarte</i> ("Fort San Sebastian Wreck") | | 30-May-01 | Moz. Island | 2 bronze cannons, ballast stones and a cargo of Chinese porcelain recovered | Total excavation of defined area(s) |
| IDM-003 | <i>N. S. da Conceição</i> | 1608 | 3-July-01 | Moz. Island | Stone ballast pile, lead ingots, silver coins and olive jars, large wood structure remaining | Total excavation of defined area(s) |
| IDM-004 | | | 4-July-01 | Moz. Island | Small ballast pile and some wood remains | Observation only |
| IDM-005 | | | 4-July-01 | Moz. Island | Small ballast pile | Observation only |
| IDM-006 | | | 6-July-01 | Moz. Island | Small stones ballast pile, no other sign of wreckage | Observation only |

Table 1 continued

| Site | Ship name | Date sunk | Date found | Position | Description of relevant finds | Remarks |
|---------|---------------------|-----------|-------------|-------------|---|---|
| IDM-007 | | | 24-Feb-02 | Moz. Island | 3 concentrations of ballast stones in an area of 10,000 m ² , 14 kg, of gold recovered | Limited area excavation and detailed survey |
| IDM-008 | | | 30-April-02 | Moz. Island | Small round ballast in a low flat pile | Observation and pre-disturbance survey |
| IDM-009 | | | 30-April-02 | Moz. Island | Clipper ship, possible from end of XVIII century | Observation only |
| IDM-010 | | | 18-July-02 | Moz. Island | XIX century ship with a cargo of gin bottles, charcoal and various goods | Total excavation of defined area(s) |
| IDM-011 | | | 5-Sept-03 | Moz. Island | Scattered ballast. Green glass bottles (ca. end of 1700s) | Observance and pre-disturbance survey |
| IDM-012 | | | 26-March-04 | Moz. Island | 3 groups of medium to big size ballast stones, some scattering in an area of 80 × 40 cm | Observance and pre-disturbance survey |
| IDM-013 | | | 4-April-04 | Moz. Island | Ballast stones, wood structure, olive jar fragments, lead shot, lead sheathing, etc. | Observance and pre-disturbance survey |
| IDM-014 | | | 13-April-04 | Moz. Island | Ballast stones, wood structure, iron rudder spindle, lead sheathing, etc. | Observance and pre-disturbance survey |
| IDM-015 | | | 29-April-04 | Moz. Island | twentieth century ship, no archaeological interest | Observation only |
| IDM-016 | | | 31-April-08 | Moz. Island | Wood structure, 2 iron grapnels | Observation only |
| IDM-017 | <i>Santa Teresa</i> | 25/7/1622 | 7-June-04 | Moz. Island | 10 iron cannons, ballast stones, hull structure, coarse ceramic shards, etc. | Observance and pre-disturbance survey |
| IDM-018 | | | 28-June-04 | Moz. Island | 5 iron cannons, ballast stones scattering | Observation only |

Table 1 continued

| Site | Ship name | Date sunk | Date found | Position | Description of relevant finds | Remarks |
|---------|--------------------------------------|----------------|------------|------------------|---|---|
| IDM-019 | | | 19-May-07 | Moz. Island | Small anchor lying over medium size ballast stones. Covered by a 0.5 m layer of mud, sand and seashells, at a water depth of 6 m in medium tide | Observation only |
| IDM-020 | <i>São Bento</i> | 27/12/ 1642 | 20-May-08 | Moz. Island | One large anchor, ballast stones, lead sheathing, lead shot and various pieces of iron scattered in the area. 10 silver coins recovered in reconnaissance | Observance and pre-disturbance survey |
| IDM-021 | | | 5-Aug-09 | Moz. Island | Wood structure, copper nails, bricks as ballast, no ballast stones | Observation only |
| IDM-022 | | | 14-Aug-09 | Moz. Island | Scattering of artifacts on the seabed, ballast stones. 1 silver coin. Martaban fragments, one sword | Observation only |
| MOG-001 | <i>N. S. da Madre Deus e S. José</i> | 1802 | 9-July-02 | Mongincual Shoal | 100 iron cannons, copper pins, 44 gold coins recovered during limited excavations | Limited area excavation and detailed survey |
| MOG-002 | | | 1-Dec-03 | Infusse Shoal | 1 anchor, 1 iron cannon. | Observation and pre-disturbance survey |
| NOG-003 | <i>São José</i> | 24/6/1622 | 27-Sept-04 | Infusse Shoal | 4 bronze cannons, 5 iron cannons and 8 anchors. Approximately 25,000 silver coins recovered during excavation | Limited area excavation and detailed survey |
| MOG-004 | | | 7-Aug-07 | Lunga Bay | Steel wreck in a muddy bottom at 16 m depth, near the beach, extensively plundered, ca. 1900s | Observation only |
| MOG-005 | | | 7-Aug-07 | Lunga Bay | Wide scattering of smallish ballast stones in the area of app. 300 m right on the beach. More survey needed, mainly with magnetometer | Observation only |

Table 1 continued

| Site | Ship name | Date sunk | Date found | Position | Description of relevant finds | Remarks |
|---------|---------------------------|-----------|------------|---------------|---|--|
| NAC-001 | <i>S. António e Almas</i> | 1789 | 9-Dec-03 | Crusse Island | 2 iron cannons and ballast stones mound | Observation and pre-disturbance survey |
| NAC-002 | <i>Thert</i> | | 13-Oct-04 | Quissimajulo | Ballast stones mound. Fragments of coarse pottery and many bricks, wood structure | Observation and pre-disturbance survey |
| NAC-003 | | | 18-Oct-04 | Pinda Bank | 1 iron cannon, 1 anchor, ballast stones pile, fragments of martaban jars and ceramics | Observation only |
| NAC-004 | <i>S. João Baptista</i> | 1826 | 19-Oct-04 | Pinda Bank | Ballast stones. Bottoms and necks of green glass bottles | Observation only |
| NAC-005 | | | 19-Oct-04 | Pinda Bank | 3 piles of ballast stones. Bottoms and necks of green glass bottles | Observation only |
| NAC-006 | | | 20-Oct-04 | Pinda Bank | Large scattering of massive amount of ballast stones | Observation only |
| NAC-007 | | | 20-Oct-04 | Pinda Bank | A ballast stones mound underneath a modern steel wreck | Observation only |

Entries in bold are sites that have been excavated. Source www.arq-publications.com

- The available reports (www.arq-publications.com) on the work are incomplete and not oriented towards a specific scientific goal but present brief documentation in view of determining the financial value the finds.
- No final reports have been published, and those that are available on-line are titled “Interim Survey Report”, “Survey Report”, “Intermediate Report, and “Progress Report”. A “scientific publication” by M. Bound on the “Fort San Sebastian Wreck” (*Espadarte*) has been promised for many years on their website (<http://publications.aww.pt/html/mozambique.htm>), but has yet to appear.
- The documentation presented in their on-line publications is not up to proper archaeological standards, or in most cases, is simply lacking (i.e., Mirabal 2007, 2008; see discussion in de Carvalho 2009:20ff).
- There are no available peer-reviewed publications for their work in Mozambique.
- After select salvage activities, the sites are abandoned without follow-up interventions regarding further analysis and protection, or even stabilization measures (recommendations made in Bound 2002:11, but not carried out; see also de Carvalho 2009:21–22).
- Quite simply, the finds recovered from these sites are sold for a profit, and this is not archaeology.
- After being sold, the recovered collections are at risk of being distributed, making it difficult for further scientific study or exhibition.
- The licenses granted with exclusivity and their restrictive way being carried out are an obstacle to the development of local and national research capacities, and development of a deontological approach through local universities and other research institutions.
- Finally, these actions contribute to an extremely distorted and incomplete dissemination of local history.

Concluding Remarks

The multi-faceted history of East Africa’s maritime heritage has only begun to be investigated. The negative impact of past and present commercially-oriented interventions in UCH has already led to irreparable damage, as in the case of Mozambique Island, and it is urgent to mitigate these actions so that more destruction is prevented.

S. Tiago, wrecked at Bassas da India, and *Bredenhof*, wrecked at Silva Shoals, are known salvage and treasure-hunting situations that arose in the past due to active South African-based salvage groups. It seemed, however that such threats were reduced in the past years due to a variety of reasons: it became illegal for South Africans to conduct operations in Mozambican waters beginning in the 1980s because of the apartheid regime at the time, the implementation of stronger local regulations caused fewer people to see “treasure hunting” as profitable, and access to archives, only in Portuguese, could have presented a hindrance to locating shipwrecks (J. Sharfman, personnel communication). However, the current salvage intervention at Mozambique Island and the ca. 700 km-long adjacent coastal strip by Arqueonautas is evidence of the continued threat of destruction from another group that must be mitigated. In the first place, the Mozambican Government’s continued issuance of official licenses to commercially-oriented interventions in the country is the most serious threat to UCH; these actions have completely diverted the recent UNESCO-backed and international initiatives to establish good practices in the region and the development of national intervention capacity in this field regarding research and conservation.

It is still difficult to evaluate the destructive effects of salvage intervention in UCH in East Africa and Mozambique in particular. In fact no systematic evaluations on the extent

and impact of this activity have been made in any one of the countries of the region. Considering the extensive length of this coastline and the scarcity of resources available to protect and study this heritage it will be a long term task that will have to arise from the strengthening of local intervention capacities at universities and other research and curatorial institutions.

The underwater archaeology of Mozambique Island, like many other historically important bays and places in East Africa, cannot be considered in terms of investigating only isolated wrecks but must be seen as a study of a complex succession of deposits from centuries of local trade activity and urban development distributed in space and depth, and whose long-term careful study is fundamental to reconstruct local and regional history. Dealing with such realities needs an academic extended approach with scientific objectives, and the development of local research methods and curatorial expertise.

There are vast gaps in our knowledge and understanding of East Africa's maritime history. In this respect, there are numerous valuable paths of scientific research that can be undertaken by archaeological surveys and investigations of UCH in Mozambique. For example, little is known regarding: (1) the maritime-oriented local trade in East African *Zanj* slaves, (2) the pre-colonial vessel types that were the facilitators of this trade (for example, *nauetas*, *pangaios*, *luzios*, *almadias*, and *zambucos*), (3) the level of trade done by these non-European, traditional Indian Ocean vessels pre- and post-European contact, and 4) the details and extent of the Portuguese involvement in local trade. However, if commercially-oriented salvage groups are allowed to continue to work in Mozambique, this type of research that will enrich the historical context of the region cannot be undertaken. The actions of such groups like Arqueonautas—who lack scientific methodology, destroy site deposition and context, and sell artifacts for profit—means that they are contrary to the preservation of Mozambique's heritage. In addition, the sites that they are salvaging are no longer accessible to archaeologists, such as is the case of UNESCO World Heritage Site of Mozambique Island. These actions are irreversible and must be mitigated by national and international outcry, action, and strong capacity building through legitimate heritage institutions. Particularly essential to mitigate these salvage actions is the education of governmental and public groups alike about the importance of preserving the region's valuable heritage. Overall, priorities regarding short- and long-term actions on UCH protection in the region should include:

- Strengthening local research and curatorial capacities, including the education of competent professionals.
- Correctly educating the public and in particular economic agents like scuba diving tourism operators about how to manage and preserve such cultural resources.
- Promoting regional cooperation—working together in a unified manner.
- Promoting ratification of the UNESCO 2001 Convention on the Protection of the Underwater Cultural Heritage, which specifically states that there should be a refusal of commercial recoveries (Rule 2 of the Annex of the Convention)?

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