An Historical and Ethnographic Study of Cultural Change and Continuity in the Construction and Use of Vernacular Watercraft in the Tanga Region, Tanzania

by

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March 2019

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ABSTRACT

As global technology and corresponding security risks ever expand, traditional lifeways and archaic maritime landscapes are placed in ever greater danger of extinction. Within the Tanga region of Tanzania, numerous maritime populations face both social and cultural pressures that threaten their means of survival and the foundations of their collective identity. Ocean and riverine communities like Pangani, a nineteenth-century slave trade seaport and terminus for inland caravan routes, as well as rural villages such as Tongoni, Mwarongo, and Saadani still utilize indigenous watercraft like dhows and outriggers. These boats are integral to contemporary trade, tourism, and consumerism, as well as smuggling. This thesis investigates the boat design history, current building practices, and the broader socio-economic influences and context of these iconic Tanzanian watercraft. The theoretical basis for the research of craft design evolution centers around the concepts of the "independent peasantry", World Systems Theory, and the *Annales* School of historical thought. Ethnographic data sets include interviews with boat builders and village elders. This is supplemented with archaeological documentation techniques

of boat design features and local maritime material culture. Primary historical sources include colonial European narratives, anthropological studies of locations of trade, boat building and repair activities, and modern socio-economic analyses. The thesis integrates these interdisciplinary data sets with a view to understanding historical trends in cultural change and continuity in traditional boat design to decipher whether any evidence exists of German or British colonial influence.

The ethnographic, historic, and archaeological data collected during the research expedition suggest that no significant European colonial design influence is evident in modern Tanzanian vernacular watercraft within the Tanga Region. The major factors influencing the dismissal of any European design inclusion reflect the horrific treatment experienced by the indigenous peoples under colonial rule, the continuance of the independent peasantry as a socioeconomic entity, the use of what resources are available to ensure survival, the dismissal of expensive and unnecessary modern construction technologies, and the communal protection of traditional lifeways as a cultural schema.

An Historical and Ethnographic Study of Cultural Change and Continuity in the Construction and Use of Vernacular Watercraft in the Tanga Region, Tanzania

Outrigger in Pangani Delta and *Dau* outside of Tongoni Village

A Master's Thesis
Presented to the
Faculty of the History Department
East Carolina University

In Partial Fulfillment
Of the Requirement of the Degree
Master of Arts in Maritime Studies

Ryan D. Marr

March 2019

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ACKNOWLEDGEMENTS

Endless gratitude and thanks to Andrianna Dowell, a stanchion of strength, support, and true loyalty.

Many thanks to Dr. Lynn Harris and Dr. Ken Wilburn for providing invaluable guidance and academic mentorship throughout the research, writing, and presentation processes.

Naomba kusema asante sana kwa msaada wa Daktari Mjema na wanafunzi ya chuo kikuu cha Dar es Salaam. Kusoma historia ya nchi ya Tanzania ni muhimu sana kulinda uhuru. Nashukuru kwa vitu vyote.

This thesis is dedicated to the men and women of our collective armed forces who sacrificed all in the name of honor and for the love of their family in the shield wall. For the veterans, both past and present, who face a society everyday that has not and will not ever understand them. Hold the line.

TABLE OF CONTENTS

List of Tables…….....vii

List of Figures……...viii

Chapter 1: Introduction…….…….....…….....1

I. Research Questions.....5

II. Literature Review……..……..……..…….....6

Chapter 2: Historiography/Theory.....……..……...14

Chapter 3: Methodology.....……..…….....62

Chapter 4: Analysis.....…….....….....84

I. Ethnographic Text Analysis.....…….……....85

II. Archaeological Analysis.....……..……101

Chapter 5: Conclusion……...……...…116

References.....121

Bibliography…….....124

Appendix A: Field Research Images.....129

Appendix B: *Sapa* Vessel Typology.....131

Appendix C: Vessel Models by *Mzee* Dadi, Tongoni Village, Tanga Region.....160

Appendix D: *Dau* Recording Proforma.....165

Appendix E: Outrigger Recording Proforma.....168

Appendix F: Informant Survey Proforma.....171

Appendix G: Interview Transcripts (English and KiSwahili) 173

Appendix H: Field Research Quantitative Data Log.....244

Appendix I: Glossary of KiSwahili Maritime Terms.....250

Appendix J: Informant IRB Agreements.....252

Appendix K: Archaeological Site Maps of Survey Areas and *Sapa* 1 Vessel Recording.....260

LIST OF TABLES

Table 1: Grounded Theory Flow Chart I: Table 1: Colonial Influence Flow Chart

Table 2: Grounded Theory Flow Chart II: Political and Economic Influence Flow Chart

Table 3: Thematic Elements Influencing Vessel Design (Codes Refined and Quantified)

Table 4: Quantitative Comparative Analysis Table with Design Inputs by Informant Percentage

Table 5: Quantitative Comparative Analysis Pie Chart

LIST OF FIGURES

Figure 1: Google Earth Satellite Image with Marked Research Sites

Figure 2: Google Earth Satellite Image of Tongoni Village and Boatyard

Figure 3: Google Earth Satellite Image of Pangani Boatyard

Figure 4: Boat repair and construction yard, Nungwe, Zanzibar

Figure 5: Author discussing German occupation with a village elder in Saadani village

Figure 6: The Northern East African Coastline

Figure 7: The Eastern Coast of Kenya and Lamu Archipelago

Figure 8: Large outrigger with scrollwork near Lamu Town waterfront

Figure 9: Reproduction of a traditional *Mtepe* as used by the WaAmu

Figure 10: Figurehead with scrollwork of a reproduction *Mtepe* as used by the WaAmu

Figure 11: *Samba* undergoing repairs, Lamu, Kenya

Figure 12: Author reviewing the KiSwahili vessel nomenclature for a *sapa*

Figure 13: *Mfundi* demonstrating the use of a manual drill, Nungwe, Zanzibar

Figure 14: Approaching the village of Tongoni from the ruins, Tongoni, Tanga Region

Figure 15: Lamu waterfront with large *daus* at moorings

Figure 16: Author discussing research plan with interpreter, Tongoni, Tanga Region

Figure 17: Author discussing hull repair and protective measures with elders

Figure 18: Scaled photograph of *pamba* (cotton) caulking found on discarded *sampa*

Figure 19: KiSwahili nomenclature for framing element named *sayari* (planet) within a discarded *sampa* (flat-bottomed *dau*) vessel

Figure 20: Scaled Photograph of *Handi*, Tongoni, Tanga Region

Figure 21: *Mfundi* Muddi demonstrating the use of the *handi* to interpreter to check Y-frame angle, Tongoni Village, Tanga Region

Figure 22: *Mfundi* Muddi instructs author in use of *handi,* Tongoni, Tanga Region

Figure 23: *Mfundi* Muddi outlines the formed rebar for the *taruma* using chalk paint before shaping the frame piece with his adze, Tongoni Village, Tanga Region

Figure 24: Tongoni ruins, Tonogoni Village, Tanga Region

Figure 25: *Mfundi* Muddi, P.I, and interpreter discuss vessel construction at the Tongoni boatyard

Figure 26: *Mfundi* Muddi forming the *betana*, or knee after securing it to the *fashini*, or stem post with a machined lag bolt, rabbet on keel visible, Tongoni Village, Tanga Region

Figure 27: *Mfundi* Muddi secures the lag bolts of the sternpost on a large ocean-going *dau*

Figure 28: Scaled photograph of the *njia ya maji*, or waterway, seen on all Y-frames emplaced along the keel of the *dau*, Tongoni Village, Tanga Region

Figure 29: *Dau* with emplaced Y-frames, garboard strakes, and stern post with weighted arms for plank forming visible, Tongoni Village, Tanga Region

Figure 30: Author forms rebar guide for Y-frames and checks arm angle with *handi* under supervision of *Mfundi* Muddi, Tongoni Village, Tanga Region

Figure 31: Secured stern post and knee with braces, Tongoni Village, Tanga Region

Figure 32: Hull planking being formed using *kipindo*, Tongoni Village, Tanga Region

Figure 33: Manual tools used by *Mfundi* Muddi for construction, Tongoni Village, Tanga Region

Figure 34: Hand forged nails sourced locally, Tongoni Village, Tanga Region

Figure 35: Handmade fishing weir, Mwarongo Beach, Tanga Region

Figure 36: Local women weave the sisal plant into rope for fishing net deployment, Tongoni Village, Tanga Region

Figure 37: Traditionally constructed speedboat, or *mgwanda*, Stone Town, Zanzibar

Figure 38: Hull detail of *mgwanda*

Figure 39: Interior of *mgwanda* from the stern

Figure 40: Topside of *mgwanda* from stempost

Chapter 1: INTRODUCTION

The indigenous watercraft of the Tanga region are primarily traditional trading and fishing vessels. Whether in the form of the outrigger dugout canoe often used to sustain coastal villages, or the prolific *dau* whose use continues today, the various forms of waterborne vessels embody a traditional way of life largely unchanged for thousands of years (Miller 1980). These basic craft not only allow for merchants to ply wares on foreign shores, but also carry knowledge and foster cross-cultural exchange. For over 1,200 years the *dau* has acted as the means of communication and exchange between cultures and peoples who otherwise would have never come into contact (Miller 1980). Before the structured commercial frameworks of Western Europe began regulating and taxing all forms of interaction, the West Indian Ocean flourished as not only a free market but also a culture unique unto itself (Miller 1980).

The coastline of East Africa is home to an incredibly rich cultural heritage, especially in regards to maritime history. Illustrative case studies are seen within three locations: Pangani, Nungwe, and Tongoni (Figure 1). Pangani, a river basin which served as a nineteenth-century slave trade seaport and terminus for inland caravan routes, is also where local craftsmen and fishermen have employed unique watercraft for thousands of years (Sheriff 2010:2). The city of Pangani is located within the Tanga region of Tanzania, in close proximity to the northern border with Kenya. An integral riverine port for both pre-colonial and colonial era trade, Pangani has long served as a key waypoint for mariners from Zanzibar, Pemba, and Mafia Islands (Marr Field Notes, 2017). Pangani has been selected as an appropriate case study because it is indicative of the greater Tanga region on the eastern coast of Tanzania, while Tongoni is utilized to represent the smaller, rural fishing villages along the coast. Nungwe acts as comparative standard to differentiate between construction techniques of the mainland versus that of Zanzibar. The

traditional form of vessel construction previously so prevalent along the Swahili coast is still present within the area, though its future remains uncertain and their vessel construction technologies exemplify heritage at risk.

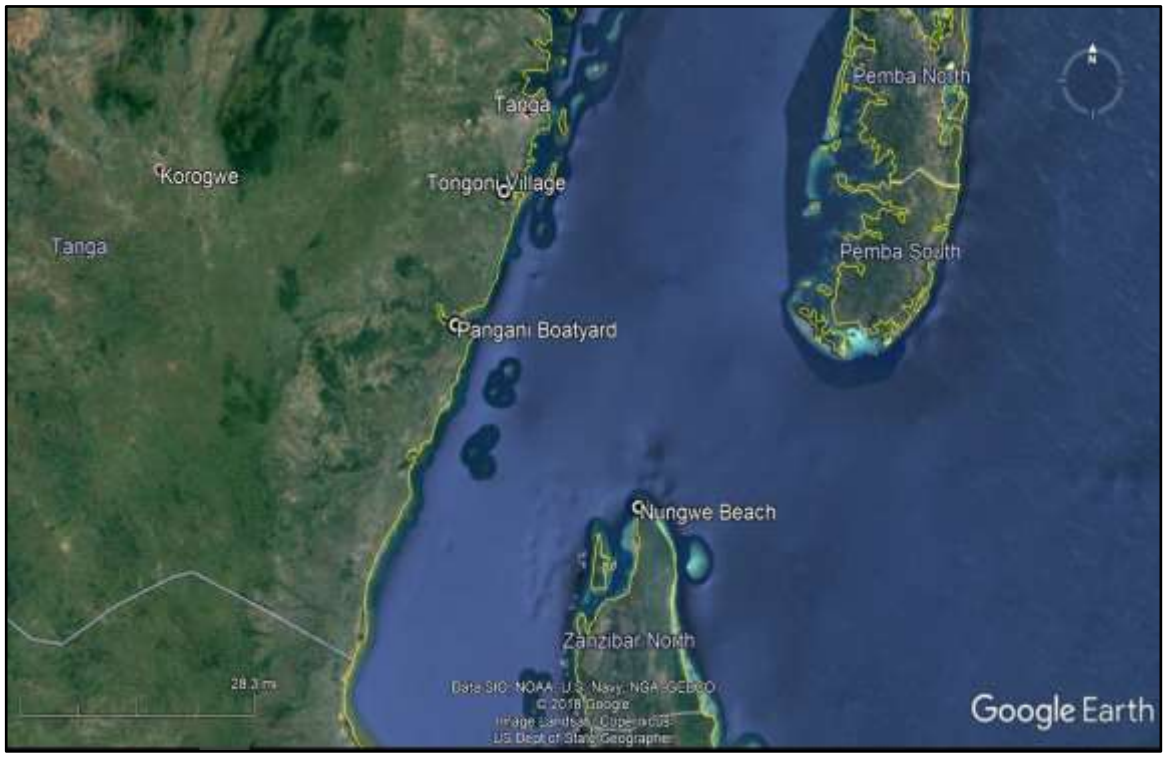

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Figure 2: Google Earth Satellite Image of Tongoni Village and Boatyard

Figure 3: Google Earth Satellite Image of Pangani Boatyard

Figure 4: Boat Repair and Construciton Yard, Nungwe, Zanzibar

To best understand the evolution of Tanzanian *daus*, outriggers, and other vernacular watercraft, it is necessary to trace their design evolution within the greater socioeconomic context. The perpetuation of ship construction through the centuries is demonstrated using historical narrative, ethnographic interviews, and discussion of modern recycling efforts. Vessel nomenclature and a basic typology has been established through interaction with the expert ship builders. Interviews provide the local and historical knowledge that form the basis of the study. The challenges economically, culturally, and in a greater security sense are explored and discussed within the limits of the established Interntational Research Board paradigm.

The preliminary conclusions focus on the rejection of colonial design influence on modern indigenous watercraft construction as a result of historical abuses, pride in traditional lifeways, and the political and economic constraints affecting the pursuit of survival. Theoretical considerations include the concept of the rural Tanzanian community as a misunderstood,

independent socio-economic identity and the use of material culture as a form of passive resistance against colonial rule.

I. Research Questions

The indigenous ship-craft traditions emulated by the *dau* and outrigger in their various forms provide an ideal platform to gain greater perspective of the maritime history of the Tanga region and East Africa. Constructed of locally sourced materials and built by experienced craftsmen using basic hand tools, these vessels have evolved little and only by study of design nuance and influence can their narrative be established.

While the means of operation of the *dau* and outrigger are similar, their typologies and construction methodologies vary greatly. The basic design of an East African *dau* is that of a single lateen sail powered, hand-crafted vessel whose length and depth of hold varies depending on its role as either a fishing or cargo vessel. Construction begins with the laying of the keel and follows a bottom-based tradition in that framing follows the laying of the garboard strake and first series of hull planking. Outriggers are a simpler design meant only for coastal activity and consist of a single tree trunk hollowed out and hand formed into a traditional canoe form. Multiple thwarts are emplaced including some form of mast retainment feature. They can be powered by oar, sail, or pole. Each of these broad classes of vessel design contain many variances and require further study to establish a baseline typology.

The primary research question introduces the study of colonial design influences and the lack of an indigenous written record, thus establishing the need for ethnographic field work to understand primary source perspective. The secondary research questions establish the ethnographic collection requirements and vessel recording objectives. The main objective is to initiate a historical record of vessel construction techniques which then can be compared to

contemporary recording efforts.

Primary Question

1. Is there evidence of colonial influence, whether German or British, on the construction and use of *daus*, outriggers, and other vernacular craft in the Tanga Region and Pangani sea port?

Secondary Questions

1. Can collective indigenous perspective on colonial histories be reflected passively or actively within maritime material culture, in this instance, vernacular vessel construction?
2. Is watercraft design influenced by the available building materials, surrounding environments, or the builder's personal choice or skill set?
3. What influences on technological changes or shifts are apparent, if any, in vernacular watercraft design?
4. Do government regulations or types of cargoes, legal or illicit, impact design and dimensions?
5. How do these vessels operate and what are the Swahili nomenclature and vernacular associated with their construction and use?
6. What are the backgrounds of the expert boat builders, or *mfundi*, and what are their perceptions of their region's collective colonial past and their craft?
7. What are the patterns of recycling and reuse of old boats?

II. Literature Review

Most authors agree that East African indigenous watercraft are strongly influenced in both design and construction techniques by Arab shipwrights and interaction (Sheriff 2010). While some research focuses on indigenous craft in East Africa, even incorporating ethnographic methodologies, little has been done regarding the possibility for colonial influence on vessel design. Previous works, such as the article by W. Eberhard Falck titled "Boats and Boat-building

in Tanzania (Dar es Salaam and Zanzibar)" (2014), suggest the Portuguese as the most likely origin for any design deviation, but no evidence of design alteration has been noted that can be effectively traced back to initial contacts of the early sixteenth century (Falck 2014).

The socioeconomic dynamic can be observed through primary sources detailing business transactions via various port ledgers or logs, but the cultural nuance critical to an ethnographic study will begin with a solid grounding in cross-cultural dynamics. Abdul Sheriff spent the majority of his youth in Zanzibar and now stands as a leading expert in the WaSwahili, as well as what he has coined "dhow culture". His writings such as *Dhow Cultures of the Indian Ocean* (2010) provide a maritime perspective on both the emic traditions along the Tanzanian coastline, as well as primary source accounts regarding foreign occupation.

Zanzibar under Colonial Rule (1991), co-edited by Sheriff and Ed Ferguson, provides a detailed historical account of the experiences of the Zanzibarian people under both German and British colonial rule. As a collection of international contributions, *Zanzibar under Colonial Rule* serves as a multi-perspective overview of not only the historical chronology of the former kingdom, but also provides context through socioeconomic, political, and cultural analysis (Sheriff and Ferguson 2010). In relation to the study of indigenous watercraft, it is important to understand the colonial influences dictating interaction with both domestic and international traders and the effect the social dynamic would have upon shipbuilding traditions along the eastern coast of Africa.

In *Slaves, Spices, and Ivory in Zanzibar,* Sheriff (1987), outlines the economic rise and fall of Zanzibar through the legal and geo-political progression of three main trade goods. As a result of the colonial powers in control, the people of the former sultanate of Zanzibar adapted to shifting legal perspective while maintaining a firm grip on the Indian Ocean Basin trade network

(Sheriff 1987). After British law made large scale slave trade no longer viable, the ivory trade was promoted as a profitable alternative. In both instances, indigenous watercraft such as *daus* and outriggers were employed to move cargoes of both legitimate and illicit means (Sheriff 1987).

Dhow Cultures of the Indian Ocean (2010), also by Sheriff, discusses not only the cultural ramifications of the global trade interactions, but also sheds light upon the lesser known criminal aspect of dhow usage. The dhow culture encompasses the maritime regions surrounding the Arabian Gulf, the Red Sea, and the Indian Ocean. Dhow culture cannot be defined explicitly as that of the Swahili coast or even the maritime folk group but is amorphous and subject to numerous shaping influences (Sheriff 2010). This being said, it has lasted thousands of years as the platform for cultural exchange. Sheriff includes a multitude of locales and cultural groups to better portray the universal fabric of what he has termed "dhow culture" (Sheriff 2010). Having been raised in Zanzibar, he elicits information that is typically inaccessible to foreign researchers.

Within *African Merchants of the Indian Ocean* (2004) John Middleton discusses the recorded history of the greater Swahili culture and its pervasive influence throughout the East African seaboard. Without trying to establish a closed definition, Middleton illustrates the inherently African personality of a culture group that has incorporated a multitude of foreign elements as a result of diverse interactions (Middleton 2004). Considered the mother of East African cultural subgroups, the Swahili identity has received more academic attention than that of the maritime or dhow culture within Tanzania but remains dynamic depending upon context and locale.

Kathleen Stahl's detailed cultural text, *Tanganyika: Sail in the Wilderness* (1961),

provides historical context for the multitude of different tribal elements and ethnographic groups within the former colonial nation of Tanganyika. With a foreword by the “father” of independent Tanzania, Mwalimu Nyerere, this book was published the year Tanzania received independence from the British crown and allows the reader a unique insight into the dynamic forces involved in the formation of the modern Tanzanian identity (Stahl 1961).

The cognitive framework of the colonial forces and settlers is typically illustrated through a socioeconomic lens with little consideration given towards what the indigenous, occupied people perceived as their intentions. In a rather controversial manner, Helge Kjekshus proposes in *Ecology Control and Economic Development in East African History* (1977) that the nineteenth century was not as pervasively destructive to the African hinterland and coastal states as previously established. Considering the date of publication, Kjekshus' text will provide an in-depth look at archaic conservation concepts and, through empirical projection, provides a look into the persepetives responsible for the current issues with ecological mismanagement encountered today. The information provided assists in demonstrating the shift from exploitation for profit to sustainable custodianship to preserve the maritime focused life ways prevalent in Tanzania.

Research has been conducted regarding dhow and outrigger construction along the East African coast, but little academic attention has been paid to the design evolution of Tanzanian indigenous vessels, especially within rural areas. A similar study in terms of focus was authored by W. Eberhard Falck entitled “Boats and Boat-building in Tanzania (Dar es Salaam and Zanzibar)” (2014) which focused simply upon the construction techniques in use today with no consideration of historical narrative, traditional knowledge exchange, or influencing factors. Tanzanian maritime culture has endured for centuries and while the traditional styles of boat

construction endure, it remains to be determined what effect colonial, environmental, and economical forces have had upon the resulting product and its usage today (Falck 2014).

Another similar effort can be seen in “Constructing Sailing Ships on the Swahili Shores” (2005) by Rose de Leeuwe. Focusing primarily on ship construction techniques as demonstrated by Zanzaibarian shipwrights, the author spends much of the article describing the five main types of vessel in use, followed by a detailed account of the construction of a *mashua* fishing vessel (De Leeuwe 2005). The author argues that while the Arabic influences are both historically and presently apparent, definitive indications of the adoption of either European design or technique are lacking (De Leeuwe 2005). De Leeuwe supports further ethnographic investigation and concludes her article by proposing:

> Shipbuilding and other maritime aspects about Swahili culture must be reviewed within the broader perspective of the Indian Ocean seascape. Like contacts and exchanges with other cultures, shipbuilding is a dynamic process. It changes over time, per demands and innovations. The lack of excavated wrecks currently prevents the testing of this statement, but hopefully comparative and ethnographic studies give some insight on the subject by combining the data that is available (de Leeuwe 2009:113).

An often-overlooked aspect of East African culture is the strong ties to the long-established diaspora within the Indian sub-continent. Blanche D'Souza discusses the critical role the trade connection between the Indian and Swahili coasts played in global cultural diffusion in her *Harnessing the Trade Winds* (2004). As a result of overriding European and Arab historical precedence, the contributions of Indian tradesmen and sailors to East African infrastructure and globalization efforts have been minimized for generations (D’Souza, 2004). D'Souza's book (2004) contributes an important element to the ethnographic profile necessary to best support research of the dhow and maritime folk groups (D’Souza 2004).

While the role of indigenous East African watercraft within maritime historical culture is widely accepted, how these function as vessels of conflict at the hands of native sons remains

greatly ignored. Smuggling and illicit trade have long run rampant within the West Indian Ocean basin as a result of colonial market cornering and taxation. Whether covertly transporting material or human cargoes, *daus* remain the smuggler's vessel of choice.

The British Royal Navy became deeply invested in anti-slavery efforts along the East African coast after outlawing the practice within its colonial possessions (Sulivan 2003). A primary source account of anti-slavery patrol efforts by the Royal Navy, Sulivan's *Dhow chasing in Zanzibar waters and on the eastern coast of Africa. Narrative of five years' experiences in the suppression of the slave trade* (2003) provides first person insight into the challenges faced by colonial sailors and their general opinions of the indigenous people they were attempting to regulate. He illustrates how the dhows were used as facilitators of the black-market trade and displays the impressive nautical skill sets utilized by the Swahili people to pursue survival by any means (Sulivan 2003) Slavery was a profitable illicit trade even after the British Empire had made it illegal within its colonial holdings. The traders who participated in the black-market purchase and sale of human cargo placed their faith in small, fast watercraft piloted by local sailors (Sulivan 2003). Thus, the Royal Navy patrol craft were forced to participate in interdiction efforts as an attempt to stem the tide of slaved being shipped to ports abroad. Despite the best efforts of colonial authorities, local *daus* and sailors continued to find ways to avoid legal interdiction in the pursuit of profit (Miller 1980).

While traders of Arab origin introduced firearms to the African continent, European colonial entities were responsible for flooding the market with weapons of varying quality (Beachey 1962). The Arabic traders typically traded with local tribes and slave hunters to obtain human merchandise for the growing international market. They would trade worn out or broken firearms, thus securing substantial profit margins with minimal security risk. After the

Portuguese established contact and the colonial powers began expanding into the "Dark Continent", better quality weapons became accessible because of trade with the newcomers (Beachey 1962). The social status and tactical advantage offered by such weaponry resulted in a high demand for firearms of any type and thus spawned a thriving illicit trade (Beachey 1962). While the quality of these firearms varied greatly, the accessibility of modern weapons became a major concern for colonial forces and missionaries alike (Beachey 1962). As with other illicit or regulated material, *daus* and other indigenous craft became the main means of transport for the arms trade in East Africa.

As a result of corrupt and inconsistent government law enforcement, the Indian Ocean Basin has facilitated the transportation of illegal cargoes for hundreds of years (Martin 1979). While the use of dhows to smuggle spices and slaves in the nineteenth century may be well established, few recognize the archaic patterns that still dictate illicit trade along the same routes today. The participants and cargoes may have changed, but the vehicles used have a direct ethnographic tie to past maritime cultures. Modern use of native watercraft to smuggle narcotics and weaponry especially along the Kenyan and Somali coast continues without effective interdiction (Miller 1980). While the networks themselves have become better known because of high profile terrorist groups such as Al-Shabaab, the participation by poor, local sailors using outdated craft demands further investigation. The utilitarian nature and minimal cost of indigenous craft appeal not only to the criminal element, but also to future minded global citizens as well.

In stark contrast to the illicit underworld, modern *daus* are capable of fostering development within local maritime communities through sustainable tourism endeavors and coastal preservation in the form of vessel recycling. When the watercraft are no longer

seaworthy, they are sold off to local craftsmen who use the materials to build custom furniture (dhowfurniture.com 2017). The furniture is in turn sold to tourists, thereby stimulating the local economy at all levels and ensuring responsible material reuse (dhowfurniture.com 2017). This example of eco-friendly business practices shows the viability of coastal stewardship practices when implemented with the interests of the greater community in mind. *Daus* and outriggers can become the literal platform from which Tanzanians model future economic endeavors and become the rightful guardians of the coasts they hold so dear.

Chapter 2: HISTORIOGRAPHY AND THEORY

Long recognized as the birthplace of mankind, East Africa remains one of the most historically rich yet academically ignored cultural regions in the world today. Despite hosting an ethnographic diversity far greater than most Western counterparts, East Africa and her inhabitants have only recently been able to voice their input into the global conversation. Colonial occupation of the African continent was only a brief interlude in comparison to the greater history of its inhabitants; however, it remains a greatly influential period within African history as it forced the creation of a collective identity outside of traditional understanding. The influence of imperial subjugation and the racial delusions that partly motivated it, in conjuction with national glory and gold, are understandably pervasive. Even to attempt to outline the violent transitional period between European incursion and African independence is beyond the scope of this thesis.

A case study is possible, however, especially in consideration of maritime history and technological evolution. Tanzania is deserving of close inspection in that it was occupied by not one but two imperial powers during some of the most dynamic conflicts of modern times. To further narrow the scope of such a research endeavor, it is necessary to select an area of particular interest, in this case, resistance against imperialist occupation materialized both in action and passively through the perpetuation of long-standing tradition. To lay the necessary foundations to effectively analyze whether modern Tanzanian watercraft construction has been influenced by previous colonial occupation, it is essential to discuss the theoretical underpinnings and historical perspectives that have shaped Tanzanian society, culture, and perspective today.

Theoretical concepts act as the formative element of historical narrative and assist in the

understanding of past perspectives. This principle is especially important in consideration of past social paradigms that stand in direct opposition to current thought and legislative action. Within the historical record of imperial action in East Africa, three main concepts stand out as the social theories of greatest influence and allow the modern reader to better appreciate both the ignorance of the oppressor and the plight of the oppressed. Social Darwinism, neo-Weberian thought, and the concept of the "peasantry" as a misunderstood socio-economic group provide the structure needed to conduct honest academic analysis of both the current historical record and modern ethnographic research in the name of establishing an indigenous voice for Tanzanian material culture, in this instance in the form of their vernacular watercraft.

Vernacular watercraft design is grounded in the "cultural ecology" of a given population group and is representative of the dynamic relationship between a society and the environment within which it operates (Evans and Smith, eds., 2017:2). The vessels of a given society are representative of the cultural attitudes, "or phenomena", as they are collective product of the present "technology, social needs, and ideology" within a given context (Evans and Smith, eds., 2017:2). In terms of outside influences separate from environmental necessity, such as those of colonial occupation, indigenous watercraft can act as means of passive defiance and cultural continuity (Evans and Smith, eds., 2017).

The cultural resistance of indigenous Tanzanians against colonial influence as demonstrated through their watercraft is best supported through historical study of the prejudiced perspective of the colonial powers, the indigenous social resistance movements against colonial rule, and finally through comparative analysis to a similar maritime cultural group.

I. The Colonial Conscience

Originally heralded as altruistic and even humanitarian minded, European colonial efforts

in Africa must be reframed by establishing a bilateral record to include written accounts of indigenous sources. Similar to the United States and its use of "Manifest Destiny" to legitimize outward expansion, Europeans felt a degree of responsibility or "guardianship" for what they viewed as the uncivilized masses within Africa (Austen 1968:3). Even before the Great War, conflict in the form of a race for colonial possessions existed between the British and German empires. Though Bismarck initially resisted the conservative call for colonial expansion, he needed to maintain both the support of the *Volk* and the opposing political parties, all of whom supported the concept of pan-Germanism (Perras 2004:257). Colonial possessions boosted the international reputation of their respective occupiers, and East Africa became an ideological battleground for competing national identities long before the assassination of Archduke Ferdinand (Perras 2004).

During the peak of global colonial expansion, imperial powers justified the excavation and explotation of treasure and lives in terms best associated with Social Darwinism and, as seen with imperial German thought, the "black Other" (Schubert 2011:400). In a flagrant application of Charles Darwin's biological ideas related to natural selection, imperialists applied Darwin's ideas to politicas and argued that "survival of the fittest" meant that an inherently "superior" society was morally obligated to control and "civilize" the "backward" or lesser peoples within their respective colonial claims (Schubert 2011:400). The unification of Germany and the establishment of the Reich depended upon the expansion of colonial holdings in the name of German world power (Perras 2004:257).

The legitimization of crimes against humanity focused around the superiority of Western culture over that of the raw, savage lifeways indigenous to Africa. The concept of the "black Other" is the result of the symbiotic meshing of the overtly racist mantra from the Enlightenment

period with that of politically based Social Darwinism (Schubert 2011: 400). What began as generalized racial superiority and elitism was bolstered by the prevailing sociological thought of the early twentieth century. Colonial perspective was grounded in "neo-Weberian 'modernization' or developmentalist theory" (Glassman 1995:9). In a twisted form of racial renaissance, European society viewed subjugated peoples as simple creatures who, in reaction to any form of progressive input, would react violently in defense of their peasant agrarian "traditions" (Glassman 1995:9). The knee-jerk reaction to the imposition of a formalized state government, colonial oversight, and the forced introduction to international market economics has dominated historical literature as the causation of the eventual armed uprisings seen along the Swahili coast, including both Tanga and Pangani (Glassman 1995).

Racist social conditioning permeated all forms of state sanctioned foreign interaction during the imperial period, even extending beyond colonial accounts into the very policies and operating procedures of international aid agencies (Glassman 1995:9). Neo-Weberian thought legitimized sub-human treatment of the indigenous peoples within colonial possessions in order to bolster domestic industry and satisfy its need for raw resources. Until the rise of the international African Studies Association and regional organizations like the Southeast Regional Seminar in African Studies, academic study often fueled the cyclical thought patterns of state actors by dismissing the agency of the indigenous populations in question through tilted comparison to European peasant groups (Glassman 1995:9).

An example of the lasting power of European imperialism is seen in the works of French historian Roland Mousnier, who authored *Peasant Uprisings in Seventeenth century France, Russia, and China* (1970). Mousnier proposes that the peasant populace, the majority of any agrarian based society, can at times be brought to a lather by conservative rural elites (Glassman

1995:9). Denying any form of preconceived social planning or objectives, Mousnier attributes the peasant insurgencies to an animalistic rejection of any change to the established paradigm, as agrarian histories are slave to the "omnipotence of custom" (Glassman 1995:9). European historical authorship on the Swahili uprisings has continued its own kind of "tradition", in the form of blatant racial superiority, denying indigenous peoples the ability to act in defiance by dismissing their action as a mere refusal to accept any form of change no matter the context. Lacking any form of a "will of their own", the East African peasantry along the coast merely abided by the dictates and desires of the "Arab elite of their town" (Glassman 1995:9). The revolts seen in the later half of the nineteenth century in Pangani and Tanga stand in stark opposition, as the common people stood in direct defiance of their social superiors' best interests as a result of long-standing social unrest.

The Enlightenment period offered a platform from which to delineate cultural superiority based upon the concept of the "Great Chain of Being". While there is evidence of the interplay of both concepts, their relative prevalence varied throughout the occupation period dependent upon the propaganda needs of the empire (Schubert 2011: 400). This thinly veiled hate speech empowered by the Enlightenment period is best described by Michael Schubert as follows:

> All of humanity was depicted, so to speak, in terms of 'levels' of culture and civilization, and organized hierarchically with the white European at the highest level of development (culture) and the black African at an 'underdeveloped' level (nature)…. Accordingly, the 'cultureless savage' could and should become a civilized person. The Great Chain of Being theory was further developed in Germany by various philosophers from Kant to Hegel and Herder, and empirically confirmed through accounts of real and fictional travels, such as those by Christoph Martin Wieland and Peter Kolb (Schubert 2011:403).

Motivated by an intoxicating mix of religious, social, and genetic alibis, German colonial powers violently exploited East Africa of resources and labor in the name of the Reich (Schubert 2011: 400-403). The cognitive dissonance demonstrated between the espoused Christian ethos

and the attitudes employed when dealing with indigenous peoples permeated German colonial society to the extent that a common conversation starter among station troops was to inquire as to whether they had "shot a Negro yet?" (Perras 2004:113). Nationalistic views concerning the necessity to colonize Africa were supported by propaganda efforts and emphasized the right of those considered the most culturally "advanced" to control lesser peoples.

The efforts by German colonial forces to "educate" and "civilize" the indigenous peoples of their East African possessions acted as a means of reinforcing national identity and reaffirming the superior characteristics of Prussian lineage. With jingoistic rhetoric eerily prophetic of its autocratic future, German colonial powers promised citizens relief from economic hardship through expansionist efforts. In a form of perverse "cultural mission", German imperialists exacted brutal, intensive control of their colonial holdings, most important of which was Tanganyika (Schubert 2011:403).

In turn, the internal rivalries between European imperial powers only served to further complicate and endanger the lifeways of subjugated Africans. Imperial nations would enact expansionism under the guise of a moral duty or obligation to assist those who would otherwise never experience what they believed was modern civility, some of which was embedded in the "Dual Mandate" of Fredrick Lugard. This perspecitve stands in stark opposition to the well-known and established abuses suffered by Africans such as Herero during German occupation in Southwest Africa and Congolese at the hands of Belgian occupiers and forms the need for an indigenous outlook to be addressed more fully.

To further hinder national development, colonial officials established working relationships with the ruling and wealthy classes within Tanzania, thus increasing the class divide and exacerbating internal strife. By doing so, foreign officials could make it appear as if native

Tanzanians played a significant role in the fate of their government and people when in fact these working arrangements were viewed by wealthy Tanzanians as a means to further separate themselves from the struggling majority (Austen 1968). Corruption and abuse of power are the worst of cancers to afflict a governing body and the effects of such are still evident today.

During World War I, British propaganda denounced the treatment of Africans under colonial rule as it served to boost support for the war. These propaganda efforts were not so much focused on exposing the plight of those affected as on rallying both European and American backing (Austen 1968:120). The British violently gained control of Tanganyika in 1916, and despite vehement denouncement of German oversight, they did not initially demonstrate any true deviation from the Reich's methodology. The first interaction between the indigenous population and their new colonial overlords was a result of occupation through combat. The British had long been espoused as the enemy by the Germans, and understandably the affected peoples of Tanganyika were wary of the new European presence (Austen 1968).

The British were already facing difficulty in managing the empire and the administrative staff delegated to govern the newly occupied East African territories were not recruited from those who had served the Crown overseas. The new territory was seen as a means to an end, a resource with which to continue to push the Germans out of East Africa and finish the conquest of the German Protectorate to the southeast (Austen 1968). The new colonial overlords introduced a form of decentralized government called "indirect rule" that delegated some authority to local chiefs but it only further exacerbated class, race, and political tensions within the colony (Austen 1968).

Only a select few Tanzanians were given access to the workings of the British colonial government, and these individuals were an inadequate representation of the population over

which they presided. The decentralized approach demonstrated the lack of cultural sensitivity or general social appreciation embodied by the occupying European powers during the late nineteenth and early twentieth centuries. Working from within a Western societal framework, both the British and German colonial forces struggled to divorce themselves from the Eurocentric socio-economic models. Tanzanian communities operated within a dynamic all their own based upon traditional lifeways and small community interactions (Hyden 1980). Both German and British imperial governments failed to appreciate that the peoples of Tanzania had thrived long before their misguided efforts and as a result, both would fail to exert any significant control over an independent peasant population they did not understand (Hyden 1968).

Only recently has the reactionary view of indigenous East Africans to foreign rule, as propagated by European authors, been countered with the attribution of agency to the revolting parties. In reference to the occupation of East African by the British following the First World War, critics of the "simple" peasantry concept have proposed that the violent insurrections were the result of the East African awareness that colonial invasion would only continue unabated without direct action (Glassman 1995:10). As stated by Glassman, the indigenous populations "anticipated the mass-nationalism" of future European generations and consciously organized an insurgency in an attempt to dissuade further incursion. Glassman discusses the benefits of the progression in demonstrating African consciousness with the redefinition of "the defence of tradition from reactionary vice into protonationalist virtue", but also addresses its overriding shortcomings (Glassman 1995:10). While conducive to further investigation of the African perspective, this shift in thought still leaves the concept of "tradition" undefined and blindly attributes all action to its defense, in a manner similar to previous imperial historians (Glassman 1995:10). His text substantiates the need for a more comprehensive acknowledgement of historic

East African agency and further study of its guarded traditions.

Terrence Ranger, the first chair of the History Department at the University of Dar es Salaam, depended on oral history collections to compensate for the lack of archival records in Tanzania. Ranger had studied insurrection in seventeenth century Ireland during his time at Oxford University and was exiled from Rhodesia before resettling in Tanzania. While researching the Maji Maji insurrection, Ranger employed numerous students to perform ethnographic field work collecting primary source accounts. While he was originally dubious as to the usefulness of modern oral histories discussing historical events, he soon found the narratives to be "wonderfully illuminating" and became a proponent of their utility (Hamilton 2011:1). His use of oral histories is fundamental to the formation of what became known as the "Dar es Salaam school of thought" and to establishing indigenous agency in historical analysis and the formation of national identity (Hamilton 2011:1).

Material culture stands as the manifestation of cultural identity and provides an ideal platform for further historical investigation which holds especially true for watercraft technologies as the premier example of indigenous thought evolution. Vernacular watercraft design is grounded in the "cultural ecology" of a given population group and is representative of the dynamic relationship between a society and the environment within which it operates (A.M Evans and S.O. Smith, ed, 2017:2).

II. The Peasantry Problem: A Discussion of Socioeconomic Theory

> One hears things that can scarcely be believed, despite long East African experience … In their uprising, the indolent Negroes have displayed an intensity of which we had thought them incapable.
> -Justus Strandes, German merchant, September 30, 1888 (Glassman 1995:226)

To be able to dictate whether colonial influence is in fact present in any form of material culture, it is paramount to become familiar with the history of foreign intrusion within the region

and to be able to identify the indigenous perspective both during and after occupation. As the great European age of imperialism came to a close after World War II, its collapse within the greater continent of Africa provided the catalyst for nation building while also imbuing societal memories that would impact both political and cultural outlook for generations to come. The failures of the colonial powers to effectively subjugate Tanzania are directly tied to their misunderstanding of the cultural dynamics and identities of the indigenous peoples themselves.

The misconceptions regarding Tanzanian socio-cultural lineage and stratification began with the initial interactions between European traders and coastal indigenous settlements. As the need for slave labor increased with the expansion of Western colonial possessions, various points along the Tanzanian coast became established as major trade centers and focal points for international interaction. The small villages remained isolated, and most of the future nation perpetuated as they had for millennia. As with most small agrarian village societies, labor product was not exclusively subsistence focused. Traded commodities and goods acquired through other means including war resulted in varying levels of wealth and social status (Hyden 1980:38).

The stratification of the peasantry stands in direct opposition to the Eurocentric concept that African indigenous peoples were simple "savages" with little concept of commerce or class. Despite having little to no interaction with the capitalistic global market, the agrarian or peasant class operated within established hierarchies and articulation of goods. The colonial powers that attempted to establish control had no concept of pre-capitalist or pre-socialist societies. As a result of pride in traditional lifeways, colonial mismanagement, and modern underdevelopment the conditions within Tanzania remain ideal for this unique peasant social formation to continue even today (Hyden 1980).

The main causal factor that has prevented development within Tanzania is also, ironically, its main strength, the common agricultural worker. Following the Industrial Revolution and the introduction of the modernized social bias it ushered in, Western Europe continued to push further away from the pre-capitalistic and pre-socialistic societal models that once dictated life for all. A new cultural superstructure had distanced the nineteenth and twentieth century European from humanity's connection with the natural world and the symbiotic relationships that result within a cooperative community. As capital and profit became the domineering objective, the ability to empathize with cultures whose main concern was survival became ever more difficult. Man had achieved some control of his own environment and could manipulate parts of it to his will within the industrialized and agricultural worlds, social capital was superseded by production ability, and as a result, interactions with pre-industrialized societies would suffer in the race for resources (Hyden 1980).

The WaSwahili as a cultural entity shared a common language, mixed belief system grounded in Islam and various natural "magics", and a generally literate population well acquainted with diplomatic efforts, both peaceful and violent (Glassman 1995). Well established trade connections and maritime technologies had perpetuated for millennia before the Europeans began their systematic occupation of the continent. Slaves and ivory had long stood as the means to wealth and power until new goods from *Ulaya* (Europe) and abolitionist attitudes shifted the power paradigm within the Triangle Trade as demand rose for soft ivories and fine goods in Western market places (Glassman 1995: 29). The Industrial Revolution created an insatiable need for the agricultural products including coconut and sesame oils produced by the fertile soils of East Africa. The industrialization of the West also provided the means of recompense in the form of mass-produced cotton textiles in direct competition with the fabric imports of the

WaSwahili's traditional trade partner, India (Glassman 1995:29). As a result of strong international trade connections, access to both natural and human resources, and lack of centralized control, East African was targeted and attacked by industrialized colonial powers desperate for resources and intoxicated by their own brand of evangelical Christianity grounded in Darwinism and funded by blood money. Misunderstood and abused, Tanzania clings to her traditional ways while desperately trying to catch up from decades of forced servitude as the scars of colonialism hinder its development.

Life in Tanzania, as in much of the developing world, centers around familial responsibility, social interaction, and the maintenance of communal relationships (Hyden 1980). As stated by Goran Hyden, "In the eyes of people of pre-modern societies, we are socially handicapped. We are not sensitive and responsive to the same full range of human values as they are" (Hyden 1980:2). As a result, as it is today, the colonial powers could not incorporate the indigenous lifeways into their social understanding. All the racist undertones and social superiority complexes aside, Western Europeans were unable to understand an economic entity, however autonomous, outside of the familiar capitalist/socialist paradigm. Their modernized perspective valued production growth most of all and while the modern economy of Tanzania may participate in the global market, its development is dependent on the lifeways of the pre-modern peasant class (Hyden 1980).

The peasant class within Tanzania holds familial survival as the optimum objective and views wholesale participation in larger developing markets as a significant threat to their greatly autonomous lifeway. As long as they are able to produce enough agricultural product to care for their familial unit and have enough to sell or barter for other commodities, the peasant remains independent of the greater economic dynamic. They are not subject to variations in market price

nor are they beholden to the ebb and flow of market demand (Hyden 1980).

This localized focus served to exacerbate European prejudice as it served as skewed proof that the peasant, even in collectives, were incapable of independent thought, especially that of a rebellious nature (Glassman 1995). Instead of recognizing the various insurgencies as the result of revolutionary thought, the Europeans firmly believed it was the simple-minded reaction by the peasant population to a perceived threat to their "traditional", in this instance a derogatory term, lifeways and culture (Glassman 1995:9). The peasant population was seen as a primal, reactionary populace, who could only be spurred to action as a result of the provocation by the social elites or colonial bourgeois, whom the peasants who were forced to view "as their betters" (Glassman 1995:9). As stated by a German, the indigenous population "display the greatest resemblance to our own thick-headed, narrow minded peasants" (Glassman 1995:9).

In addition, before colonial interference, tribal lands were free for the taking and the only stipulation to land ownership was continued support and participation within the localized community. Economic development and introduction into the larger world markets was a risk the peasant class was generally unwilling to take as it sacrificed independent control for trickle down profits that would unlikely result in any social mobility. Peasant culture could incorporate barter and the marketing of surplus, but it did not overwhelm the social personality of the people as had taken place in more modern, industrialized areas. The symbiotic and autonomous relationship the peasant had established with the natural world was not understood by the colonial powers and this disconnect in combination with brutality fueled by racist mantras proved their downfall (Hyden 1980).

Having worked the unforgiving laterite soil and guarded their crops from all forms of destruction for generations, indigenous Tanzanians had adapted an effective means of utilizing

what resources the land offered successfully within their pre-modern society. The ability to adapt to the harsh tropical environs and the knowledge garnered through centuries of agricultural trial and error were greatly overlooked by the invading German forces (Hyden 1980). Once the colonial government was established and began regulating all aspects of peasant life, the failure to utilize the indigenous knowledge base resulted in ever accelerating failure. As German expansion continued, newcomers saw the failing colonial ventures and placed the blame on the "lazy" and "uncultured" indigenous labor force (Hyden 1980).

In the tragic manner typical of so many colonialist ventures, German forces introduced disease previously unencountered by both the indigenous peoples and their livestock. Smallpox devastated the Tanganyikan populace while the newly introduced rinderpest decimated local Sanga cattle herds. Both plagues resulted in the disruption of the delicate relationship long established between the peasants and their natural environment and only further fueled the German belief that the indigenous people were incapable of sustaining any form of productive lifestyle (Hyden 1980). The 1890s were marked by a mass exodus of indigenous peoples from previously productive grazing lands, and it is reported that over 150,000 people were killed by smallpox and dysentery in 1898 alone (Hyden 1980:40).

Initially German forces swept in from the coastline utilizing military troops as the primary colonizing force. German colonial forces ravaged villages in the name of food procurement for their troops without concern about whether enough remained to ensure survival of the villagers. These man-made inputs were only further exacerbated by natural disasters in the form of droughts and locust hordes that destroyed what little agricultural product remained. The Germans brought suffering of an unknown magnitude in the name of cultural superiority (Hyden 1980).

Incorporating the sweeping influence of Social Darwinism at the beginning of the twentieth century, German colonial powers sought to "educate" the local populace and established their objectives as such:

> . . . . making the land, its treasures, the flora, the fauna, and most importantly, the people useful to the economy of the colonized country, and the colonizers (will be) obliged to share, in return, their higher culture, their moral concepts and their better methods (Schubert 2011:412).

An example of German colonial "education" efforts included the establishment of government schools in Dar es Salaam and Tanga in the early 1890s. Both well-established indigenous communities were predominately Muslim and communicated primarily in KiSwahili. As a result, the instruction in basic trades and labor positions was criticized in Germany as state-sanctioned support of Islam in direct opposition of the Christian values and cultural missionary work of the German East African Government.

In an attempt to effectively "civilize" the indigenous labor force, the German Colonial Society proposed that instruction in the German language be mandatory and that government funding be diverted to the institutions which followed colonial doctrine. In 1900, during the Reichstag East African budget debates, an amendment by the Center Party required civil servant recruits to be Christian; Muslims could only attend schools along the coastline, and mission trainees should be placed as academic instructors within the inland school to accelerate religious indoctrination (Austen 1968:69).

Not only through subjugation of agricultural and economic activities but also through oppression of indigenous culture and religion, the German East African government was providing the necessary impetus for the peasant population, the very group they underestimated, to organize an insurgency. The citizens of modern Tanzania refused to ignore their history in favor of colonial doctrine, and this decision was only reinforced by the brutal methodology of

colonial governance. As a direct result of their failure to understand the mindset and history of the majority group within Tanganyika, German colonial forces faced numerous uprisings. One of the more infamous rebellions took place in the coastal city of Pangani and involved three major groups struggling for control (Glassman 1995).

III. The German Incursion and WaSwahili Resistance

> However, it is important to bear in mind that Emil von Zelewski and his group acted with an amazing degree of arrogance and contempt. They desecrated the mosque when Zelewski forced his way into the prayer room, wearing boots and accompanied by his hunting dogs. German marines terrorized people in the town and surroundings, seizing women at will and raping them. When they were questioned about their behaviour they would reply: 'This is the way things are done in Europe (Perras 2004:129).

The disrespectful and brash attitude of Emil von Zelewiski, a German East Africa employee, epitomizes the colonial arrogance that fueled insurrection by the WaSwahili, moving even the privileged elites to action (Glassman 1995:2). His claim to the Omani Arab governor that he would seize control as the Sultan's most influential foreign representative proved false, as he was expelled from Pangani, and the Arab overlords were displaced from their social strongholds (Glassman 1995:2). This organized resistance stands in direct defiance of the German assumption that the indigenous peoples were incapable of promoting any form of political economic interplay outside of village-based sustenance farming (Perras 2004). The Pangani revolt involved individuals from all social strata including WaSwahili nobles, the Zanzibarian Sultanate, and even the slaves charged with manning trade caravans or working the prolific sugar plantations (Perras 2004). Previous works discussing the uprising have identified the main causal factor as the volatile nature of the trade networks at the time of foreign interference. Swahili nobles and the Sultanate in Zanzibar both exercised power along coastal Tanzania and relied heavily upon the international trade that utilized their respective ports.

While conducting ethnographic research in Pangani, a local expert shipbuilder, or *mfundi*, was discussing East African port cities that shared similar maritime heritage and vessel construction traditions. Having lived in Pangani the entirety of his life, Khalifa Mohamed was very familiar with not only the local history, but that of nearby port cities. Mfundi Mohamed was ninety-two years of age when the research team interviewed him and proved a knowledgeable source on local construction histories. *Mfundi* Mohamed assisted in making research connections regarding resistance during his interview by discussing the revolt within Bagamoyo and the Pangani uprising, as he remembered his father telling him as a child.

While describing the local reaction to the German occupation, *Mfundi* Mohamed spoke of a local rebel that fought valiantly against the occupiers, *Bwana* (respectful KiSwahili title, akin to the English "sir") Bushiri. According to *Mfundi* Mohamed, *Bwana* Bushiri launched his attacks upon the Germans from the very hills that stood opposite his home, and he spoke of the insurgent's residence, execution, and grave. Bushiri's grave and residence remain, though, in various states of disrepair. Bushiri Bin Salim was both a caravan merchant and a local plantation owner among the rich hills of Pangani (Glassman 1995:7). He rose to local influence as a result of his desire to reseat Arab power within the Pangani economy after the insurrection by the common townsfolk. His status as a social elite resulted in his eventual exile to Bagamoyo, where he continued his armed resistance against the Germans for over half a year, until his eventual hanging after returning to Pangani in 1889 (Glassman 1995:7).

Mfundi Mohamed also stated his father remembered that during the First World War a large German military vessel entered the mouth of the Pangani Delta and eventually sank, thus illustrating the true scale of local resistance movements and the resulting counterinsurgency efforts within an area of interest. Few of the other sites within the Tanga region experienced the

same colonial exposure because of isolation and lack of arable land. Pangani stands in stark contrast to the small, peasant villages of the Tanga region as it was an established trading city, the gem of the WaSwahili, whose natural resources were much desired by the German imperial forces (Glassman 1995).

The German occupiers controlled the massive sisal plantations in Pangani and attempted to use colonial settlers to maximize the agricultural potential of the fertile land in the Bagamoyo district, near Mount Kilimanjaro. Utilizing both settler and plantation style agricultural production, the Germans also wanted to use the peasant labor force as both a labor supply for development projects and as a means of cash crop production. Forcing the indigenous population to cultivate easily marketable cash crops, the Germans demonstrated their disregard for their subject's survival and effectively destroyed the pre-colonial economic structure that had thrived for centuries (Hyden 1985).

These abuses were further exacerbated by the German colonial government's recruitment of local chiefs and elites to supervise development and agricultural efforts, thereby exacerbating long standing divisions between classes. By destroying the natural balance of pre-colonial peasant economics, introducing disease and famine, and abusing local populations under military guise, the German occupation forces faced the inevitability of insurgency. Beyond even the abuses to person, religion, and culture, the colonial forces subjugated isolated peasant communities to the destructive influences of the Western capitalist market and threatened the sustainability of their very livelihoods. Such measures created a ripple effect that has slowed national development even today (Hyden 1980:41).

The attempts by the German colonizers to force pre-capitalist peasant agrarian communities to meet the demands of their capitalist markets and the resulting pushback were not limited to

Tanganyika. Even in Kenya where the production demands were far more effectively enforced, and the pre-colonial production modes destroyed, the imperial forces still encountered significant resistance (Hyden:1980:42). While the German occupation forced the peasant economies to adjust, the rebellions in the form of both the Pangani revolt and later uprisings such as seen with the Mau Mau effectively show that the previous lifeways had not been destroyed. Despite having been under the yoke of colonial control for generations, the Mau Mau launched attacks against government forces from the shelter of Mt. Kenya, resisting Britain's attempts to crush their collective identity.

The pre-colonial mode of production was shed out of necessity into the independent peasant means of production that has allowed the isolated population groups that make up the modern countries of Tanzania and Kenya to perpetuate. As labeled by Hyden, the peasant communities developed a form of agrarian production that is largely pre-capitalistic but different from the untouched, unworldly pre-colonial agrarian form (Hyden 1980:42). The German attempt to establish hegemony within the East African sphere as part of the greater colonial land grab throughout the continent proved little more than destructive oppression that encouraged both passive and active resistance.

In the interest of conciseness, examples of rebellion and physicalized resistance are limited to the Tanga Region and the port city of Pangani as they are the focus of the field research. This does not, however, mean that WaSwahili opposition was isolated to these two areas. The clumsy attempts by German imperial forces to establish colonial possessions within East Africa caused widespread change in both popular consciousness and the general destruction of formalized WaSwahili civil authority (Glassman 1995). The forced introduction of the coastal East African population to the demands of international trade at the behest of European powers in search of

markets and resources shook the foundations of WaSwahili community structure in the nineteenth century (Glassman 1995). While traditional foundations and lifeways survived, the results of market penetration forced the WaSwahili to redefine their role locally and internationally (Glassman 1995). The resulting rebellions within Pangani and Tanga epitomize the greater response to imperialistic action within East Africa and provide further evidence of the desire to protect and perpetuate traditional lifeways in the face of organized, foreign attack (Glassman 1995).

The introduction of the global marketplace disrupted the social fabric of the WaSwahili substantially. Originally consisting of competing chiefdoms, the introduction of non-secular leadership and coastal trade formed a new power hierarchy. Well acquainted with the Hindu tradesman and Arabic merchants who participated in the Triangle Trade for centuries, the introduction of a new form of *bwana* further complicated the power struggle. Originally a KiSwahili term describing a man of influence or worthy of respect, it became associated with foreign dignitaries or colonial men of wealth. Imported goods and their acquisition became a qualifier for social standing and influence within local communities (Glassman 1995: 48). Even those far removed from the coast and its corresponding trading activities knew that the power paradigm had changed as a result of European presence (Glassman 1995:48).

The Indian tradesmen who had long plied the waters of the Indian Ocean, intermarried with coastal women, and established seasonal homes along the East African coast were also subject to hierarchy shift. The highest socio-economic standing was reserved for the white Europeans, whose access to firearms allowed unprecedented sway and physical control. A Zigua chief details the new “power pyramid” within the coastal trade dynamic in a conversation with a French missionary in 1880;

> In the first place, in the order of *bwanas*…, comes the white man. He has second rank after God and far surpasses all others. After the white man comes the Banyan (Hindu merchant). Next is the Muslim Indian (note religious specificity). In fourth and last place is the Arab, who does nothing but cheat men and steal women. He is not capable of doing anything. Everything he has comes from *Ulaya* (Europe). He does not know how to make rifles, nor cloth, nor gun-powder, nor anything of value. Therefore, we neither like nor esteem him. So that is the order of the "*bwanas*. (Glassman 1995:48)

As Glassman makes note, the general aversion to some populations cannot be considered typical but he effectively establishes the standing of each group within the political economy (Glassman 1995:48). The Arabs who controlled the slave trade and the island of Zanzibar did not enjoy the material wealth and trade connections of their Indian counterparts (Glassman 1995:48). The men from Hindustan controlled the coastal trade networks and "farmed the customs" of the coastal markets (Glassman 1995:48). At the top of the social ladder, the Europeans and their seemingly endless funding controlled all involved through selective access to his desired goods, primarily firearms (Glassman 1995:48). The indigenous populace in the coastal towns, including Pangani, expressed their anger towards the social hierarchy and lack of agency through riots and, at times, violent insurrection.

Figure 5: Author discussing German occupation with a village elder in Saadani village, Tanga Region (Photograph by Ian Harrison)

Active resistance to German occupation occurred in numerous areas along the Swahili coast, including all three major research locales: Pangani, Tanga, and Saadani. While the revolts within Pangani and Bagamoyo have received the greatest share of academic attention, Tanga suffered greatly as well when most of the town was demolished by naval shelling and two amphibious landings by German marines as a result of active unrest occurring concurrently with the insurgency in Pangani (Glassman 1995:220-221). The violence that broke out in Pangani was partially a result of the desire to possess equivalent firepower as resistance to the Germans' attempts to restrict the ammunition trade along the caravan routes (Glassman 1995:220-221). A shipment of gunpowder anchored in the Pangani River before returning to Zanzibar and was set upon by local warriors (Glassman 1995:220-221). The German guards were taken hostage, the powder dispersed amongst the insurgents, and the German East Africa Company colors hauled down and destroyed (Glassman 1995:220-221). The insurrection in Saadani enjoyed far greater

success under the supervision of *Bwana* Heri, who, despite living in the German controlled town, was able to sustain an effective insurgency long after the demise of Bushiri (Glassman 1995:8). The Germans had even offered him honorable terms to cease and desist, in stark contrast to the fate of Bushiri, whose pride even continued on the gallows as he offered to serve as governor of the entire coastline (Glassman 1995:8).

While indigenous opposition to German occupation can be seen in many forms, the violent resistance of the insurgents along the northern Tanzanian coast demonstrates the lengths the subjugated populations were willing to go in order to resist all forms of colonial influence. The willingness to commit to armed opposition supports the belief that rebellious attitudes extended into all forms of material culture and serves to support the hypothesis that the continuation of traditional ship construction styles during and after occupation could be considered a form of passive resistance as supported by the ethnographic data discussed in the following chapters. The indigenous peoples' awareness that their actions would result in greater colonial pushback indicates their willingness to fight and die to protect traditional lifeways and social structures.

The violent insurrections were not initially aimed at the destruction of foreign influence or the German East Africa Company. Before the arrival of the Imperial navy in 1889, the uprisings were the result of long-standing hostility amongst Swahili social classes. When the German government under Bismarck decided to dedicate military forces Tanganyika in late 1888, the dynamic within the Tanga Region, and throughout East Africa, was altered forever. After the military vessels and the iconic imperial tool of occupation, the Maxim machine gun, approached East African shores, the focus of the insurgency became resistance to colonial influence in all its forms (Glassman 1995: 11).

IV. East African Maritime Culture and the WaAmu: A Case Study

By discussing the collective experiences of the Tanzanian people under both German and British rule it becomes glaringly obvious how truly dominated the historical record is by European authorship. Only recently have Tanzanian scholars begun to redress the distinct lack of indigenous input within the historical record of their homeland. Previously, most Tanzanian accounts were written in a third person analytic manner, after colonial occupation had long since ended. In a manner similar to Africa many regions worldwide, communities within East Africa have long relied upon oral tradition as the primary means of narrative, and thus little if any historical written record exists detailing past lifeways.

An example of this is the concept of the West African *griot*, a community member who encompasses all forms of oral tradition as historians, storytellers, teachers, and even diplomats. In a similar manner as that of the *wafundi,* the role of the *griot* is often passed down through familial lineage (James 2012). These individuals act as a living historical record and are responsible for the education of future generations (James 2012). The active collection of personal and familial narratives is essential to establishing a primary source account of localized histories.

Primary source accounts were kept alive by the relatives of those who had experienced the imperial period and rarely recorded in any other medium. The dilution of personal narrative by generational gaps as well as the distinct lack of written record allowed European academia to determine the international understanding of East Africa and Tanzania in particular (Austen 1968). To best illustrate the nature of the colonial period within northern Tanzania, the existing data must not only be augmented with ethnographic research but also considered in the greater context of the colonial metropole and its interactions internationally (Austen 1968:2).

Once again, *Mfundi* Mohamed played an active role in assisting with research direction

during his interview in Pangani. He distinctly remembered the British colonial occupation and remembered a great deal of what he had heard as a child about the German forces. *Mfundi* Mohamed began his maritime career learning from traditional masters, working his way to master shipbuilder, and even built fiberglass speedboats for colonial customers. He specifically mentioned WaAmu as worthy of further investigation since it would prove invaluable for comparative analysis. Understandably, he was biased in his evaluation of other local craftsmen and the lack of interest demonstrated by the younger generations in perpetuating the proud tradition of indigenous ship construction. While he dismissed the builders found in the smaller coastal villages such as Tongoni and the city of Tanga, he professed the archipelago of Lamu still adhered to the true Swahili tradition of vessel construction.

The archipelago of Lamu in northern Kenya was the target of numerous countries' colonial desire and, despite harboring an highly diverse population ethnographically, remained united against foreign occupation (Romero 2017). The longest continually occupied town in Kenya, Lamu was officially established in the late fourteenth century (Romero 2017:16-17). First encountered by the Portuguese in the early sixteenth century, the WaAmu faced opposition from not only colonial powers pursuing hegemony, but also attacks from northern neighbors including Somalia, spurring the need to seek international assistance via their trade networks (Romero 2017:16-17).

The WaAmu eventually stopped paying protection money to the Portuguese after Ottoman Turks began to raid and occupy the archipelago (Romero 2017). They shed their extorters with the aid of their Omani allies late that same century, entering a "golden age" for the next two centuries as a protectorate (Romero 1997:16-17). Little trace of the Portuguese besides half-caste children remained within Lamu. The Dutch attempted to become established on the

northern end of the coast by approaching Pate Island, the dominant isle within the archipelago at the time (Romero 1997:19). The difficult waters and strong prevailing winds hampered their efforts and the area remained unmolested by Western powers for the majority of the eighteenth century, though trade once again facilitated international relations (Romero 1997:19).

The French and Americans began to trade with the northern east African coast in the nineteenth century, though with far differing aspirations. Of desire were the exotic animal skins, ivory, and other animal products sourced from the hinterland. The Americans found a receptive market for their cloth, known as "Amerikani" cotton, and competed with the long-standing Indian textile imports (Romero 1997:19). The French, like their Portuguese predecessors, wished to establish hegemony in Mombasa and the isle of Pate from the late eighteenth to the mid-nineteenth centuries (Romero 1997:19). The Omani intercessors expanded their control in the same districts, and even into Zanzibar, placing the Mazrui family as a militant form of diplomatic appointee (Romero 1997:19).

Volatile relations continued between the people of Lamu and the neighboring isle of Pate into the eighteenth century. Though the two groups cooperated during periods of foreign attack, a complicated series of failed intermarriages and wars marred the relationship (Romero 1997:21). During the Battle of Shela in 1813-1814, both sides employed outside assistance in the struggle for control. As expected, the Omani ruler assisted the WaAmu, but in an unprecedented move the Sultan of Pate attempted to elicit aid from the British at Bombay. Though rejected, the attempt changed the dynamic of the archipelago as it sparked the British interest to push beyond the Indian subcontinent into Eastern Africa (Romero 1997:21).

After being propositioned by the ruler of the isle of Pate for military aid, British officials in Bombay became interested in the possibilities of expanded trade and import markets (Romero

1997:24). British military officers sailed to reconnoiter the markets available and took note of the "rivalry of two cousins" as existed between Lamu and Pate (Romero 1997:25). Little did those appointed to investigate the East African coastline know how truly unsettled relations were between Lamu, Pate, Siyu, and the Mazrui clan in Mombasa (Romero 1997:25). A struggle for hegemony and long-standing family rivalries provided the context necessary for colonial incursion.

The Battle of Shela, waged only mere kilometers from Lamu, was the materialization of the contention between the WaAmu, WaPate, and Mazrui of Mombasa (Pouwels 1991:363). Centered around the dispute over the next sultan of Pate, the battle is of special interest because of the extensive use of the traditional Swahili vessel known as the *mtepe*, a close hulled indigenous craft built to effectively make use of the monsoon winds and navigate the treacherous coastal waters common to the area (Zanzibarian reproduction seen in Figure 9) (Romero 1997:28). Both sides organized considerable naval forces in preparation for battle with a maritime force numbering close to if not more than fifty vessels (Romero 1997:28).

Preparations for the conflict continued throughout 1812, with small skirmishes and assaults occurring continuously. The active attempt to invade Lamu by the combined forces of Pate and the Mazrui of Mombasa did not begin until 1813 (Romero 1997). An instance demonstrating the level of commitment to Lamu independence is seen in the actions of Bwana Zaidi, who encircled his entire family in gunpowder, threatening that they would "rather burn up together than be taken prisoners by the Mombasa and Pate people. We are going to win, or we are going to die" (Romero 1997:28).

The war itself was the culmination of layers of key political, religious, social, and economic forces that had been amassing along the East African coastline for well over a century

(Pouwells 1991:365). The attackers enjoyed a significant numerical and weaponry advantage as the Mazrui of Mombasa were joined by the neighboring Wapate, Wagiriama, and Wakitikuu, making the victory that much more impressive and integral to the WaAmu narrative (Pouwells 1991:365). The most cited primary account of the battle itself is found within the narrative of the *Chronicle of Lamu*, which only recently has received academic recognition as the poimt during which the opportunity for European abuses was made apparent in East Africa (Romero 1997:27).

Figure 6: The Northern East African Coastline (Biersteker et al., 1995:ix)

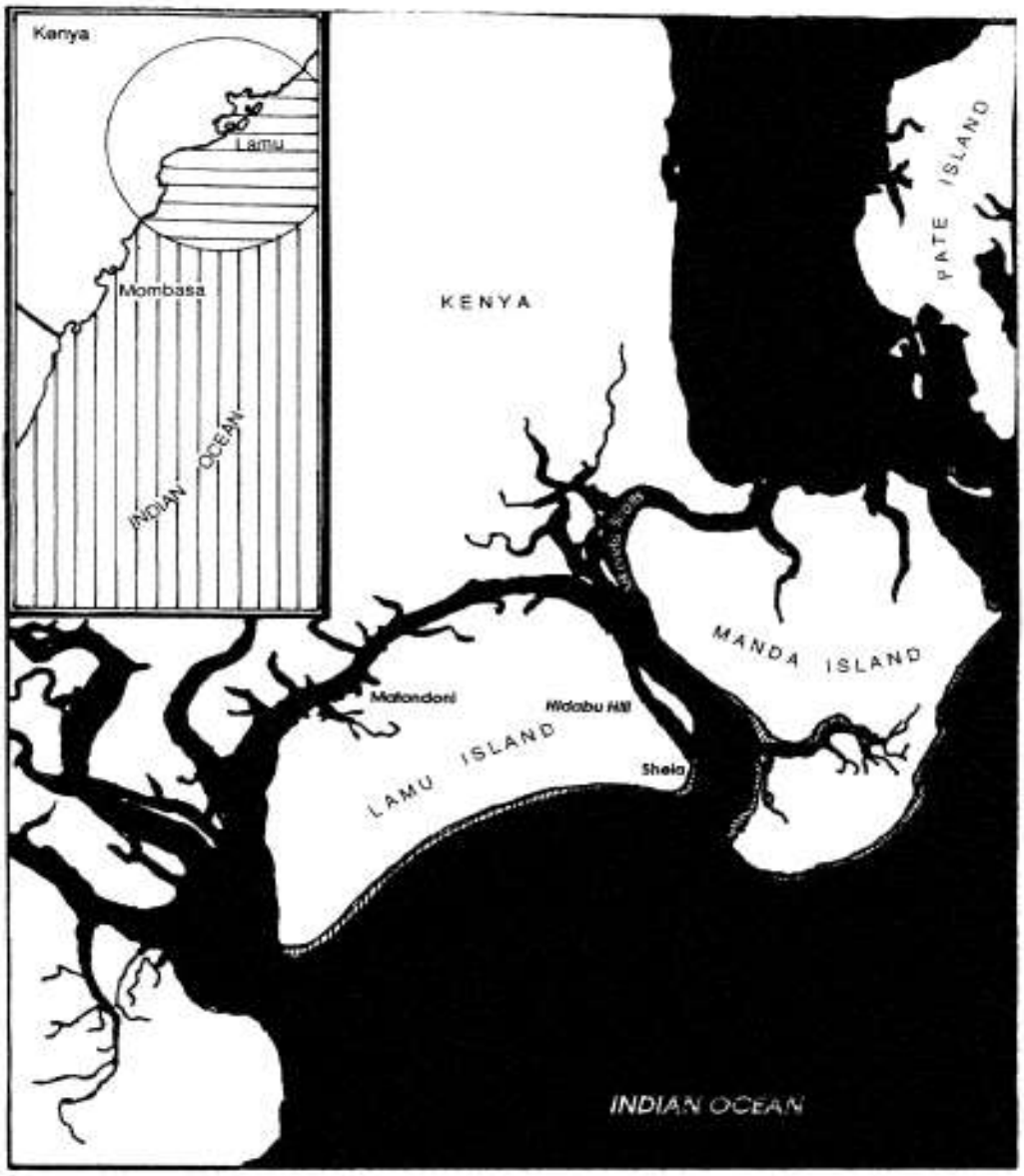

Figure 7: The Eastern Coast of Kenya and Lamu Archipelago (Biersteker et al., 1995:xi)

Before the battle, the WaAmu were governed by a form of tribal council, whose membership was dependent upon wealth, social standing, and the family unit size. Within the republic, each ward was represented by an elder bearing the title *Mwenye Mui* (Pouwells 1991:372). During the conflict, elder Bwana Zahidi Ngumi consolidated power because of his possession of a large "slave army", and both masters and slave fought together against the invading forces (Pouwells 1991:372-373). Leaders at all levels had to be well versed in all forms of Islamic practice and law (*mila*), and though both contestants were Muslim, all invoked Allah for protection (Pouwells 1991:373). In accordance with a long tradition of social and religious exclusivity, God was invoked by Lamu elders to "pass judgement in their favor" (Pouwells 1991:374).

An especially interesting element of the religious preparations for battle was the use of religious leaders, *walimu* (teachers), to invoke magical forces in conjunction with their core Islamic beliefs to protect and strengthen their cause (Pouwells 1991:374). In fact, the *Pate Chronicles* attributes the Lamu victory to the invocation of magic in the form of a charm used by a shaman by the name of Mwenyi Shehi Ali who had "made a brass pot and a brass gong and buried them underground", effectively turning the tide of the invasion when the attacking forces "were driven back and utterly overcome" (Biersteker et al., 1995:64). The opposing forces in the form of the Mazrui of Mombasa attempted to elicit supernatural assistance as well by sacrificing a dog and chicken upon the beachhead, as recounted by Bwana Bakari in the *Pate Chronicles* (Biersteker et al., 1995:64). The "witchcraft was nullified" and the attackers "paralyzed" when the practitioners were shot down with matchlocks during the fighting near Hidabu Hill (Biersteker et al., 1995:46-67).

This unique blend of indigenous *dini ya asili* (natural religion or religion of nature)

carries over today into boat construction ceremonies before, during, and after completion, as discussed in further detail during the analysis chapter. Ceremonial sacrifice continues today, mostly in the rural villages, and, though not observed during conflict, the desired protective influence remains the same. This ritual was observed not only in the isolated tribes within the Tanga region, but also within the more devout Muslim areas in Stone Town, Zanzibar. The perpetuation of indigenous, nature-centric belief systems stands in direct opposition to the forced attempts by various foreign powers to discredit traditional forms of worship.

The primary sources regarding the Battle of Shela, also known as the Battle of Kuduhu, include the following as listed in a volume of *mashairi* (poetry) compiled by Ann Biersteker and Ibrahim Noor Shariff titled *Mashairi Ya Vita Vya Kuduhu: War Poetry in KiSwahili* (Poetry of the Battle of Kuduhu):

1. *The Lamu Chronicle*
2. Captain C. H. Stigand's edition of *The Pate Chronicle*
3. *The Kitab* (book) *al-Zunuj*
4. A manuscript history of the Mazrui family written by Sheikh al-Arnin bin AIy Mazrui
5. The journal of Captain Thomas Srnee, a British naval officer who visited the area in 1811
6. The reports of Charles Guillain, a French naval officer who visited the East African coast in the 1830's and 1840's
7. Accounts by Lt. Thomas Boteler and Captain W. F. W. Owen who surveyed the coast in the 1820's. (Biersteker et al., 1995:43-44).

The sheer amount of verse detailing the Battle of Shela illustrates the greater cultural impact of conflict within traditional Swahili society. Poetry in the Swahili form, while unique in cadence and style, shares a proud lineage with that of Arabic and Indian prose. All of these

societies use poetry as a means of historical narrative and a means to share stories of a communal past with new generations (Biersteker et al., 1995). The *Lamu Chronicles* remain one of the oldest “extant written prose narratives” known from within the archipelago (Biersteker et al., 1995:46). The difficulty alone in finding authentic KiSwahili prose from indigenous authors stems from the polluting influence of colonial occupation, which is especially disconcerting in consideration of the fact that the poetic form of expression, whether in Arabic or KiSwahili, composes the body of Lamu recorded history for centuries (Biersteker et al., 1995:46). The struggle to decipher unadulterated, first person narrative is best summarized in the above-mentioned text as such:

> All of the available pre-twentieth century prose narratives written in Kiswahili were directly or indirectly commissioned by European travelers, officials, or scholars. None of the claims of unavailable "official versions" of chronicles have been substantiated. The available pre-twentieth century narratives written in Kiswahili are *tenzi/ poetic narratives,* many of which are obviously allegorical (Biersteker et al., 1995:46)

Poetry and folklore have the same purpose in the desire to share a collective history or recount meaningful cultural aspects to the unfamiliar or uninitiated. The personal and historical narratives contained within poetic verse serve as the first person historical narrative essential to establishing context for ethnographic research. Using the tools of metaphor, simile, and even riddle, poetry engages the listener and demands even passive participation within the cultural context (Sackett 1964:143). Thus, it is worthwhile to establish historical grounding, and to consider the criticality of poetic expression to Swahili society, in order to discuss examples of primary narrative regarding the battle and gain insight into the Lamu perspective before colonial interference. While the history of the WaAmu and the greater archipelago is extensive and complex within its own right, the focus shall remain on outlining the indigenous perspective and the effect, if any, on culture and ostensibly cultural material, of colonial interaction and

occupation.

Poetry serves as a mnemonic device, making historical narrative or folklore easier to recall (Sackett 1964:145). A KiSwahili proverb, a teaching tool spanning centuries, states "*Ng'ano ni Nta Arobaini"* (Every story has countless versions or, more literally, types) (Biersteker et al., 1995:43). The poems offer a glimpse into the most critical aspect of an ethnography; the establishment and evolution of identity at individual, communal, societal, and international level while also redefining the perspective of others, in this instance a warring enemy (Biersteker et al., 1995:67).

Much like the ambiguities, simile, and metaphor utilized by folklore to capture interest and increase retention, the story of the Battle of Kuduhu (or Shela) stands out among numerous battles of the eighteenth and nineteenth centuries because of the redefinition of the actors, by both themselves and those they oppose (Sackett 1964). Poetry was a critical means of expression within numerous societies internationally, including East Africa, and remains so today. Local politicians still hire poets to extol their virtue through written prose while ensuring the defamation of their opponents in the same breath (Biersteker et al., 1995). To best gauge the temperament and societal outlook of a given community, it is essential to refer to the popularized means of expression as well as the laws which dictate appropriate behavior. Poetry provided the platform for information dissemination in Lamu and describes sentiment towards outside influence and the pride inherent to their traditional lifestyles, thus providing the most effective means to decipher the initial WaAmu reaction to the dawn of the colonial period (Bierstreker et al., 1995).

Figure 8: Large outrigger with scrollwork near Lamu Town waterfront
(Photograph by Patrick Woodruff)

In modern texts analyzing the wars fought within the archipelago both before and after the presence of the British in Kenya, a common theme is apparent in that the WaAmu were fighting not only to protect their lives and territory, but more importantly their way of life (Pouwels 1991:374). Though similar to neighboring Pate and even the coastal city of Mombosa, the WaAmu considered themselves the purest form of WaSwahili, aligned politically with the Omani sultan, and refused to be subjected to the will of another people, a sentiment critical to the colonial conversation (Pouwels 1991:374-375). Bwana Zahidi Ngumi, as detailed within the *Lamu Chronicles*, issued the following poetic response to the possibility of invasion by the

Makuri and Pate peoples during a meeting of the Lamu elders;

Tuna kori za aswili tusizoyuwa mipaka
Since our origins we have had gardens without boundaries

Hulima sute wajoli tukivuniya shirika
We all work as fellow slaves sharing the bounty.

Kuna nokowa jamali utashiye kutubuka
There now is an elegant slave driver wanting to bring us grief.

Kunyamaa tumetoka mwatupa shauri gani?
Having spurned mute acquiescence what advice do ye give?

Mula shoko[w]a la Pemba pa taka kul[l]a
The devourer of forced labor at Pemba here too he wants to feed

Uyao/kaya kutuwambawamba na kutwingish/za madhila
Coming to lord over us and make us low

(Excerpt from the *Lamu Chronicles*) (Pouwels 1991:374-375).

Bwana Ngumi states in the recorded *mshairi* (poem) that he fears the Nabahani sultans of Pate and Mazrui (Mombasa) will tear the WaAmu down from their proud position within the archipelago and, as a result, steal away their independence, possibly even forcing them into bondage. The mention of Pemba, neighbor to the large slave markets of Zanzibar, reinforces the concept of being subjugated to the will of another. The slave driver (Sultan Ahmad Shaykh of Pate) is referred to as *nokowa,* which in KiSwahili signifies a second in command, or "straw boss" for the actual master. Thus, Sultan Shaykh is in fact portrayed as a slave to Ahmad B. Muhammad Mazrui of Mombasa and their foreign ties (Pouwels 1991:374-375).

Bwana Ngumi's prose elicits a response from a fellow town elder worthy of inclusion. Ali Ahmad al-Asafiyya responds in turn as written in the *Lamu Chronicles*:

Lakutenda situuze situuze lakutenda
What to do you need not ask us you need not ask us what to do

Metufunda mwanamizi mwanamizi metufunda

He would treat us like hermit crabs like hermit crabs he would treat us

Kuwa punda tuyizize tuyizize kuwa punda
We decline to be pack asses to be pack asses we decline

Kwandika tapo tutenda hilo halipatikani
For us to be harnessed with pack-bags and driven to work that is just what he will not achieve

(Excerpt from the *Lamu Chronicles*) (Pouwels 1991:375).

The direct references to the use as "pack-asses" or beasts of burden, as well as that of the hermit crab, bearing its load upon its back, reiterate the general concern and disdain for the potential for subjugation or forced labor. The fiercely independent WaAmu had successfully driven off attacks in the past (including an attack in 1711, causing significant confusion whether to refer to the Battle as that of Shela, which is more appropriate for the earlier fight, or that of the Battle of Kuduhu, referring to the nineteenth century invasion), and they fiercely defended their territory and lifeways. (Biersteker 1995:66). A final response to both narratives is offered by a third town elder, Muhammad Yusuf al-Lamu, as follows;

Tukiriziye hathiri watumwa na waungwana
That to which we agree both slaves and freeborn is plain

(Excerpt from the *Lamu Chronicles*) (Pouwels 1991:375)

Al-Lamu summarizes the councils concerns with the use of both the terms "slave" and "free-born", demonstrating the fear of loss of position and general "debasement" of the WaAmu on their own land (Pouwels 1991:375). While their potential subjugation to bondage is unclear, the forced labor of the WaAmu under the Mazrui in the form of a production work force would likely have been guaranteed (Pouwels 1991:375). The battle stands out among the numerous skirmishes within the region as it is an "almost prototypical nineteenth and twentieth century story of a successful local/nationalist struggle against foreign rule" (Biersteker et al., 1995:67).

Poems use literary devices to emphasize attitudes and beliefs often overlooked or lost in simple narrative (Biersteker et al., 1995:67). In numerous Indian Ocean basin cultures, including that of the WaSwahili, poetry is esteemed as the ultimate form of cultural and personal expression (Biersteker et al., 1995:67).

The town elders were expressing the general WaLamu opposition to foreign occupation and oversight. This sentiment of independence and the fierce protection of traditional lifeways carries through the centuries and is shown in the perpetuation of archaic but culturally significant crafts, such as that of traditional vessel construction.

Figure 9: Reproduction of a traditional *Mtepe* as used by the WaAmu, Zanzibar House of Wonders, Stone Town (Photograph by the author)

Figure 10: Figurehead with scrollwork of a reproduction *Mtepe* as used by the WaAmu, Zanzibar House of Wonders, Stone Town (Photograph by the author)

Proudly displaying the influences and intermarriages resulting from centuries of cultural and commercial exchange, Lamu retains much of its identity formed when the monsoon trade dominated coastal life. The history of the maritime communities within the city provide insight into the maritime lifeways that once flourished along the Swahili coast, both before and during colonial occupation. Most importantly, the unified front formed against British incursion is indicative of indigenous attitudes towards foreign interference in East African maritime communities (Romero 1997).

In consideration of the lack of academic analysis of maritime communities in the Tanga region, a case study of the WaAmu allows for the establishment of a comparative reference and

facilitates inference regarding the archaeological record. Greater understanding of the Indian Ocean Basin trade networks as the macrocosm within which the Tanga region exsists facilitates the establishment of greater trends in vessel design and construction, thus allowing for more accurate conclusion concerning possible colonial influences. The WaAmu are an important case study due to their cultural resilience and relative geographical isolation. While all of the coastal areas bordering the Indian Ocean experience seasonal variance in isolation due to monsoon flooding and sea conditions, the WaAmu allow for greater definition of the Swahili as a cultural group and sea going entity without the overriding influence of the more landlocked villages in question (Prins 1965). Through study of the Lamu maritime landscape, it is possible to gain a greater understanding of East African coastal lifeways and be better prepared to analyze ethnographic data collected within other port towns.

Living on an archipelago, the WaAmu rely on the ocean to provide and protect. As with many East African coastal cities, they historically participated in the long-standing Triangle Trade within the Indian Ocean Basin. The resulting cultural exchange formed their identity and history in a manner similar to that seen in Zanzibar. Foreign influences are obvious and prevalent: carved teak doors, Sufi mosques, Arabic archways, and the cosmopolitan feel of a community home to generations of intermarriages (Romero 1997).

The WaAmu welcomed the citizens and cultural nuance of their trade partners but resisted the forceful intercedence of European colonial powers. For the same reasons shared by many of those subject to foreign invasion, the people of Lamu resented the disrespect demonstrated by the Europeans, and, despite religious or cultural differences, its people remained united in their opposition (Romero 1997). The WaAmu share a strong maritime history and identity and can be used as both an effective means of comparison and as a tool for

interpretation, especially in consideration of vessel construction and usage techniques.

The birth of the KiSwahili language itself is a product of maritime interaction and trade. Even before Islam became prevalent along the southern coast of what is now modern-day Kenya, a new Bantu dialect emerged. The KiSwahili language differed from anything spoken by the Swhaili peoples' northern neighbors and is heavily laden with Hindi, Farsi, Arabic and other foreign tongues. To bolster the concept that KiSwahili is direct evidence of pre-Islam trade networks, archaeologist Mark Horton uses the *Periplus of the Erythaenan Sea*, written in the first century C.E., as historical evidence (Romero 1997:2).

Because it was created as a guide to the "coasts of the Indian Ocean", Horton surmises it was likely written by a "trader or perhaps a shipmaster" familiar with the Triangle Trade (Romero 1997:2). The text describes how the trade in the first century centered around the coastal peoples of Rhapta, "probably in the area of Lamu", using small, handmade craft to sail to the Red Sea (Romero 1997:2). They would bring items they had received in trade from the mainland such as ivory, elephant teeth, crystals, and skins to the Indian Ocean trading centers (Romero 1997:2). The goods delivered to the Red Sea trade ports from Lamu and the neighboring coastline drew traders from around the Indian Ocean Basin and resulted in their sailing directly to northern Kenya and the coastal islands (Romero 1997:2). The trade seasons were dictated by the annual monsoon seasons and eventually, according to Horton, trade "fairs" hosted travelers from November to March (Romero 1997:2).

Because of the length and arduous nature of the journey, traders from the Red Sea, Hadramaut, the Persian Gulf, and India would stay for the duration of the trade season (Romero 1997:3). Sexual liaisons between foreign sailors and indigenous wives resulted in a unique blending of ethnic backgrounds in Lamu and its surrounding coastal communities. This unique

cultural blending resulted in the amorphous sub-culture known as the WaSwahili.

While their anthropological definition is still under debate today, it's widely accepted that the Swahili people have a strong, long standing maritime culture and are generally responsible for the inclusion of many languages within KiSwahili as a direct result of trade interactions (Romero 1997:3). Romero cites G.S.P Freeman-Grenville as stating that KiSwahili contains numerous "loan words", potentially composing up to "20 to 30 percent" of the language's vocabulary. The borrowed terms include those expected as a result of the Triangle Trade, but also less expected areas of contribution including Malaysia, Gujarat, and Turkey. Portuguese, English, and German terms all stem from colonial interactions with Lamu beginning in the sixteenth century (Romero 1997:3). As Lamu and other areas became more inundated with the offspring of the monsoon seasons, the popularity of the port language grew and eventually superseded the use of mother tongues from the hinterland (Romero 1997:2).

The trade and information exchanges were not merely one-way transactions; during the shift of the monsoon winds, East African traders would sail into the Persian Gulf during the *kusi*, from April to October. Ceramic shards, discovered on many of the coastal islands, have been interpreted as proof of early trade relations branching to areas previously thought inaccessible (Romero 1997:4). Thomas Wilson discovered shards he claims originated from the Far East as early as the ninth century. Similar items were found by Neville Chittick on Manda Island, near Lamu, originating from China around the same period (Romero 1997:4). The ninth century is also when Islam is believed to have been introduced to the East African coast from the Persian Gulf, and its definitive hold can be proven by locally minted coins discovered by Horton with Muslim names within the design created around the eleventh century (Romero 1997:4).

Horton further supports the existence of pre-Islamic trade in East Africa with

archaeological evidence "of imported pottery, beads, and glass from excavaged structures and rubbish pits; indeed the proportion and range of imports found in these African sites suggest that imported material culture was a ubiquitous feature of the lifeways of these communities" (Horton 2004:63). Imported glazed pottery has been found in East African sites ranging from the eighth to the fourteenth century. Whether the pottery arrived as a result of direct trade with the Perisan Gulf or was obtained as a result of a multi-leg journey that included Indian trade ports is still to be determined, but the ceramics stand as evidence of pre-Islamic material culture exchange (Horton 2004). The imported materials were considered of great value and represented highs social status, as evidenced by their inclusion in religious architecture (Horton 2004). Horton provides documentary evidence as well in the form of an account by Arabic historian Al-Mas'udi, who visited the East African coastline in 916 C.E (Horton 2004). Al-Mas'udi attests to observing ivory being exported to Oman, destined for markets in the Far East (Horton 2004).

Romero discusses how, in a manner similar to the greater Swahili coastline as a whole, the Lamu archipelago was first visited by merchantmen from the Red Sea, preceding even visits by the men of Hindustan in the first century C.E. As Islam began to popularize in Lamu after the ninth century, migrants from Persia, Oman, Arabia, and the hinterland resettled in Lamu and added to the genetic diversity so essential to the Swahili identity (Romero 1997:4).

The interaction of the Lamu people and their maritime environment serve as an example of the greater Swahili culture found along the East African coastline which incorporates areas such as Pemba, Zanzibar, Mafia, and more. The environmental conditions within Lamu are similar to those of most of the Swahili coast including the Tanga Region (Prins 1965). Low-lying coastal plains dominated by mangrove swamps and mud flats compose much of the landscape (Prins 1965). Beaches of fine sand resulting from the dynamic action of wave upon coral face are

also commonplace and serve as ideal areas for boat launches and repair yards (Prins 1965). Though somewhat uniform to the untrained eye, the Swahili sailor can interpret the landscape, water color, and shore composition to best navigate the numerous channels, bays, and inlets that compose his world. As seen near the village of Tongoni as well as the Old Town of Lamu, the corals are used to construct elaborate archways, homes, and mosques, with their legendary durability allowing for centuries of navigational use (Prins 1965).

Whether in the form of tall cemetery markers or the minarets common to Somaliland, ancient ruins serve as the terrain references for small vessels plying coastal waters. The headlands and outcroppings form bay areas or sounds that act as protected enclaves, allowing clusters of small villages to form in relative isolation (Prins 1965:17). These settlements demand the use of seaborne transportation especially when local roads or pathways are compromised because of seasonal rains. As stated by Prins, this obstacle "intensifies" the maritime nature of these sporadic communities and their reliance both upon each other and their ocean environs (Prins 1965:17).

The seasonal isolation also encouraged interaction beyond neighboring villages in search of more varied trade goods. Because of the monsoon rains and the low-lying nature of coastal settlements, villages would seasonally be cut off from the mainland and effectively become temporary islands (Prins 1965 17-18). As only other maritime communities had the means or desire to visit, the bonds and cultural commonalities between such areas strengthened and allowed for greater exploration (Prins 1965 17-18). Navigational knowledge was transferred among sailing groups and even small craft from rural villages could visit more metropolitan communities, thus expanding the socio-economic reach of even the most isolated groups, though still within the peasant maritime context (Prins 1965 17-18).

In opposition to the widely accepted concept that the Swahili people's influence remains limited to the Indian Ocean coastline, anthropologist A.H.J. Prins argues that these areas are merely the most accessible and visible examples. Swahili culture and maritime influence extends deep into Tanzania, the Congo, and other water dependent communities within the hinterland as a result of centuries old trade networks and tribal conflicts. Even more controversial is his assertion that this concept of East African maritime culture extends its borders even into the Persian Gulf, thus incorporating areas such as Oman and Hadhramaut that were previously seen as far too established to have incurred any change as a result of merchant interactions. His conjecture is supported by the historical alliance between the WaAmu and Omani sultanate as described earlier. It is these beliefs in the independent nature of the Lamu peninsula, formed after his many years living among the WaAmu, that form the basis and therefore the viability of applying Prin's authoritative ethnographic work *Sailing from Lamu* to a study of East African maritime lifeways (Prins 1965).

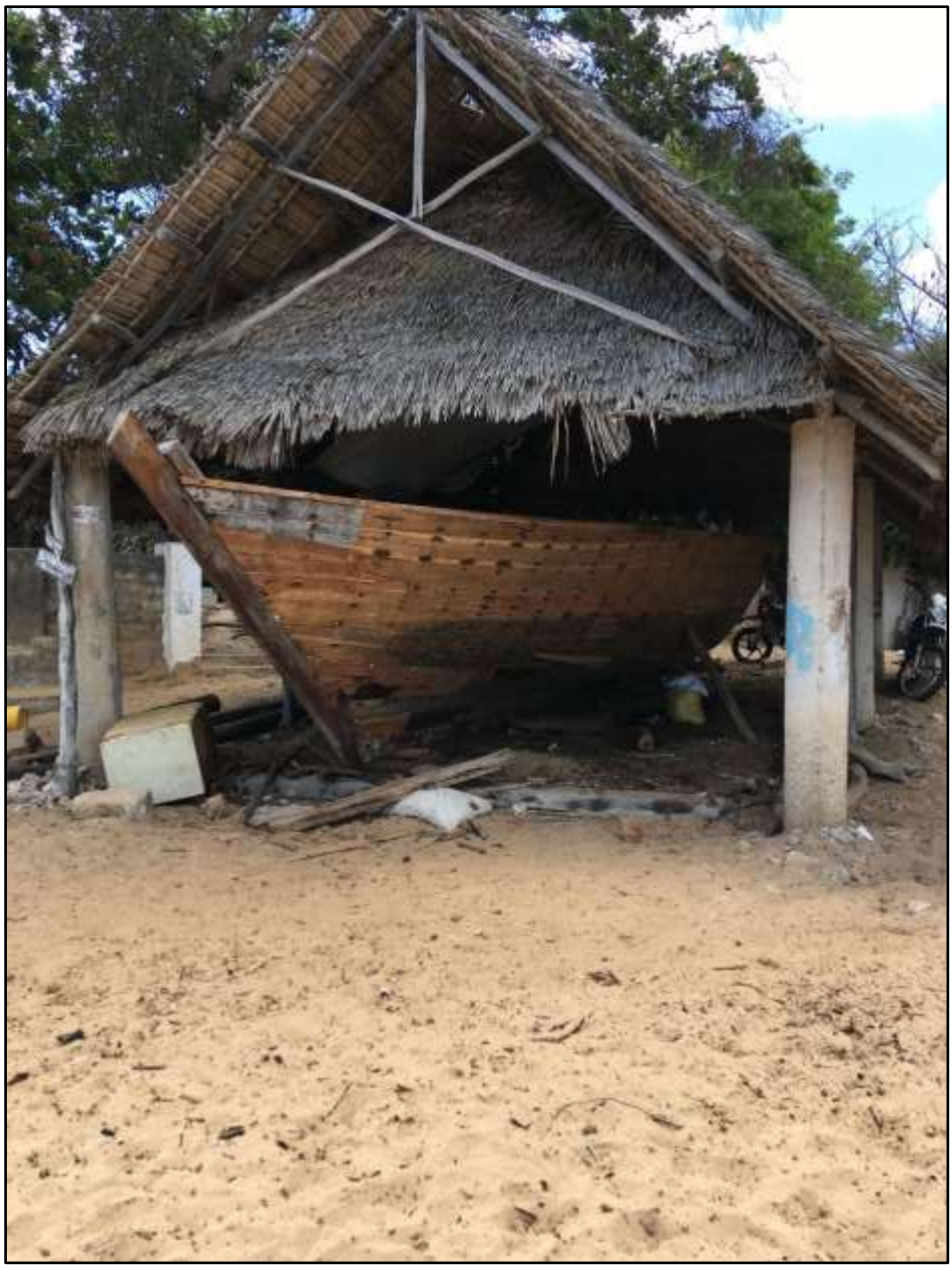

Figure 11: *Samba* undergoing repairs, Lamu, Kenya (Photograph by Patrick Woodruff)

The concept of the peasant identity being critical to the East African cultural concept extends to the coastal areas, including Lamu, in the sense that while their traditions may be influenced by outside entities, mainly Arabic in nature, the East African people are inherently dependent upon the land/sea as their life source, independent of a greater economic model. Any exchange of goods, information, or culture was done voluntarily and not mandated by economic

need. The reciprocal end of the trade networks, such as Omani merchants, may have in fact been motivated by monetary gain, however, the Indian Ocean basin trade network from the Swahili perspective was one borne of intrigue and diplomacy rather than material wealth.

It would be wrong, however, to view the East African coastal peoples as minor players in such interaction simply because it involved "more established" or "greater" civilizations. The well-established communities within the Persian Gulf and in the Indian sub-continent contributed ship construction technologies and religious perspectives to their East African counterparts long before interaction with the Portugese in the sixteenth century but the coastal communities retained a distinctive identity of their own, greatly because of their peasant economy and geographical isolation, much like their Tanzanian counterparts (Prins 1965).

Through the comparative analysis of specific coastal villages with those of the Lamu archipelago it is possible at the very least to gain insight into the maritime landscapes of East Africa and begin to establish an indigenous account of the effects of colonial occupation upon the greater Swahili culture through the archaeological record supplemented by modern socio-economic theory and ethnographic research.

V. Conclusions

In conclusion, the common people of Tanzania, especially the rural maritime communities along the shoreline, resisted colonial occupation with both force and diplomacy. Resistance was wide spread and not isolated to large cities, such as the insurgencies within Saadani and Tanga. The Tanzanian peasantry did not adapt the crops, agricultural techniques, or markets of their colonial occupiers. Though isolated areas were affected by the demands of global trade, indigenous Tanzanians relied upon traditional networks of clientele and patronage to perpetuate their livelihoods (Glassman 1995: 260). Rural villagers were far less concerned

with wealth accumulated through market trade and local government representation than they were with resource control and the protection of traditional lifeways and community (Glassman 1995:260).

The violent and inhumane manner with which both Germany and Britain attempted to utilize a cultural collective as an economic resource only further fueled active and passive resistance. The agricultural and maritime lifeways that existed hundreds of years ago continue today as a result of the symbiotic relationship the peasantry has developed with its natural surroundings and the lack of understanding demonstrated by the developed world towards its lifeways.

While resource management has become a growing concern as Tanzania strives to be the centerpiece of East Africa, its cultural traditions and artisanal means of sustenance continue especially amongst the more rural villages. The underdeveloped state of the nation as a whole is largely due to mismanagement by colonial powers in the nineteenth and twentieth centuries, further hindering progress as Tanzania struggles to form an international identity, protect historic tradition, and preserve its natural wealth.

The numerous uprisings are indicative of the Tanzanian attitude towards colonial rule, especially that of the Germans who committed war crimes with the dismissive airs of a people convinced of their superiority. This surviving identity is shared by other WaSwahii communities including that of the WaAmu in Kenya. The historical rejection of colonial rule though active resistance by the people of the Tanga Region and the perpetuation of traditional vessel construction techniques as evidenced by field research each support the supposition that Tanzanian boat craftsmanship encompasses the cultural and political heritage of even the most rural villages and represents a people's dedication to their maritime history.

Even today, as a result of predominately foreign research efforts, the story of colonial Tanzania is seen through a Western lens, a view prejudiced against any economic model outside of capitalism and socialism (Hyden 1980:3). Tanzania is dominated by the poor, uneducated subsidence worker, whether in an agrarian or maritime sense. On the Tanzanian coasts, it is often both, and yet generations of its foundational unit pass without any record of their ethnohistory besides that of spoken narrative. The peasantry of Tanzania in their unique form share no recent kin within the modern Western world and yet were greatly formed by its misdirected ambition.

The surviving traditional styles of vessel production stand as tangible evidence of the impermanence of colonial influence upon the lifeways within its borders, having been perpetuated as a form of cultural resistance as seen in the ethnographic data and analysis of the following chapters. To this day, expert boatbuilders are constructing craft with the same tools, materials, and techniques that their forefathers utilized. The styles and operation of the vessels remain unchanged with few exceptions. Local experts acknowledged altering designs because of international security concerns or the need to satisfy the whims of individual customers. For example, due to Somalian pirate activity in the Indian Ocean Basin, *wafundi* install large, foreign produced petrol engines and use streamlined hull designs to allow customers to outrun potential hijackers. Evidence of security concerns is specifically demonstrated in the analysis of the interviews with *Mfundi* Makame in Stone Town, Zanzibar (100-101). The factors affecting modern traditional design are multi-faceted, but they are not grounded in colonial influence nor the historical record of either British or German colonial occupation.

Chapter 3: METHODOLOGY

To best determine whether modern indigenous watercraft within the Tanga Region are subject to colonial design influences it is necessary to incorporate a comprehensive approach utilizing multiple data collection techniques. As touched upon in the introduction, preliminary conclusions are established using historical, ethnographic, and archaeological data. The interdisciplinary combination of these three social science foci allows for an in-depth understanding of the cultural context within which the vessels in question are designed, built, and utilized. Using historical data collected from a wide range of sources allows for the establishment of precedence and to demonstrate patterns in indigenous response to colonial influence to better determine the plausibility of transfer to cultural material, in this instance watercraft design. The ethnographic portion serves primarily to provide the first-person perspective of the individuals still actively participating in traditional East African vessel construction. Including an archaeological element creates a physical record of the vessels as they are currently built, offers insight into past construction techniques, and illustrates design differences between craftsmen.

I. Ethnographic Methodology

While primary source narratives exist detailing the indigenous East African experience under colonial rule, as seen in the *Lamu Chronicles,* they remain far and few between because of the lack of historical record and the preferred use of verbalized narrative in the form of poetry to preserve collective memory. To corroborate modern ethnographic data collected through interview, such primary sources are outlined, and conclusions drawn regarding past perspectives. This result in turn is compared to the interviews collected during the field research stage in the search for precedent, pattern, and any form of shift in outlook.

Figure 12: Author reviewing the KiSwahili vessel nomenclature for a *sapa*, Tongoni Village, Tanga Region (Photograph by Madeline Roth)

To best establish whether there is evidence of colonial influence within vernacular ship design, multiple ethnographic research methods are utilized. The conclusions and future research directives are derived using three analysis techniques; narrative analysis, schema analysis, and finally qualitative comparative analysis (QCA). The narrative analysis and schema analysis methods are based upon the field notes and transcripts from the ten semi-structured interviews. The QCA utilizes themes and the original research questions to establish the criteria needed for quantitative analysis. Thus, the final product is an amalgam of both qualitative and quantitative analysis techniques to provide the greatest insight possible into the indigenous perspective and to create additional research questions.

Figure 13: *Mfundi* demonstrating the use of a manual drill, Nungwe, Zanzibar (Photograph by Author)

The interviews were conducted in the villages of Tongoni, Saadani, Mwarongo, Pangani, Nungwe and the city of Stone Town over the course of three and a half weeks. These locales allowed immediate access to a concentrated maritime population but also facilitated the observation of vernacular craftmanship and indigenous lifeways. The large proportion of sailors, fishermen, and craftsmen present at any given time facilitated the use of convenience sampling to select potential informants.

This was especially true within the village of Tongoni, located a few hundred meters from centuries old mosque ruins composed entirely of local corals. The village's daily activities centered around the perpetuation of their maritime lifeway. Despite its small size and very rural location, the village featured an active boatyard, dhow construction site, and large population of local captains and crew. Due in large part to the plethora of information available and the good fortune of being present while a large *dau* was under construction, Tongoni became an informal

base of operations. Returning numerous times to record the progress of the *dau* under construction, Tongoni was an excellent proving ground and thanks to the patient nature of the community, allowed for the refining of the interview schema before approaching more difficult areas of interest.

Another important element of ethnographic data collection is consideration of the target population itself. While all of the interviews conducted took place within the same country and in the same language, each region, city, and community is unique and deserves individual appreciation. Tanzania is composed of numerous tribal groups, religious communities, and individuals of differing socio-political backgrounds. To successfully engage any one individual in conversation, let alone effectively elicit sensitive information, requires preparation. Site selection must be done carefully not only to ensure continuity within the research presented, but also to prevent any form of legal or social blowback.

In Tanzania in particular, the political environment remains volatile due to a recent presidential election resulting in diverse reactions. Coastal communities, while predominately Muslim, embrace varying forms of Islam. Whether Sunni, Shia, Sufi, or other domination, the researcher must acknowledge and approach each with due courtesy. In all communities, a shared history of respect if not outright worship of nature fosters a unique belief system and interplay with resource use and governmental regulation. The sites selected shared commonalities in the form of a strong maritime cultural element, ship construction sites, resident ship construction experts, and consist of an equal mix of isolated and more urban demographics.

Figure 14: Approaching the village of Tongoni from the ruins, Tongoni, Tanga Region (Photograph by the Author)

Informant participation in the interviews was dependent upon willingness to engage and provide responses. While the expert ship builders were the preferred informant group, the main criteria for participation required knowledge and use of traditional watercraft. Informal information gathering with experienced sailors, vessel repairmen, artisans, and residents allowed for a comprehensive sampling of the communities involved. The formal interviews consisted exclusively of *wafundi* and village elders. The *wafundi* allowed access to indigenous perspective on construction techniques and stylistic trends, while the village elders provided first person perspective or familial narrative regarding colonial occupation and interaction. Information gathering from other residents or relatives provided additional informant background and new research directions into specialized crafts previously not considered (see Image 36: sisal rope manufacturing for fishing nets).

Figure 15: Lamu waterfront with large *daus* at moorings (Photograph by Patrick Woodruff)

Any foreign locale presents unique challenges for research considering language barriers and the fact that potential informants can assume a defensive, guarded posture. After the first couple of recruitment attempts it became apparent that it was critical to introduce the investigator as a scholar looking to increase awareness to better serve the community. Any potential informants were assured that all information shared would be protected by the university and be distributed only within the academic community. An assurance that a hard copy of the report will be made available upon completion was made to the interviewees and will be facilitated through the University of Dar-e-Salaam and the Department of Archaeology. A physical disclosure of research objectives as mandated by the IRB was made available in both English and KiSwahili to

all those who participated, with copies available to all who agreed. The IRB research disclosure was discussed in detail while both written and verbal consent was obtained before any recording efforts were initiated.

Once introductions were made and dialogue began, the informants were more than willing to share their personal and collective histories. The village elders were especially forthcoming within the smaller villages such as Mwarongo and Saadani, as these areas have received little academic attention in the past. Quite a few of the informants requested hard copies of the completed research project as well as a return visit of a longer duration. The data collection tool was presented as a voluntary interview that would allow other students, both international and domestic, to gain a greater understanding of the nature of Tanzanian shipbuilding tradition. The team was especially sensitive to cross-cultural awareness as it is critical to the success of international research and paramount to emphasize heritage conservation as the objective. All involved in watercraft construction take deep pride in their product and the traditions involved, as evidenced by the fact that the informants were even willing to discuss the highly personal religious ceremonies involved in the maiden launch of a new vessel.

The inquiries made during the semi-structured interview were open-ended, also known as "grand tour" questions, which allow the interviewee to dictate the direction and flow of the conversation (Bernard et al., 2017). The responses to these questions were recorded with video and in field notes to create a narrative for each of the informants who chose to participate. Informants were not selected based on any given criteria such as age, gender, or race and the only differentiation that was established was their role within the maritime lifeways of their community and whether they participate in shipbuilding or were considered an expert craftsman.

Most interviews were conducted with elder *wafundi* as they are the primary source for ship construction and the history of vessel design. The number of informants selected and the use of individuals from differing locales acted as safeguards against individual bias. The interview tool served as a starting point for the interview and subject matter was dictated by the informant and their knowledge base. The semi-structured interview questions are listed below:

I. Semi-Structured Interview Tool

a. How do you describe your occupation?

b. How do you describe your family and their role in your occupation?

c. How do you view your boat?

d. What makes your vessel special or different?

e. How did you become a craftsman?

f. What stories have you been told about boats or other sailors?

g. How do you build a boat?

h. What types of wood do you use?

i. Where do you purchase nails or other metal hardware?

j. What tools do you use?

k. How do you preserve the wood?

l. Are there government regulations about the size or design of your boat?

m. Do you pay taxes on it?

n. How many people help you build a boat and do they have specials roles or skills?

o. Do you (or someone else) design it from a model or written plan? How do you measure dimensions?

p. How many years does the boat last?

q. What is the area that deteriorates first and why?

r. Do women and children assist you in the building process?

s. Is there a boat design that is more popular in the community depending on the environment or purpose of that boat?

8. What traditions do you participate in that are connected to the boat(s) or the sea?

9. May I see where you work? Is there a special area for boat building?

10. What do you know about the history of native boats?

11. How long have the men or women in your family fished/traded?

12. Do you know of any *Wageni* (foreigners) boat builders here?

13. Have boats that are made here changed in design? If so, how and why?

14. Where do you get your boatbuilding supplies?

15. Will you pass on your skills and to whom?

16. How often do you sail together as a crew?

17. Are all the sailors *WaTanzania* or do you use *Wageni* as well?

18. Can you show me places important to the life of an outrigger/*dau*?

19. What kind of emergency kits do you carry, if any?

20. Have you created any special tools or features to make work easier?

21. Can you describe how you perform work aboard the vessel?

22. Can you name important parts of the vessel for me in Kiswahili?

23. What are the dangers you face when working?

24. How do you dock or tie up with other boats?

25. Can you run the vessel aground on the beach, and if so, why?

26. Can you show me how to operate the sails?

27. How do you use the restroom aboard ship?

28. What are some health/sanitation concerns while underway?

29. What type of work do these vessels do?

30. Can you explain the construction process or tell me where to go to see it happen?

31. Are there any special rituals/beliefs that must be attended to before a trip?

II. Narrative Analysis of Semi-Structured Interviews

To describe experiences or events, humanity has depended upon the ability to communicate through verbal story telling (Bernard 2011: 416). Cross cultural regularities are the result of the greater shared human experience and allow individuals from differing backgrounds to relate to one another (Bernard 2011). The experiences of others naturally engage an audience's curiosity, but narratives do not exist simply to entertain (Bernard 2011). For time immemorial they have been shared, expanded upon, and recorded information in order to act as a learning tool, that is to share lessons learned in the past. Each personal narrative provides insight into not only the individual's personal history, but the greater collective identity of the community itself.

In the instance of East African society and cultural consciousness, both *mashairi* (poetry) and storytelling have long stood as the primary means of ensuring the survivability of both personal and collective histories (Biersteker 1995). Poetry, whether accompanied by music or as standalone prose, provides an effective medium to describe past events with the added benefit of entertainment value to ensure dissemination and audience recall (Bierstecker 1995).

Figure 16: Author discussing research plan with interpreter, Tongoni, Tanga Region (Photograph by Madeline Roth)

In its most basic definition, narratives exist to prevent others from experiencing the hardship endured by the storyteller or to prevent wasted effort looking for a solution to a problem in an educational sense. While this may be the definition most closely linked to survival, narratives can also serve as a means of sharing what is seen as critical information in another sense (Bernard et. al. 2017). A personal history or familial story may provide the audience with the necessary background to begin to trust the storyteller or create an empathetic bond that facilitates exchange of goods or information (Bernard et. al. 2017). These narratives form the core of cross-cultural exchange and are the building blocks for "port languages" such as KiSwahili (Bernard et. al. 2017).

Ethnographic data also allows informants to share information to promote awareness of foreign lifeways. Narratives are a form of cultural expression created out of necessity and still utilized today by anthropologists to gain greater perspective into an informant's background and

perspective (Bernard et. al. 2017). In this instance, expert ship builders share their working knowledge of traditional vessel construction techniques and how the craft were affected by the community's collective history. The interview data are initially formed into a narrative to better establish overriding themes and to understand the essence of the informant's message. Narrative analysis attempts to outline themes within a discourse and portrays the data as a story. The objective of the dialogue is to gain a greater understanding of the local history of shipbuilding and any knowledge the *mfundi* may have regarding colonial influences, whether positive or negative.

In some instances, the interviews would include hands-on interaction with the vessels being constructed, models, or other elements of material culture related to the construction process. The overall objective of the research effort remained the establishment of a collective primary narrative regarding the indigenous perspective regarding colonal occupation and influence. The majority of interactions centered on individual discussions with the experts and asking them to expound on their personal recollections. Even before concluding the collections aspect of the fieldwork, it became apparent that there was continuity in perspective in most if not all of the dialogues.

Before any form of ethnographic analysis occurred, the interviews in both video and note form were reviewed for content and applicability. Those with poor audio quality or conversations that did not contain information relevant to the research objectives were dismissed. Fortunately, because of redundant recording efforts, the majority of interactions offered some form of actionable data. The selected video clips were first edited and translated before being submitted to a professional transcription service to verify accuracy. The compilation is included in the appendices (Appendix G) for reference and to give context to the excerpts used during analysis.

A select few interviews which were deemed critical to the research product were also sent to a group of students (credited in their contributions and located withn Appendix G) from the University of Dar-es-Salaam as selected by Dr. Elianza Mjema, to again ensure accuracy. As these students have a background in both anthropology and archaeology, they were able to offer greater insight into the local vernacular concerning the intended message within the research context. The collective transcription product was then edited for grammatical mistakes as is common during third person translation.

The transcripts in conjunction with the field notes serve as the basis for the ethnographic analysis and act to establish thematic elements common throughout. Thematic commonalities included concepts outlined within the hypothesis as expected outcomes and centered on a generalized outline of indigenous perspective. The themes are especially tied to colonialism as that was the main point of interest during the interviews and any indication of knowledge of the area's colonial history was aggressively pursued.

Many of the individuals interviewed were of advanced age and a select few were alive during the British occupation following the First World War. All who were interviewed were knowledgeable about their prospective communities' colonial experiences and, in conjunction with their ship building expertise and experience, served as subject matter experts. This proved critical in consideration of the lack of primary source historical record, especially within the smaller more rural villages such as Saadani and Mwarongo.

As the interviews continued and the inquiries refined, the emphasis became more centered upon design interpretation and communal history rather than simply a study of constructive technique and material. The construction and use of traditional Swahili vessels as an ethnographic research project has been well documented within A.H.J. Prins' *Sailing from Lamu:*

A Study of Maritime Culture in Islamic East Africa. Depending on the amount of time the informant was able to dedicate to the interview, the questions fielded had to be carefully selected and efficiently presented. This careful selection became especially important when working within well documented areas such as Nungwe and Stone Town.

Figure 17: Author discussing hull repair and protective measures with elders, Mwarongo, Tanga Region (Photograph by Madeline Roth)

III. Schema Analysis of Semi-Structured Interviews

Schema analysis is similar to grounded theory analysis since both are based upon inductive reasoning. Schema analysis also "combines elements of anthropological linguistics and cognitive psychology in the examination of text" (Bernard 2011:439). Individual behavior is influenced and shaped by the cultural entity within which they operate. Schema analysis stresses the importance of understanding the cultural dynamics and unique characteristics of an informant's social background to be able to effectively interpret textual data. It identifies the

cultural framework within which the informant's perspective and opinions are formed to gain a better understanding of the social context within which they occur (Bernard 2011:439).

An example would be how the military and its veterans have achieved an almost religious status within American society and any attempt to deride their efforts is seen as culturally insensitive. The veteran cultural norms are shaped by their past experiences and collective social conditioning. Telling indications of schema conditioning can be seen within the specific vernacular or "indigenous terms" unique to a given cultural group. Schema analysis pays particularly close attention to the use of group-specific slang and exemplary statements when attempting to establish conclusions regarding social expectations and norms.

The strong underlying themes established in the narrative analysis are indicative of the cultural norms (Bernard 2011). For example, the labeling of the colonial forces as *Waulaya* (Europeans) or *Wageni* (foreigners) demonstrates the desire to differentiate between the indigenous and occupying populations. Another example illustrating the confusing nature of slang and local vernacular is the label "*Mbaya"*, a term typically meaning a "bad" or disreputable individual. This meaning shifts, however, depending on context and can also mean the equivalent of the English term "badass", generally seen as a complimentary description. The identification of "indigenous terms" and their repeated use is often used as a quantitative indicator of a common perspective as conditioned by the cultural dynamic (Bernard 2011).

Schema analysis also pays attention to "exemplary statements", or statements of significance that encapsulate the essence of the informant's narrative. Exemplary statements are often an incredibly powerful means of conveying an individual's perspective as they are kept in the original narrative form and lose none of their poignancy due to data reduction efforts. The excerpts being used in schema analysis typically consist of the most poignant or heartfelt

elements of the interview and summarize the informant's perspective. Despite the presence of opposing narratives, the data set allows for conclusive reduction in the form of qualitative comparative analysis.

IV. Qualitative Comparative Analysis of Semi-Structured Interviews

Both the narrative and schema analysis techniques provide actionable data in the form of dominant themes and exemplary statements. To best determine if any patterns exist that could confirm or disprove the original hypothesis, it is helpful to reduce the qualitative data into a visual quantitative product. Qualitative comparative analysis (QCA) is a type of formalized analytical induction which utilizes the Boolean approach to quantify data (Bernard et al. 2017:344). This allows ethnographic qualitative data to be translated and displayed numerically, bolstering its scientific validity and overall impact (Bernard et al. 2017:344).

In the case of the shipbuilders' interviews, the Boolean approach involved whether certain themes were present within the narrative. (Bernard et al 2017:344). The themes selected would quantitatively confirm or deny the original hypothesis. Each informant's narrative was subjected to four thematic criteria relating to their perception of vessel construction histories as well as a fifth column indicating whether they believed the colonial powers directly affected ship design. By utilizing the informant narratives, it was determined whether thematic qualifiers were present. The criteria are determined for each respondent based upon the narrative and schema data for each interview. If a criterion is satisfied, it is indicated with a positive qualifier. The spreadsheet demonstrates the validity of the original hypothesis both visually and numerically. This spreadsheet also allows for a visual representation of the data as seen within the analysis chapter.

Ethnographic research is by no means limited to observation, interview, or the processing

of data using computer logarithms. It includes the analysis of text in all its forms, including some not commonly recognized as such. The term text is not limited to mere written word, but also includes artifacts, images, behaviors, and events (Bernard 2011:407). Anything involved with human expression is open to interpretation and can be viewed as a form of "text". The thematic truth underlying such categorization lies in the fact the unrefined data is a result of the human experience, whether material or expressive in nature, and provides greater insight into human life ways once analyzed.

Text collection has long been a research tool within the field of anthropology. The written word allows researchers the opportunity to gain a greater appreciation of perspective through the accounts, ideas, and emotions of other cultural entities. It is differentiated from a verbal exchange in that body language and context are not present. Interpretation of true intent is made possible through analysis of word selection and the search for overriding themes or patterns. There are multiple forms of text analysis, some of which depend greatly on the abilities and instincts of the researcher while others place faith in computer programs (Bernard 2011:408). To analyze the responses of the ten informants, multiple text analysis techniques are utilized: grounded theory analysis, narrative analysis, and schema analysis. These three techniques were selected to best delineate the overriding themes of each interview.

The use of narrative analysis approaches the text as a story with a general sentiment as the main concern. The same attitudes demonstrated within the grounded theory exercise were supported within the narrative analysis as well. The narrative analysis seemed to humanize the participants to a greater degree by not quantifying their responses and reducing the data to simple values.

Finally, schema analysis incorporates social conditioning as an influencing factor and

forces the researcher to achieve a greater appreciation for the informant's cultural background before attempting interpretation. Social phenomena are easily understood by those within the same or similar cultural entities, but the mental models established through immersion are a critical part of cross-cultural sensitivity, which is a principal requirement for successful anthropological research no matter the medium or techniques.

II. Archaeological Methodology

The main objective of the research project centered around an ethnographic data collection to delineate the presence or lack of colonial influence on modern indigenous vessel construction, which was in large part to prevent redundancy in regard to the numerous works detailing such craft as seen within the literary review. Ethnographic interviews were, however, not the only form of data collection, as the project is interdisciplinary in nature. Two major considerations spurred the need for archaeological recording of local vessels and material culture: the lack of written record detailing rural vessel composition within the Tanga Region, as well as a need to create a database to draw comparisons to other research efforts' different locales, and the utility of such data in the forming of conclusions regarding foreign design or construction influence.

As a result, three forms of archaeological data were amassed while working within the selected sites: scaled photographic and video recording of indigenous vessels, scaled drawings and site maps, and actual physical models to provide three dimensional examples of the craft encountered. Multiple forms of experimental archaeology were also conducted, including assisting with vessel construction, crewing a fishing expedition, sailing a small *dau*, and the manufacture of sisal ropes. The archaeological recording products provide an unprecedented record of rural Tanga vessel design while creating a platform for comparison, thus allowing for more comprehensive conclusion development.

Figure 18: Scaled photograph of *pamba* (cotton) caulking found on discarded *sampa*, Tongoni Village, Tanga Region (Photograph by Madeline Roth)

The focus of the archaeological data collection efforts centered on the scaled recording of the vessels and features unique to the craftsmen or locale. Two sets of proformas (see Appendices D and E) were prepared to facilitate the recording of desired vessel feaures, one for the *ngalawa* (outrigger canoe) and another for the larger *daus.* Upon arrival it became apparent that there were more differentations within each model subset and recording shifted to video form to allow for more time to conduct the interviews. A standard archaeological scale marked in ten-centimeter increments was used to expedite measuring scantlings and to minimize interference. Utilizing the GoPro camera, digital camera, and at times cell phone camera, a visual progression of the construction, repair, and use of indigenous craft has been established.

Figure 19: KiSwahili nomenclature for framing element named *sayari* (planet) within a discarded *sampa* (flat-bottomed *dau*) vessel, Tongoni Village, Tanga Region
(Photograph by Madeline Roth)

Once again, the village of Tongoni was the centerpiece because of the sheer variety of vessels present and the accommodating nature of *Mfundi* Muddi, the resident expert ship builder. The collection efforts occurred concurrently with the construction of a large ocean-going *dau* as ordered for a wealthy urban tradesman. *Mfundi* Muddi had just completed forming the keel and sternpost upon arrival and proceeded to emplace the keelson, Y-frames, garboard strakes, and lower hull planking over the following three weeks.

Tongoni village provided an excellent venue for the recording of *daus*, *sampas*, *ngalawas*, and assorted tender craft of varying dimension (known locally as *boati*, or simply "boats", which closely resembled traditional New England style rowboats). The villagers were very welcoming in allowing the recording and participation in various activities necessary to support the vernacular fishing trade. Instruction in sisal rope manufacture, replacement of *pamba*, or cotton caulking, and hull repair were demonstrated in detail. In addition to the wealth

of cultural material and experimental archaeology opportunities, the elders and fishermen of Tongoni acted as impromptu guides and quickly became part of the research team. This facilitated the inclusion of other nearby small, rural villages at their recommendation and they facilitated the necessary introductions.

The data garnered at both Sadaani and Mwarongo would not have been possible without the aid of *Mbwana* Dadi, a village elder and longtime fisherman who invited us along on a fishing expedition early in the morning. This unexpected opportunity allowed the recording of the complete harvesting process, from launch to dissemination of the catch. Seemingly a test of mettle, the fishing trip earned us access to the isolated beaches of Mwarongo, upon which vessel repair, manufacture of indigenous fish wiers, and even a religious vessel dedication were witnessed and noted.

Mfundi Dadi also facilitated a visit to the nearby village of Saadani which proved of significance in the fact that though they were located only a mere 800 some meters from Tongoni, the vessels in use consisted almost entirely of outrigger canoes, previously referenced as *ngalawa*. While there was no resident expert ship builder, it proffered the opportunity to talk in detail with a village elder about the construction and use of the canoes which were far less prevalent elsewhere. The use of these inter-coastal waterway craft was explained in detail by the informant, and a database of vessel nomenclature was established.

The archaeological recording of other forms of traditional maritime crafts including the production of hand-made fishing weirs, sisal ropes, and manual vessel construction implements stand in stark contrast to the extensive use of modern petrol engines. Despite the fact that local fishermen in both the small, isolated villages such as Tongoni and Mwarongo as well as modern cities such as Stone Town actively use modern propulsion technologies, numerous instances of

the continuity of maritime indigenous craft design were recorded. The continuing choice to utilize traditional forms of maritime craft production supports the hypothesis that pride in identity and maritime lifeways facilitated the survival of indigenous vessel construction methodology during and after colonial occupation.

Using both ethnographic and archaeological methodologies, a comprehensive study of maritime culture within long ignored rural villages is possible. The ethnographic data collected was processed using three techniques including narrative analysis, schema analysis, and finally a visual qualitative comparative analysis (QCA). These anthropological results, in conjunction with the amassed archaeological database, allow for analysis of the modern vernacular fishery and indigenous watercraft construction designs prevalent within the Tanga Region, thus allowing for effective academic comparison with the predominant literature based out of Zanzibar and tentative conclusions regarding the presence of colonial influence.

Chapter 4: ANALYSIS

The analysis of the amassed data is split into two separate components within the chapter itself; the first focusing on the ethnographic collection effort and the second on the archaeological component. The ethnographic analysis is composed of three subsections, with each prescribing a different analysis technique to process the collective interview data. The archaeological analysis element centers around providing answers to the research questions regarding the vernacular craft themselves in an attempt to establish a preliminary record of construction techniques, materials, and utilization of indigenous watercraft within the Tanga Region of Tanzania.

The majority of supporting evidence is derived from the ethnographic section as there is already an extensive amount of literature in circulation on the archaeology of Tanzanian vernacular watercraft, almost none of which addresses the primary research question. The main objective of the archaeology section will be to display the vessels encountered within the Tanga region to initiate a written record for a largely undocumented part of Tanzania. The archaeology component serves as a supportive element within the greater conclusion regarding colonial influence on indigenous vessels by providing evidence via physical example.

The ethnographic research interpretations are based in grounded theory data as collected from “in-depth interviews about people’s lived experiences and about the social processes that shaped these experiences” (Bernard et al. 2017:221). The inductive method was intoduced by sociologists Barney Glaser and Anslem Strauss in *The Discovery of Grounded Theory: Strategies for Qualitative Research* in 1967 (Bernard et al. 2017:221). To utilize grounded theory is to search for causal explanations supported by empirical data to better understand social processes (Bernard et al. 2017:221). Grounded theory is especially important to ethnographic research in

that it developed a means by which qualitative data is made scientifically valid through a systematic approach to data collection and interpretation. The systematic approaches utilized are flexible and allow for adaptation because of shifting field conditions or other unforeseen variables (Bernard et al. 2017:221). By applying a methodology to qualitative data, Glaser and Strauss encouraged ethnography to become a scientifically valid form of social science research (Bernard et al. 2017:221).

The field research was initiated with the primary question already formed and a familiarity of available literary resources established, as is typical of conventional research projects. The inductive element involved the shifting means by which the data was collected, analyzed, and interpreted, as well as the refocusing of the historical background element to better explain the findings (Bernard 2011:4030-431). The research emphasis centered on establishing the indigenous perspective of colonial occupation and allowing the informant to express individual perspective regarding potential influences.

I. Ethnographic Text Analysis Component

As outlined within the methodology chapter, three types of ethnographic data analysis techniques were utilized to derive both qualitative and quantitative conclusions. These three analysis techniques: narrative/grounded theory analysis, schema analysis, and qualitative comparative analysis (QCA), summarize hours of interviews and the perspectives of ten different informants through systemic examination, thus providing the necessary methodology to consider the project scientific in nature. The application and corresponding results of each analysis technique are discussed in independent subsections.

a. Grounded Theory Analysis and Narrative Analysis

The interviews collected during the course of the research expedition are considered heritage

narratives in that the issues being discussed, in this case colonial influence, rely upon collective identities and histories for their substance (Bernard et al. 2017:290). The thematic elements of social and cultural identity are apparent after analyzing the interviews in their entirety. A unique aspect of the interviews collected is the prevalent use of folklore and the inclusion of traditional, nature-based religious beliefs within the heritage narratives.

Application of grounded theory text analysis used an iterative code list of two separate columns: one for all themes present within the transcription and a second condensed list to display the coded thematic elements. The left column records all themes encountered during the initial read through of the narrative and the right further refines the codes into overriding categories that can then be quantified.

After the coded list is established and the themes defined, it is possible to create a visual representation of the theoretical model using exemplar quotes (Bernard 2011: 438). Exemplar quotes are verbatim excerpts from the transcription that allow the reader to immediately grasp the perspective of the informant and act as either positive or contradictory evidence in consideration of the original hypothesis (Bernard 2011: 438). The exemplar quotes assist in the establishment of theoretical concept models, while the next subsection, schema analysis, allows for the discovery of cultural models (Bernard 2011: 438).

A flow chart is helpful in demonstrating the refinement of text-based data from the raw, verbatim quote (initial code basis) to categorical classification (secondary thematic labeling) until the final theoretical model (Bernard 2011: 437). Two flow charts (Table 1 and Table 2) have been created to illustrate the cognitive processes involved in deriving the overall conclusions that there has been no colonial influenceupon traditional vessel design and that all alterations are based in the need to survive within an ever shifting economic/political context.

In totality, ten interviews were conducted during the three-week research expedition, with eight of these being formal exchanges during which all the research questions were discussed and IRB requirements acknowledged. Of these eight formal interviews, half provided information about modern construction techniques and materials with little historical background or knowledge of colonial occupation. Four of the interviews were conducted with elders who had been formally trained in local histories or even experienced colonial rule themselves. Of these four interviews, two stand out as truly foundational in that both men were very familiar with colonial/foreign influences and in the case of Mohamed Khalifa, had experienced British occupation first-hand.

In the interest of remaining concise, the interviews will be treated as a collective work and not discussed in a case by case analysis in order to establish a comprehensive narrative of indigenous perspective within the area of interest. These themes are introduced and act as the foundational concepts for the post ceding analysis and visualizations. Additional analysis will include both supportive and negating instances as well as quantitative products to allow for a greater understanding of the comprehensive data pool. After reviewing the totality of field data, including transcripts from selected interviews and supplementary field notes, three thematic elements are made apparent. The informants believe in the continuity of traditional Tanzanian watercraft design and construction theory, reject inclusion of colonial influence or concepts, and have only adjusted their craft to meet economic demands and/or polticial constraints while not incorporating any form of European cultural contributions, aesthetic or utilitarian.

The coding list accounts for all of the narrative perspectives and displays the empirical reasoning for the rejection of any form of colonial design influence. After listing all codes present in the totality of the ethnographic interview data, the codes were placed into one of five

thematic elements based upon the informant's intended message as to why traditional vessel designs have perpetuated; anti-colonialism or dismissal of colonial design impacts, the limited resources available, (tools, construction materials, basic infrastructure), as a result of rural location or status as a historic construction enclave/shipyard, and acknowledgement of design shifts due to economic/political pressures including global security issues, customer demands, and international tourism (Table 3).

Two flow charts (Table 1 and Table 2) are used because of the volume of data amassed and to provide counterarguments to the inclusion of modern technologies. While the first graphic uses exemplar quotes to reinforce the projection of cognitive dissonance in regard to colonial influence, the second explains the alternative motives for vessel design change. The two flow charts not only reinforce the historically grounded hypothesis that Tanzanians dismissed and actively resisted colonial interference in all forms, but also show that any changes made to traditional vessel design are a result of the need to adapt to the modern economic and political environment to ensure survival. Incorporating petrol engines, for example, allow local captains to transport passengers quickly and reliably as part of the expanding tourism market along the Tanzanian coast. The modern peasantry and maritime communities of Tanzania have retained their cultural identity in the form of traditional watercraft design and construction technique but made the necessary changes to ensure they can retain the independent cultural lifeways they have protected for centuries.

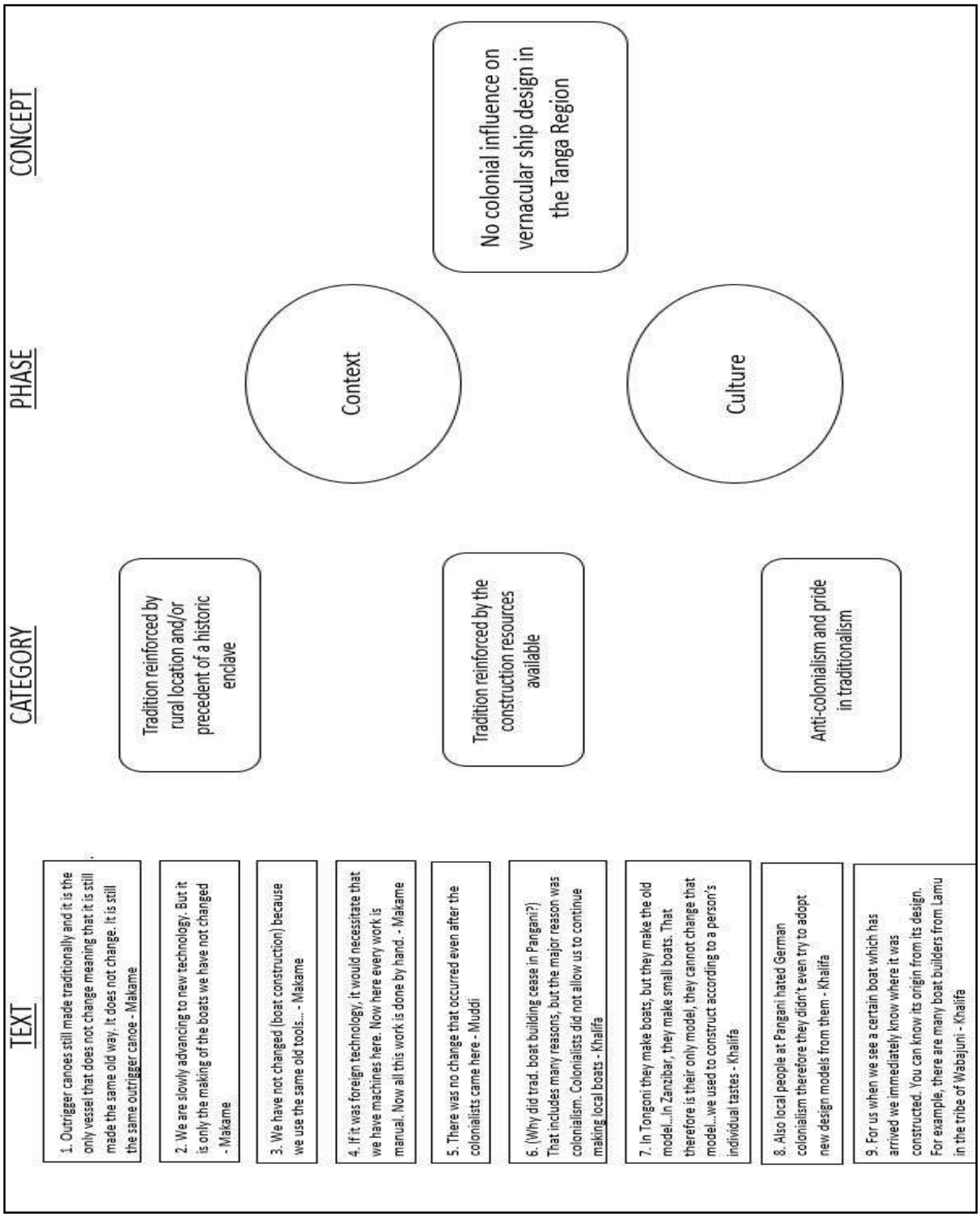

Table 1: Colonial Influence Flow Chart

Table 2: Economic and Political Influence Flow Chart

Iterative Coding List:

All Present Codes

Mohamed Khalifa (Pangani):

- Engines/design by customer
- Engines introduced during British occupation
- Youth do not want to learn/lazy
- Arabic design inputs but not European
- Traditional styles continue ex: Lamu and the tribe Wabajuni
- Regionally traditional technology diffusion
- Design for customer request/need
- Colonials introduced engines/fiberglass
- Germans used steam power
- Locals destroyed WWI German graves
- No local construction in Pangani
- Not because of engines, lazy youth
- Speedboat manufacture decreased after independence
- Still use traditional equipment/tools
- Boat manufacture is difficult, labor intensive, not appealing
- No electrical tools, all manual
- Many people still depend on sail for transport and trade
- Establish design based on intended use, dictate keel size
- Tongoni produces "old style" vessels, traditional because "no knowledge" of modern ways
- Same "old" designs in Zanzibar
- Speedboat originally fiberglass by Europeans, now traditional const. in Zanzibar
- People are using ferry rather than sailboats
- German colonialists did not allow boat manfacture and prevented local ownership
- Did not copy white people's (German) designs because people of Pangani hated the Germans and their methods
- Boatbuilding decreasing all over including Mombasa, Zanzibar, Tanga because of motorboats
- Ancient *jahazis* came from Lamu, Arabs, India
- Arabs introduced square driving sail for ocean voyages
- Khalifa worked with British Major Grant building fiberglass speedboats for British customers, trained in traditional construction techniques originally
- Locals prevented from owning vessels by Europeans
- Locals hated the German colonialists and could not obtain steel, therefore no European designs

Ambar Makame (Stone Town, Zanzibar)

- Vessels recycled for furniture in Zanzibar by Chaga tribesman
- European tourists purchase dhow furniture in Arusha
- Use experience to build, no paper design plans, all knowledge based
- Worked with Indian craftsmen, very skilled
- Foreign workers all come from Triangle trade areas; Oman, India
- Still manufacture dugouts from mango trees in old way
- Rural areas example: Bumbwini ppl still using dugout canoes daily
- Outrigger canoe has never changed, "same old simple vessel"
- Manufacture techniques only element that has not changed
- Navigational technology has improved; GPS
- Use same local and imported woods ex: teak, mahogany
- Teak still imported from India
- Construction technology has not changed due to only manual tools being available
- If used foreign technology, would have to have machines, electricity available
- All work is done manually
- Only change is machine (engine) rather than rely only on wind
- Some mix of European design with traditional construction ex: *mgwanda* (speedboat)
- Varnish vs. shark oil, cow fat
- Still have celebrations in community after vessel completed; slowly disappearing due to different religions being practiced
- Learned from watching father
- Manufactured *bumu*, large cargo vessels designed in Pakistan
- *Jahazi* built especially for Tanga Region
- Sailboats have decreased b/c of piracy in Somalia
- Sailing and business have decreased because of instability in Somalia
- *WaHindi* (Indians) use a keelson in their designs, but not *Mfundi* Muddi
- Only build dugouts in Saadani
- Tongoni uses nets when they fish while in Saadani use hook lines
- Vessel design has never changed because of colonial influence or for any other reason
- Kill goats before and after construction as a blessing
- No change in vessel design or construstion technology due to limited tools and manual construction tech.
- Originally learned to construct vessels with sail only, now use engines
- Omanis use fast boats, speedboats, to escape Somali pirates
- Sells discarded wood from retired vessels to furniture store in Nungwe, Zanzibar
- Significant smuggling between Zanzibar and mainland Tanzania
- Both sail and engine powered vessels use same designs, traditional vessel structure/materials
- Use speedboats now for tourist transportation, efficiency

***Mfundi* Muddi (Tongoni, Tanga Region)**

- Use only hand tools ex. “handi” plumb bob/protractor
- Kill goat/cow and place meat/blood at differing locations on keel
- Purpose of boat determines “nature” of the vessel/design
- Government licensing important for ocean work and registration requirements
- Use hand forged nails, local and expensive
- Arabic builders brought ocean going vessel technologies during Triangle Trade, shifted from only outrigger
- Colonial influence did not alter vessel design, remained traditional
- Transportation has not changed, still using trade winds as before

***Mzee* Luqimann and Daddi (Mwarongo, Tanga Region)**

- Maintenance very important, vessels can continue indefinitely with proper care
- No foreign builders locally
- Takes three years as apprentice before considered an *mfundi*, or expert
- Around 400 years ago local vessels had no keel until intro. by Arabs
- Arabs also influenced adding more half frames, sturdier hull to make vessel more ocean worthy
- Witnessed vessel being blessed by a local imam in Mwarongo, singing songs with schoolchildren

Table 3: Thematic Elements Influencing Vessel Design (Codes Refined and Quantified)

Theme	Instances	Percentage of Code Total
No colonial influence/anti-colonialism	33	46.4%
Resources available reinforcing trad. design	11	15.4%
Traditional shipyards/enclaves and/or rural location	10	14.0%
Consumer input	7	9.8%
Economic/Political inc. tourism, global security, efficiency	10	14.0%

b. Schema Analysis

Schema analysis stresses the importance of understanding the cultural dynamics and unique characteristics of an informant's social background to be able to effectively interpret textual data. Schemas operate on inference, the establishment of knowledge based upon groupings of observation. Through collection of indigenous perspectives, it becomes possible to establish a generalized perspective of a given issue and to dictate cultural schema through inference.

In essence, schema analysis, like qualitative analysis, relies upon the "breaking down" of narrative into indicative vocabulary (Agar 1983:55). The role of inference within schema analysis and ethnography is effectively summarized by Michael Agar in "Inference and Schema: An Ethnographic View" (1983) as follows:

> However, recent discussions of inference show that for the most part they have been considered as a list of types. We moved towards a context for the lists, as have others, by developing a vocabulary of inference nodes and links and considering the different ways they might interlink into schemas…The use of the vocabulary differs from its uses in most areas of cognitive science, though. It is not intended to model anyone's mind, nor to exhaustively document the knowledge necessary to understand a story. Instead, it is used to characterize and then resolve problems in understanding human acts that are observed by another human. As such, it applies only to the schema and inference modifications needed to resolve the differences. The systematic treatment ends when adequate ties into the similarities of the acting and observing human are made so that understanding can occur (Agar 1983: 54-55).

The cultural schema established during the research effort is considered viable in the fact that the information collected originated from not only the same region within the same country, but also due to the unilateral participation within the same context, the maritime cultural landscape. Within the Tanga region and in Zanzibar, pride in tradition, familial knowledge dissemination, and economic survival form the cultural schemata that influence individual worldview (Bernard 2011).

As demonstrated within the quantitative results of the narrative analysis, the strongest

thematic qualifier was the rejection of any form of German or British colonial influence upon traditional vessel design or construction technique. Despite the introduction of fiberglass technologies, implementation of motorized vessels, and the use of steel hulled watercraft by foreign military powers, the vernacular craft of vessel construction perpetuates much in the same way as it existed before the first interaction with Europeans. Though the traditional WaSwahili *mtepe* has been phased out of service, many rural villages, (Tongoni, Saadani,) still build and use the most archaic of traditional Tanzanian vessel, the *ngalawa*, or dugout canoe. Even in the most commercialized and modern city seen during the research expedition, the famous Stone Town of Zanzibar, *Mfundi* Makame acknowledged that they continue to build dugouts using whole mango trees.

Though European influence is apparent in the use of speedboat hull designs, known as *ngawanda*, in both Pangani and Zanzibar, the construction materials and components of such vessels is essentially the same as that of traditional *jahazi* or other ocean going *daus*. When asked if the *ngawanda* were a European design, *Mfundi* Makame replied, “No, it is uniquely Tanzanian except when we only use a bigger engine. That engine is then the power and that is what makes it move with speed” (Marr Field Notes 13 Aug. 2017) The local experts depend on manual labor and the training of more experienced men in order to produce the traditional vessels, much as they did hundreds of years ago. All of the vessel components are formed from the same woods used by their forefathers, both local (*neem*, *mtunda*, *myanja*) and imported (*tiki*). The pride in tradition is apparent in the immediate dismissal of colonial input and the reiteration that the designs utilized have remained the same despite inclusion of modern technologies. As a result of both combined economic and cultural inputs, the traditional style of Tanzanian watercraft design and construction has lasted through the colonial period and remains largely

unaltered, though endangered, to this day.

Of the eight formalized interviews, seven of the informants had received some form of their training, if not the great majority, from a patriarchal figure within their immediate family. Knowledge of vessel manufacturing and design is a guarded and revered cultural position, and this reverence became particularly evident when interviewing *Mfundi* Muddi of Tongoni. Over the course of three weeks, numerous trips were made to view the construction progress of his large, ocean-going *dau*, and the quality of information provided improved substantially as the relationship between investigator and informant progressed. Initially hesitant to demonstrate the use of his tools or to discuss his own personal background, *Mfundi* Muddi eventually grew comfortable and demonstrated his experience as *mwalimu*, or "teacher". After the second week of interaction, he finally displayed with pride the *handi*, or plumb bob style protractor, made of local mahogany, that he uses to ensure all *taruma*, or frame pieces, are angled appropriately to match the hull profile.

Figure 20: Scaled photograph of a *handi*, Tongoni, Tanga Region (Photograph by Madeline Roth)

Figure 21: *Mfundi* Muddi demonstrating the use of the *handi* to interpreter to check Y-frame angle, Tongoni Village, Tanga Region (Photograph by Madeline Roth)

Figure 22: *Mfundi* Muddi instructs author in use of *handi,* Tongoni, Tanga Region
(Still image from video recording by Ian Harrison)

Mfundi Muddi gave instruction on how to use the *handi*, placing the tool against an angled piece of rebar that acts as the guide for the *taruma* profile. Once the angle, as dictated by the hanging bob and the Arabic numeral markings, matches satisfactorily with the hull design in mind, the rebar is placed against a prepared log section and an outline drawn with blue *chalki*. The *taruma* frame piece is then manually shaped from the selected timber using an adze and form fitted to the hull for optimum fit.

Figure 23: *Mfundi* Muddi outlines the formed rebar for the *taruma* using chalk paint before shaping the frame piece with his adze, Tongoni Village, Tanga Region (Photograph by author)

The instruction in the use of a prized vernacular tool effectively demonstrated that such traditional craftmanship is actively protected and how it is only shared after trust has been established. The usual knowledge exchange occurs when a father or older relative instructs a younger male family member working as an apprentice. Pride in tradition and the safeguarding of vessel production technologies are examples of cultural schemata which form the indigenous informant perspective. These cognitive models in turn shape the informant's responses to research interrogatives and must be understood and outlined before empirical data analysis can occur.

c. Quantitative Comparative Analysis (QCA)

Of the ten amassed interviews, eight met the necessary IRB standard to be included as a

formal investigation. The presence or lack of a thematic element within each narrative is indicated in the table below as well as the percentage of positive indicators compared to the total, allowing for expedient summation of the research results. The pie graph serves as a visual representation of the dominance of family tradition, background, and economic influence while also illustrating the near lack of colonial input on vernacular vessel design among the selected informants.

Informant	Colonial Infl. On Trad. Design	Econ Inf. On Design	Family Tradition	Interaction with Colonials	Expert Ship Builder
1	-	+	+	-	+
2	+/-	+	-	+	+
3	-	+	+	-	+
4	-	-	+	-	-
5	-	+	+	-	+
6	-	-	+	+	+
7	-	+	+	-	+
8	-	+	+	-	+
Summation	**12.5%**	**75%**	**87.5%**	**25%**	**87.5%**

Table 4: Quantitative Comparative Analysis Table with Design Inputs by Informant Percentage

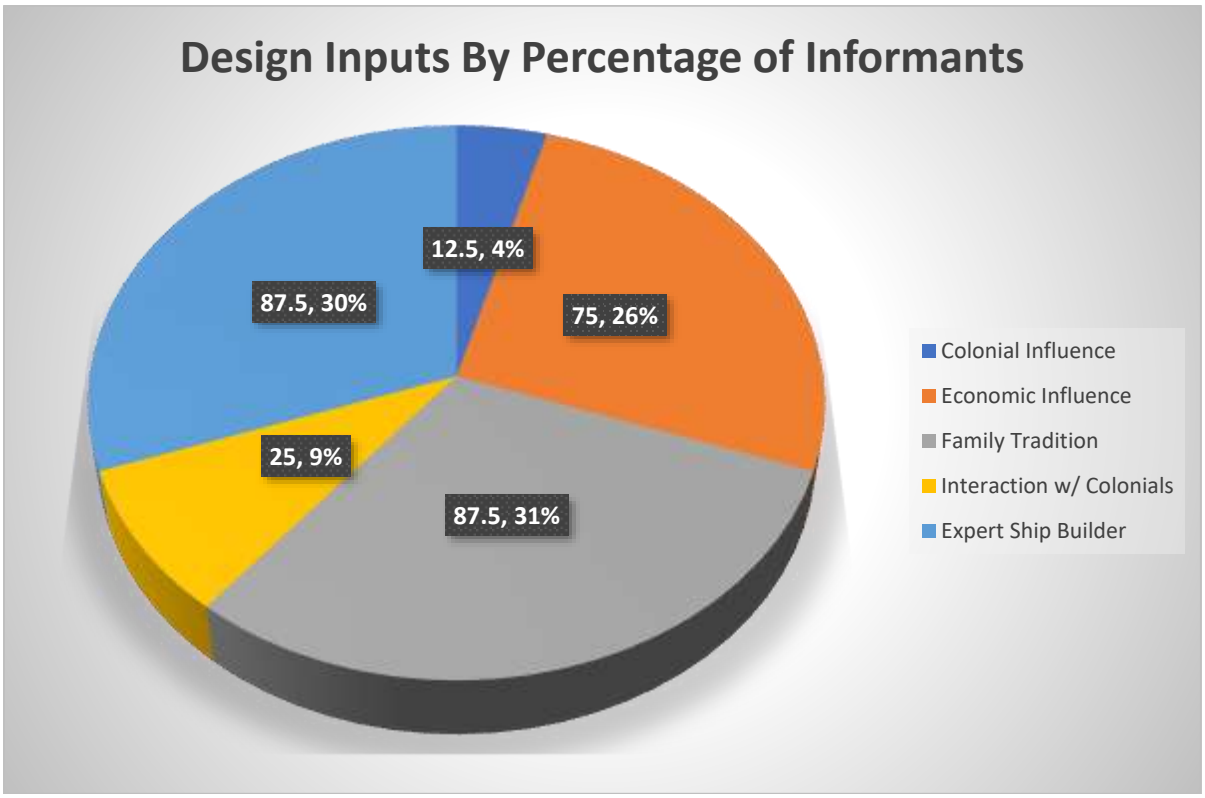

Table 5: Quantitative Comparative Analysis Pie Chart

II. Archaeological Component

The archaeological section consists of primary accounts of construction processes, vessel construction components, watercraft employment and fishing technique, and gear production. As indicated in the data log, there are 1,023 photographs and 225 videos documenting the above listed processes. As the research effort progressed and inevitably evolved, the ethnographic element became the primary focus. An extensive literary record already exists discussing the archaeology of Tanzanian vernacular watercraft and this research effort is intended to initiate further investigation into the indigenous perspective primarily through ethnographic means, not reiterate established observations. As to not detract from the ethnographic focus of the research questions, the archaeological component consists of a brief synopsis of observations which have

yet to be recognized academically in the hope of inspiring future research projects.

A preliminary record of vernacular watercraft within the Tanga region is present within the attached appendices. Included are a sampling of the total scaled photographic record (Appendix A), a collection of *sapa* nomenclature (Appendix B), artisinal models of *daus* (Appendix C), a glossary of regional KiSwahili maritime terminology (Appendix I), and site maps of the boatyards surveyed in both Tongoni and Pangani (Appendix K). The majority of the recorded field notes recorded focused on the construction processes of the ocean-going *dau* being built by *Mfundi* Muddi in Tongoni Village and the discussions concerning vessel maintenance and reuse with assorted apprentices in the Tanga Region.

Tongoni, Mwarongo, and Saadani proved the most productive survey sites in the Tanga Region as the boatyard in Pangani acted mainly as a repair depot with no resident *mfundi*. The smaller, rural villages were far more accommodating, and a bond was easily established through conversation and the sharing of meals. Through observation and interrogative, it is possible to gain a greater appreciation of what makes the indigenous watercraft of Tanzania and the Tanga Region worthy of further investigation.

a. Tongoni Village Boatyard (5º 12’ 54” S / 39º 3’49” E)

The village of Tongoni is situated along the shoreline, less than a kilometer from the Tongoni ruins of international fame. Constructed in the thirteenth to fourteenth century entirely of local corals, the ruins were abandoned in the fifteenth century and now stand as a national heritage site under investigation by Dr. Elianza Mjema and his graduate students from the University of Dar es Salaam. Consisting of a former mosque and WaSwahili tombs, the ruins are situated upon a hilltop overlooking the waterway and Tongoni village, seventeen kilometers south of the city of Tanga. According to Dr. Mjema, Vasco DeGama made a rest stop in Tongoni

at the close of the fifteenth century and one of his vessels was wrecked upon its shores. The locals provided oranges, no doubt critical in the fight against scurvy. Evidence of international trade is still being uncovered in the ruin's vicinity. Upon arrival, Dr. Mjema's team had recently uncovered a smelting furnace and numerous small nails from the post-Swahili era. On the outskirts of the village itself, the graduate students had located and surveyed a nineteenth century sacrifice of a *ngombe*, or cow, and interpreted the remains as possible evidence of a *dini ya asili*, or "natural religion" offering. Both sites could potentially establish important links to a long-standing maritime tradition of vessel construction and its connection to the indigenous natural belief system as it perpetuates today.

Figure 24: Tongoni Ruins, Tonogoni Village, Tanga Region (Photograph by Madeline Roth)

Tongoni village, as mentioned previously, was a maritime microcosm, in that it relies entirely upon the local waters for economic gain, is greatly self-sufficient, and has little contact with larger developed areas further inland because of a lack of vehicles and the rough condition

of local roads.

Within the village itself, *Mfundi* Muddi had created a boatyard (Appendix K) to construct the vessels as ordered by both Tanzanian and international customers. *Mfundi* Muddi had been constructing vernacular watercraft for over twenty years and incorporating knowledge from not only Tanga, but Mozambique and Mombasa, Kenya as well. He stated he is widely known for his construction abilities and has trained many young men as apprentices. He attended a primary training school in Zanzibar where after four years he was vetted and allowed to work independently. *Mfundi* Muddi reiterated numerous times that he loves his work and it has proven a very effective means of supporting his family. His father had been the captain of ocean-going vessels all his life, and this was a significant influence upon *Mfundi* Muddi and his desire to perpetuate his family's maritime heritage.

Figure 25: *Mfundi* Muddi, author, and interpreter discuss vessel construction at the Tongoni boatyard (Photograph by Madeline Roth)

Mfundi Muddi provided a great deal of information regarding construction materials and how to source them. He uses different types of wood depending on the vessel being constructed,

its intended use, and the demands of the established budget. Construction wood types included *mkaratusi*, *minga* (very rare and only found in the Mtwara region of Tanzania), and *tiki* (teak). He initially lays the keel whose dimensions are determined by the type of work the vessel is to perform. The keel, or *mkuku*, is hand formed with the adze from a single felled tree and laid upon grooved stumps to hold it secure. Next, the *fashini*, or stem and stern posts, are hand formed and emplaced upon the keel. These are secured, in combination with knee posts, or *betana*, by hand with large lag bolts and nuts. The lag bolts and nuts are machined precisely and appeared commercial, while the nails are hand forged and sourced locally. Before emplacing any frame timber, *Mfundi* Muddi lays the garboard strake and secures it into the rabbet using rope to apply continuous tension as the frames are secured.

Figure 26: *Mfundi* Muddi forming the *betana*, or knee after securing it to the *fashini*, or stem post with a machined lag bolt, rabbet on keel visible, Tongoni Village Tanga Region (Photograph by Madeline Roth)

Figure 27: *Mfundi* Muddi secures the lag bolts of the sternpost on a large ocean-going *dau*, Tongoni Village, Tanga Region (Photograph by Madeline Roth)

At this point in the construction process the similarities to the bottom-based tradition of vessel construction become obvious. To form the hull shape he desires, *Mfundi* Muddi uses battens, also known simply as *mboa,* or wood, and emplaces the corresponding frame pieces, or *taruma*, to match the desired form. The frame pieces consist of hand-formed Y-frames, with the first being referred to as *ciari*, and the last as *halgam*. Using a thin piece of rebar, or *cheo*, *Mfundi* Muddi would dictate the form of the frame as demonstrated previously and trace the desired angle onto the selected timber. After forming the frame piece with the adze, he would place it upon the keel, ensuring it fit in the desired manner and that it was plane. He then would carve two notches at the bottom of the frame, known as *njia ya maji*, or "way of the water", thus

allowing the inevitable water accumulation to make its way to the rear of the vessel where it could collect and be discarded.

Figure 28: Scaled photograph of the *njia ya maji*, or waterway, seen on all Y-frames emplaced along the keel of the *dau*, Tongoni Village, Tanga Region (Photograph by author)

Figure 29: *Dau* with emplaced Y-frames, garboard strakes, and stern post with weighted arms for plank forming visible, Tongoni Village, Tanga Region (Photograph by author)

Figure 30: Author forms rebar guide for Y-frames and checks arm angle with *handi* under supervision of *Mfundi* Muddi, Tongoni Village, Tanga Region (Photograph by Madeline Roth)

Figure 31: Secured stern post and knee with braces, Tongoni Village, Tanga Region (Photograph by author)

Having emplaced the frames, secured the garboard strake, and finished the posts, *Mfundi* Muddi began to form the hull planking from roughly hewn local wood. In order to achieve the necessary curve to create the desired hull shape, he used a *kipindo*, or literally "device to turn". The *kipindo* consisted of large, heavy, split log used to hold and twist the plank over a small smoldering fire fueled by diesel or motor oil. The use of motor oil served a dual purpose, it heated the board enough to allow torque to be applied while also providing a protective layer to the wood itself in the form of the thick smoke adhering to the fibers. The torque was applied using wooden braces weighed down with logs and secured with nylon rope. The twisted planks were then placed against the frames and additional adjustments using the *kipindo* made until the correct form was achieved.

Figure 32: Hull planking being formed using *kipindo*, Tongoni Village, Tanga Region (Photograph by Madeline Roth)

Upon completion of treatment using the *kipindo,* the planks were fit checked and minor adjustments made with the bow saw, or a curved saw used to shape the leading edges of the board. Around the same point the hull planking was being formed and applied, *Mfundi* Muddi attached the formed transom to the rear of the stern post. The transom consisted of three thick planks attached horizontally and secured with lag bolts.

Figure 33: Manual tools used by *Mfundi* Muddi for construction, Tongoni Village, Tanga Region (Photograph by Madeline Roth)

Figure 34: Hand forged nails sourced locally, Tongoni Village, Tanga Region (Photograph by Madeline Roth)

The research team departed the Tanga region while *Mfundi* Muddi was still forming the hull and was not able to record the construction process any further.

Numerous other forms of maritime material culture were recorded during the research effort, including indigenous production of sisal ropes, fishing wiers, sail repair, and hull repair/maintenance. As stated in the methodology section, the continuing use of traditional forms of maritime craft production suggests the presence of the same cognitive models that have allowed indigenous vessel construction to survive to this day. Despite using select forms of imported modern technologies (petrol engines, GPS, fish finders, modern anchors), the vessels themselves are not only produced in the same manner as their forefathers constructed them, but the tools used for fishery harvest are also locally sourced. Additional examples of technological continuity were seen in the production of fishing weirs and sisal ropes for fishing nets mere meters from the boatyards themselves.

On Mwarongo Beach, local elders discussed the history of the fishing weir resting against a tree near the small *sapa* they were repairing. A local informant discussed how his uncle, an expert craftman, constructed the weirs in the same fashion as the indigenous people over a century ago. The traps typically lasted for three months and were designed for ocean use. Using rocks attached to the frame with sisal fiber as weights, the traps were baited with cut fish and placed in deep waters.

Image 35: Handmade fishing weir, Mwarongo Beach, Tanga Region
(Photograph by author)

Another form of traditional maritime craft production was recorded within Tongoni Village. Local women weaved sisal fibers in a braided fashion to create the ropes necessary to pull in the large fish seine nets the men used to haul the daily catch. These ropes, while incredibly abrasive, could be crafted to any desired length and proved incredibly strong during the fishing expedition in Mwarongo. The nets were deployed in the shape of a massive horseshoe, hundreds of meters away from the fishing crew at both ends. After the net was placed and allowed to settle, the men proceeded to use the locally sourced sisal ropes to manually haul in whatever sea life was captured in the net. The ropes were produced exclusively by the village women, just as the fishing was performed only by local men, though it demonstrated the all-

inclusive nature of the maritime lifeways of the Tanga Region and the necessity for all residents to work towards communal survival.

Image 36: Local women weave the sisal plant into rope for fishing net deployment, Tongoni Village, Tanga Region (Photograph by author)

While it is difficult to discern conclusively whether isolation plays a factor in the survival of traditional maritime craft production, two noteworthy observations seem to support the original hypothesis. Firstly, even in the rural fishing villages of Tongoni and Mwarongo, fishermen were using modern, imported petrol engines to power small *sapas* and skiffs. If it is possible for these villages to locate, purchase, and transport a 10-20 horsepower outboard engine as well as find fuel, then it is not outside of reason that they in fact have access to modern power tools, nylon rope, and steel fishing traps. Secondly, simple manual tools were being used to produce watercraft in both the small coastal villages and the large cities as recorded in Stone Town, Zanzibar. Despite having immediate access to customers and foreign technologies

(*Mfundi* Makame's boatyard was at the edge of a major highway in the center of town), the craftsmen in Stone Town constructed *sapas*, and *daus* in an identical manner using the same manual tools as the *wafundi* in remote fishing enclaves.

The entire process of manual fishing by the male population using large seine nets as well as *dau* sailing operations were recorded in both note and video form. Discussion of this data is curtailed to reinforce focus on the ethnographic element and the other areas of interest will be addressed in future journal submissions in the hopes of spurring further research.

Chapter 6: CONCLUSION

In summation, the ethnographic, historic, and archaeological data collected during the research expedition suggest that no significant European colonial design influence is evident in modern Tanzanian vernacular watercraft within the Tanga Region. The major factors influencing the dismissal of any European design inclusion reflect the horrific treatment experienced by the indigenous peoples under colonial rule, the continuance of the independent peasantry as a socioeconomic entity, the use of what resources are available to ensure survival, the dismissal of expensive and unnecessary modern construction technologies, and the communal protection of traditional lifeways as a cultural schema.

Resistance to colonial rule is demonstrated in two forms: violent insurgency against occupying forces and the passive resistance reified in traditional material culture. Colonial occupation by both imperial German and British forces was seen as a direct threat to the cultural fabric of the indigenous peoples of the Tanga Region. Despite the technological disadvantage, the people of the Tanga Region launched a guerilla war against foreign military forces armed with modern weaponry. Both the German and British abandoned their imperial possessions as a result of their inability to control, and refusal to understand, the unique peasantry that fiercely defended their long-standing traditions. The colonial overlords disrupted the agricultural economic model in an attempt to transform the occupied region into a resource center for global markets. Ignoring historical precedent and indigenous perspective, the European invaders primarily left only a legacy of underdevelopment and human rights violations.

The maritime culture in Tanzania and within the Tanga Region still centers around locally produced vernacular watercraft. Despite a recent reduction in the traditional international trade as a result of global security concerns centered on Somalia, indigenous watercraft production

continues in rural areas and historical strongholds much as it did before the incursion of European manipulation. Though modernization in the form of petrol engines and GPS navigation have become commonplace, the vessels are still built using the same construction techniques, materials, and tools that have existed for centuries. The only instance of any form of colonial influence stems from the inclusion of modern speedboat hull design into the vessel typology, stemming from the need to expedite transportation for tourists and to avoid attack by modern pirates.

Image 37: Traditionally constructed speedboat, or *mgwanda*, Stone Town, Zanzibar (Photograph by author)

Image 38: Hull detail of *mgwanda*, illustrating its sleek profile and the use of concrete to cover nail heads, thus reducing drag, Stone Town, Zanzibar (Photograph by author)

Image 39: Interior of *mgwanda* from the stern, displaying traditional framework including hand hewn Y-frames and riders despite modern hull design, Stone Town, Zanzibar (Photograph by author)

Image 40: Topside of *mgwanda* from stempost, illustrating covered cargo hold as seen on modern speedboats, Stone Town, Zanzibar

Though these speedboats share the lines of foreign watercraft, their construction mirrors that of all forms of traditional Tanzanian vessel in that they are built using the same bottom-based design philosophy and materials. Even when compared to the commercialized areas within Zanzibar, every location surveyed shared the same perspective regarding colonial history and cultural identity, a unilateral rejection of colonial influence within any aspect of traditional watercraft construction. Despite recent national independence and whims of an ever-expanding global market, the boatyards of Tanzania remain active.

In addition to dismissing any form of colonial influence upon Tanzanian maritime culture, the main objective of the research project is to begin the establishment of an indigenous perspective through ethnographic research. While preliminary conclusions were introduced using a limited sample, the true nature of European colonialism upon the East African perspective

should be redressed in the form of a longer, more comprehensive study. Multiple research avenues have been introduced and the viability of such an effort is undeniable in consideration of the plethora of information collected in just three weeks with only limited funding. A multi-month collection effort focused on rural, undeveloped boatyards would provide a greater understanding of Tanzanian watercraft design and how it reached the modern form seen today.

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- Transcription assistance provided by Transcript Panda and the University of Dar-es-Salaam, Arcahaeology Dept. under the supervision of Dr. Elianza Mjema

- APPENDIX A: Field Research Images


(Photographs by author)

(Photographs by author)


(Photographs by Ian Harrison and author)

(Images by Ian Harrison and author)

APPENDIX B: KiSwahili Labels for *Sapa* Construction Features

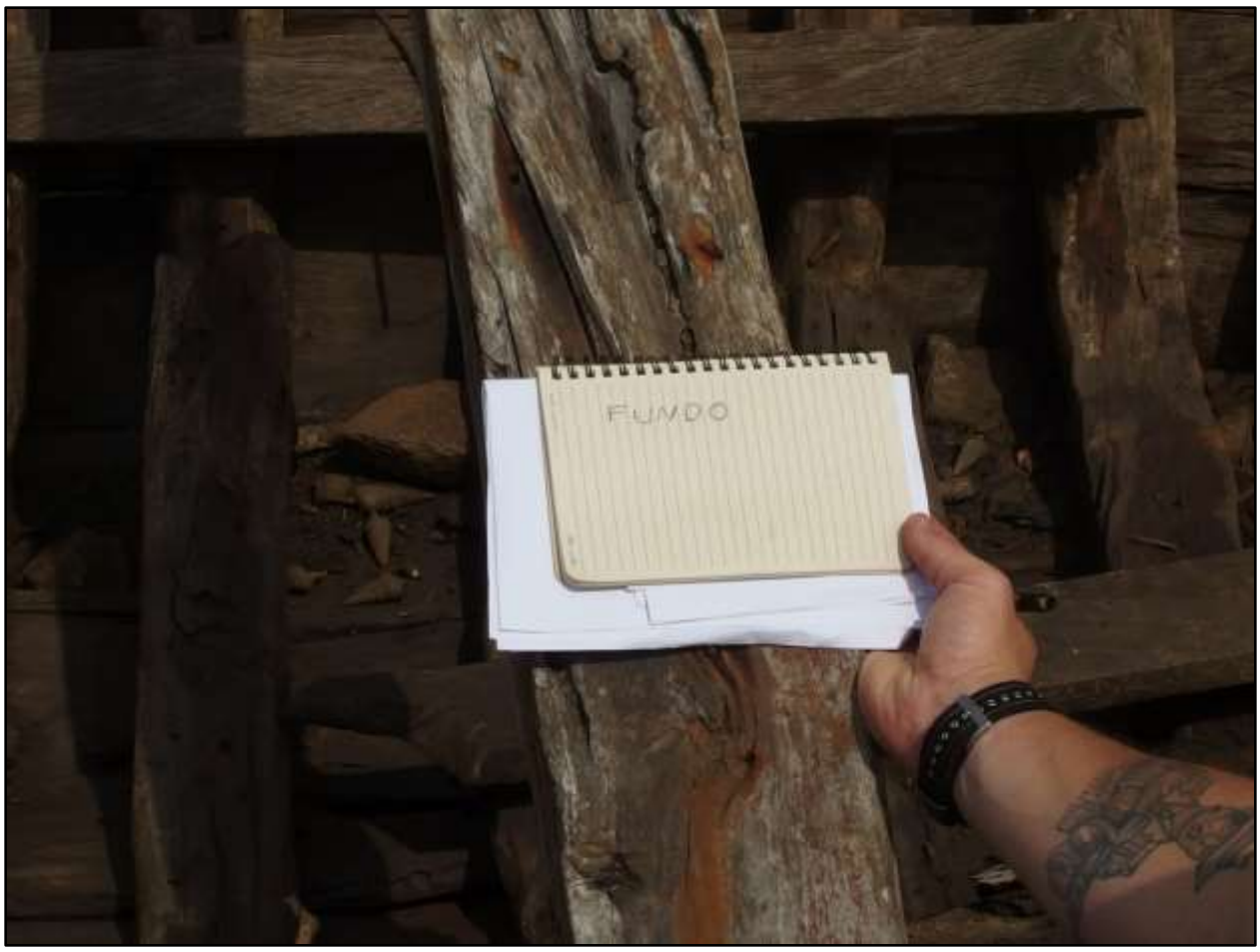
Discarded *sapa* used for nomenclature recording, Tongoni Village, Tanga Region
(Photograph by Madeline Roth)

Discarded *sapa* used for nomenclature recording, Tongoni Village, Tanga Region
(Photograph by Madeline Roth)

Discarded *sapa* used for nomenclature recording, Tongoni Village, Tanga Region
(Photograph by Madeline Roth)

Discarded *sapa* used for nomenclature recording, Tongoni Village, Tanga Region
(Photograph by Madeline Roth)

Author indicating the *fundo*, or thwart, Tongoni Village, Tanga Region
(Photograph by Madeline Roth)



Author indicating the *fundo*, or thwart, Tongoni Village, Tanga Region
(Photograph by Madeline Roth)

Author indicating the *taluma*, or alternating Y-frame, Tongoni Village, Tanga Region
(Photograph by Madeline Roth)

Author indicating the *tampisi*, or inwale, Tongoni Village, Tanga Region
(Photograph by Madeline Roth)

Author indicating the *tampisi*, or inwale, Tongoni Village, Tanga Region
(Photograph by Madeline Roth)

Author indicating the *fashini*, or sternpost, Tongoni Village, Tanga Region
(Photograph by Madeline Roth)

Author indicating the *fashini*, or sternpost, Tongoni Village, Tanga Region
(Photograph by Madeline Roth)

Author indicating the *haligamu*, or half-frame, Tongoni Village, Tanga Region
(Photograph by Madeline Roth)

Author indicating the *haligamu*, or half-frame, Tongoni Village, Tanga Region
(Photograph by Madeline Roth)

Author indicating the *sayari* (planet), or half-frame component, Tongoni Village, Tanga Region (Photograph by Madeline Roth)

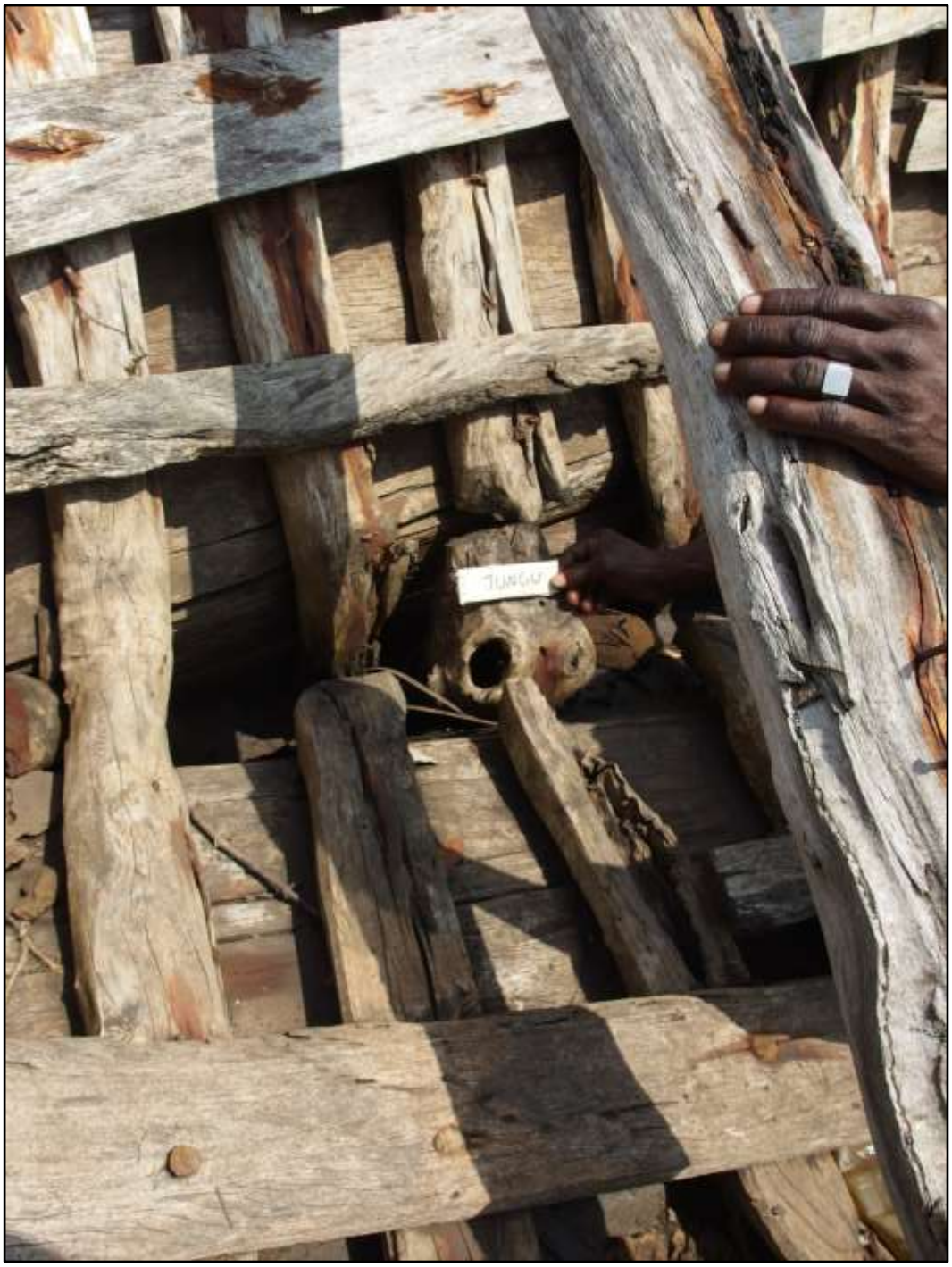
Author indicating the *sayari*, or half-frame component, Tongoni Village, Tanga Region
(Photograph by Madeline Roth)

Author indicating the *mbao wa kati*, or “wood in the middle”, Tongoni Village, Tanga Region (Photograph by Madeline Roth)

Author indicating the *mbao wa kati*, or “wood in the middle”, Tongoni Village, Tanga Region (Photograph by Madeline Roth)

Author indicating the *mbati*, or outwale, Tongoni Village, Tanga Region
(Photograph by Madeline Roth)

Author indicating the *jungu*, a stern keelson element, Tongoni Village, Tanga Region
(Photograph by Madeline Roth)



Author indicating the *jungu*, a stern keelson element, Tongoni Village, Tanga Region (Photograph by Madeline Roth)

Author indicating the *fashini*, or stempost, Tongoni Village, Tanga Region
(Photograph by Madeline Roth)

Author indicating the *rumada*, or gudgeon for rudder pintles, Tongoni Village, Tanga Region (Photograph by Madeline Roth)

Author indicating the *miryam*, or caulking, made of *pamba* (cotton), Tongoni Village, Tanga Region (Photograph by Madeline Roth)

Author indicating the *mkuku*, or keel, Tongoni Village, Tanga Region
(Photograph by Madeline Roth)

Author indicating the *ubao wa mariki*, or lower planking above garboard strake, Tongoni Village, Tanga Region (Photograph by Madeline Roth)

Author indicating the *kufuri* (lock), or the scarfed joint between the stem and the keel, Tongoni Village, Tanga Region (Photograph by Madeline Roth)

Scaled photograph of the *kufuri* joint, Tongoni Village, Tanga Region
(Photograph by Madeline Roth)

Author indicating the *ubao wa sayari* (wood of the planets) or lower hull planking towards transom, Tongoni Village, Tanga Region (Photograph by Madeline Roth)

Author indicating the *ubao wa samaki* (wood of the fish) hull planking section toward transom, Tongoni Village, Tanga Region (Photograph by Madeline Roth

APPENDIX C: Vessel Models by *Mzee* Dadi, Tongoni Village, Tanga Region

Handcrafted model of *jahazi* built by *Mzee* Dadi, Profile View, Tongoni, Tanga Region
(Photograph by Author)

Handcrafted model of *jahazi* built by *Mzee* Dadi, Plan View, Tongoni, Tanga Region
(Photograph by Author)

Handcrafted model of *sapa* with outboard, built by *Mzee* Dadi, Profile View, Tongoni, Tanga Region (Photograph by Author)

Handcrafted model of *sapa* with outboard, built by *Mzee* Dadi, Plan View, Tongoni, Tanga Region
(Photograph by Author)

Handcrafted model of *dau* built by *Mzee* Dadi, Tongoni, Tanga Region
(Photograph by Author)

APPENDIX D: *Dau* Recording Proforma

Location:

GPS Cord.:

Conditions:

Owner (description only, no names):

Age of vessel (appx.):

Brief vessel bio:

Description of design:

Overall length (LOA): _____

Overall beam (LOB): _____

Depth of hull: _____

Slope of bow measurements:

Profile View Drawing:

Plan View Drawing:

Wood type(s):

Fasteners/fittings:

Sails/materials:

Height of mast:

Special features (locale dependent):

Means of orientation/steering:

Number of crew:

Crew makeup/configuration (Ages, duties, hometowns, etc.)

Bilge or bungs (buckets, pumps, etc.)

Waterline upon hull:

Describe planking:

Describe rigging:

Scantlings:

Masts height and distance between masts:

Thwart length and width:

Damage location (type and reme

APPENDIX E: Outrigger Recording Proforma

Location:

GPS Cord.:

Conditions:

Owner (description only, no names):

Age of vessel (appx.):

Brief vessel bio:

Description of design:

Overall length (LOA): _____

Overall beam (LOB): _____

Depth of hull: _____

Slope of bow measurements:

Profile View Drawing:

Plan View Drawing:

Wood type(s):

Fasteners/fittings:

Sails/materials:

Height of mast:

Special features (locale dependent):

Means of orientation/steering:

Number of crew:

Crew makeup/configuration (Ages, duties, hometowns, etc.)

Bilge or bungs (buckets, pumps, etc.)

Waterline upon hull:

Describe planking:

Describe rigging:

Scantlings:

Masts height and distance between masts:

Thwart length and width:

Damage location (type and remedy)

APPENDIX F: Informant Survey Proforma

1. How do you describe your occupation?
2. How do you describe your family and their role in your occupation?
3. How do you view your boat?
4. What makes your vessel special or different?
5. How did you become a craftsman?
6. What stories have you been told about boats or other sailors?
7. How do you build a boat?

    a. What types of wood do you use?

    b. Where do you purchase nails or other metal hardware?

    c. What tools do you use?

    d. How do you preserve the wood?

    e. Are there government regulations about the size or design of your boat?

    f. Do you pay taxes on it?

    g. How many people help you build a boat and do they have specials roles or skills?

    h. Do you (or someone else) design it from a model or written plan? How do you measure dimensions?

    i. How many years does the boat last?

    j. What is the area that deteriorates first and why?

    k. Do women and children assist you in the building process?

    l. Is there a boat design that is more popular in the community depending on the environment or the purpose?
8. What traditions do you participate in that are connected to the boat(s) or the sea?

9. Can I see where you work? Is there a special area for boat building?

10. What do you know about the history of native boats?

11. How long have the men or women in your family fished/traded?

12. Do you know of any *Wageni* (foreigners) boat builders here?

13. Have boats that are made here changed in design? If so, how and why?

14. Where do you get your boatbuilding supplies?

15. Will you pass on your skills and to whom?

16. How often do you sail together as a crew?

17. Are all the sailors *WaTanzania* or do you use *Wageni* as well?

18. Can you show me places important to the life of an outrigger/*dau*?

19. What kind of emergency kits do you carry, if any?

20. Have you created any special tools or features to make work easier?

21. Can you describe how you perform work aboard the vessel?

22. Can you name important parts of the vessel for me in KiSwahili?

23. What are the dangers you face when working?

24. How do you dock or tie up with other boats?

25. Can you run the vessel aground on the beach, and if so, why?

26. Can you show me how to operate the sails?

27. How do you use the restroom aboard ship?

28. What are some health/sanitation concerns while underway?

29. What type of work do these vessels do?

30. Can you explain the construction process or tell me where to go to see it happen?

31. Are there any special rituals/beliefs that must be attended to before a trip?

APPENDIX G: Interview Transcripts (English and KiSwahili)

MAAH00021 Pangani 08-01-2017

[00:00:00.19]
Speaker 1: We used to construct that model and other types of models but all of them were speedboats. Each different from the other according to each person's individual taste. Not just one model.

[00:01:02.21]
Speaker 1: They come here to get us.

[00:01:06.22]
Interpreter: Are there other people from Tongoni who used to come here?

[00:01:08.20]
Speaker 1: To come to construct boats here? No.

[00:01:10.20]
Interpreter: Not even to come and learn?

[00:01:13.09]
Speaker 1: No, these days the youth are very lazy. They don't want to learn.

[00:01:18.25]
Interpreter: But in the old days they used to come here?

[00:01:20.16]
Speaker 1: In the old days yes, at their place we are alone, they just used to observe.

[00:01:26.03]
Interpreter: So, there is no relationship between Tongoni and Pangani?

[00:01:29.07]
Speaker 1: You mean in building these types of boats?

[00:01:31.29]
Interpreter: Yes.

[00:01:32.09]
Speaker 1: There is none. We are also different from Zanzibar. If you look at the boats we

construct and you compare with theirs it is different. For us when we see a certain boat which has arrived, we immediately know where it was constructed. You can know its origin from its design. For example, there are many boat builders in Lamu from the tribe of Wabajuni.

[00:02:32.02]

Speaker 2: How does that account for training in different areas because you are going to learn that style so if he is working in Mombasa and they have a specific style but when he comes down here he is going to carry some of the traits with that diffusion of the standards.

[00:03:07.14]

Speaker 1: I use to build this type boat called canoes or sailboats, these small types of boats. Each with its own distinct make. You cannot build them the same way.

[00:03:25.06]

Interpreter: Where were you getting the models from?

[00:03:30.14]

Speaker 1: You know artisanship is about being a creative thinker. You can build something and then you think that here I made a mistake, if I would have done it this way it would have been much better. For example, when building these speedboats, I want to install a18 horsepower engine or a 40 horsepower then I know that for this boat I will install a 40 horsepower and that it will be able to sail at a certain speed. Before taking it to the ocean, I understand if this type model that I am building will sail at certain speed. It is not just guesswork. You must sit down and reflect deeply about the design that is going to be pleasing. Will a person like this design? If you just build without giving it any deep thought, who will buy? You must design something that if a client sees it, then he will be pleased with it. This is business. Let me give an example of cars. There is Toyota but each with different designs but all of them are Toyota.

[00:05:39.00]

Speaker 2: But there is going to be like a mixture on the same boat so you are going to have whatever styles that you do that may be there is like, like these have **[00:05:49.08] [crosstalk]**

[00:05:59.07]
Interpreter: He is asking if you can mix the styles, that is, Zanzibar style or Pangani meaning can one boat have different styles.

[00:06:06.22]
Speaker 1: Yes, you “steal” in the business sense maybe you feel that people here will like a certain model. When you just see it, you can already know that if I do this.... There is a boat like let's say the canoe, you cannot compare it with these small sailboats and then you cannot take the small sailboat and build it like and inboard or outboard. Each requires its own unique model. You cannot take an outboard engine and tie it to a small sailboat that uses inboard engine. I mean that is big and it has more power

[00:07:05.29]
Speaker 2: That's what I was asking...

[00:07:10.18]
Speaker 1: I never built a fibre (fiberglass) boat like these ones like I earlier said. Each boat that I built had its own unique design

[00:07:33.22]
Interpreter: What was the first style of boat that you saw when your father was teaching you?

[00:07:53.10]
Speaker 1: In those days there were no these special types of boats made of fibre or plywood. There were none.

[00:08:02.24]
Interpreter: It was just canoes

[00:08:03.21]
Speaker 1: There was none. It was only canoes and these kinds of sailboats.

[00:08:12.28]
Interpreter: And what kind of boats did the white men come with during the colonial era?

[00:08:19.06]
Speaker 1: I have worked in an inboard engine boat. It used to pull barge (tishali). Do you know “tishali”? It is like a sailboat but made of galvanized sheet. It is packed with cargo so and is normally loaded with cargo and then tied to a ship. It had an

inboard. But it used also to be built here. It just came and I saw it being used as I was working there.

[00:09:02.12]
Interpreter: It is said that Arabs came with sailing ships, dugout canoes, and boats?

[00:09:07.27]
Speaker 1: There were no canoes among the Arabs. It was sailing ships and boats with horns, they were relatively small and used to sail using oars to the sail ships.

[00:09:48.29]
Interpreter: And the period when Arabs were doing business hadn't arrived, hadn't it? The Europeans came about the 1930s, 1940s, or in the 1950s.The Europeans came here to colonize us. The first ones to come were Germans. What mode of transport did the Germans use to come here?

[00:10:19.24]
Speaker 1: They had their own boats. Even one boat I hear capsized at Mlangoni during the war. I only heard about it. I only found that it had sunk. It was on its way from Germany bringing arms here.

[00:10:36.12]
Interpreter: It sank there (gesturing the direction)

[00:10:37.04]
Speaker 1: Yes there, one was here and the other one was in Tanga. They have now removed the wreckage. But anyway, they had their own boats made of steel.

[00:10:56.17]
Interpreter: Was it using wind power?

[00:11:00.22]
Speaker 1: They were using paddles. It was not like the modern-day engines but I think they were being powered by water (steam).

[00:11:24.14]
Interpreter: First World War or Second World War?

[00:11:26.18]
Speaker 1: I just heard of the war. I was not yet born.

[00:11:29.26]
Interpreter: Second World War?

[00:11:31.01]
Speaker 1: I was there during the Second World War in 1939.

[00:11:41.22]
Speaker 1: There were a lot of Germans. They stayed here for a very long time.

[00:11:51.12]
Interpreter: Their graves are on that side, aren't they?

[00:11:52.24]
Speaker 1: Yes. These days people have broken into them. They have destroyed them

[00:11:59.01]
Interpreter: Why? Is it because there is no proper management?

[00:12:00.27]
Speaker 1: There is no management. People just come to dig down thinking they can find may be rupees.

[00:12:18.19]
Interpreter: What is the name of the German boat that sank? Was it big or small?

[00:12:26.06]
Speaker 1: Averagely, big like from here to there (pointing with finger) but I do not know its name. It's my father who narrated to me about the boat.

[00:12:56.06]
Speaker 1: They used to come with a ship here from Germany.

[00:13:02.19]
Speaker 1: To come and load cargo. There were no vehicles during those days.

[00:13:07.24]
Interpreter: Only water transport?

[00:13:10.07]

Speaker 1: Only small car like about half to about one tonne vehicle when they get cargo. They would go to sisal farms, they bring the cargo there and load them and transport them away to Tanga.

[00:13:25.16]
Interpreter: But is boat business is still going on?

[00:13:28.03]
Speaker 1: No

[00:13:30.08]
Interpreter: Because of engine boats?

[00:13:32.02]
Speaker 1: Not because of engines but because of peoples' laziness there are no boat builders.

[00:13:49.22] [00:13:56.08] [inaudible]
Speaker 1

[00:14:32.18]
Interpreter: He is asking about your education.

[00:14:37.11]
Speaker 1: There was no education during those days. I went to a school in Pangani and the last school in Dar-es salaam and that is it.

[00:14:44.12]
Interpreter: Did you learn your craft from your father?

[00:14:48.22]
Speaker 1: That is where I started and then I worked in different factories. I have worked in Kumamtoni [**00:14:56.07] [unintelligible]** they closed schools for grinding coconut fibre which was then exported. I also worked as repairman for a machine that was used to make processed fibres of coconut husk, which was eventually exported. I have worked in all those industries.

[00:16:27.14]
Speaker 1: Pangani was very good

[00:16:42.27]

Speaker 1: They have destroyed a lot of our historical things

[00:16:58.17]
Speaker 1: At the tail end of the colonial period boat business was good. Even Major Grant opened another factory. Even sisal business started in Pangani.

[00:17:19.06]
Speaker 1: Sugar production started in Pangani.

[00:17:34.12]
Interpreter: Was it during the colonial period by the Germans?

[00:17:35.18]
Speaker 1: Yes

[00:18:10.29]
Interpreter: Why did boat business reduce after getting independence?

[00:18:17.16]
Speaker 1: Many things did go down not only boat business

[00:18:24.03]
Interpreter: After independence?

[00:18:25.02]
Speaker 1: Yes

[00:18:30.01]
Speaker 1: Even produce from large farms.

[00:18:54.08]
Speaker 1: Even [00:18:54.08] [Inaudible]. There are only a few left. There are only a few left

[00:19:00.22]
Interpreter: I have seen up there [xx] (showing by hand)

[00:19:03.21]
Speaker 1: [00:19:03.21] [Inaudible] Kibagu

[00:19:08.07]
Interpreter: Who owns it now?

[00:19:17.03]
Speaker 1: Europeans. There is even one farm and another one there.

[00:19:27.02]
Interpreter: Is this is a river?

[00:19:28.26]
Speaker 1: This river goes up to Moshi

[00:19:38.20]
Speaker 1: This river flows up to the Pangani coast

[00:19:43.09]
Interpreter: Far ahead there is the ocean?

[00:19:44.18]
Speaker 1: Indian Ocean

[00:19:47.20]
Interpreter: So, does this river (Pangani River) go this way or that way?

[00:19:49.23]
Speaker 1: It goes this way.

[00:19:54.24]
Speaker 1: It goes through up to Korogwe, Mombo until Moshi

[00:19:58.15]
Interpreter: But there is no water way to Moshi

[00:20:03.16]
Speaker 1: No, there is no way because far ahead there are boulders and rapids

[00:20:39.10]
Interpreter: Can you also build a wooden boat?

[00:20:41.17]

Speaker 1: I cannot build anything because my eyes cannot see anymore.

[00:20:50.05]
Interpreter: You used to build such boats back then?

[00:20:51.18]
Speaker 1: Yes.

[00:20:58.24]
Interpreter: Which tools were you using whenever you were building a boat?

[00:21:02.10]
Speaker 1: I used to use tools like [xx], carpenter's plane, saw

[00:21:12.08]
Interpreter: So, tools like a drill and all that kind of stuff

[00:21:14.29]
Speaker 1: Yes

[00:21:24.11]
Interpreter: That tool that is used for measuring scale

[00:21:27.00] [Unintelligible]
Speaker 1

[00:21:27.26]
Interpreter: No. This is a tool which has some numbers on it

[00:21:32.18]
Speaker 1: For making a mark?

[00:21:33.14]
Interpreter: Yes. What is it called?

[00:21:35.15]
Speaker 1: I don't know

[00:21:37.08]
Interpreter: You have forgotten

[00:21:41.14]
Speaker 1: I am not able to see

[00:21:52.11]
Interpreter: that is to show an angle that you have measured here (demonstrating)

[00:21:57.01]
Speaker 1: Yes, I know it. It looks like that

[00:22:00.01]
Interpreter: Yes. What is its name?

[00:22:01.25]
Speaker: I do not know its name but it looks like this (demonstrating)

[00:22:23.27]
Speaker 1: Did you ever use electric machines to plane wood?

[00:22:28.20]
Interpreter: Electric machine? No. It did not exist then.

[00:22:34.08]
Speaker 1: What about in these modern days?

[00:22:59.25]
Interpreter: Colonialism changed so many Swahili things, because if you guys used to have boats during those days and when the Europeans came with their boats, you guys started liking them more than your local stuff.

[00:23:13.05]
Speaker 1: No

[00:23:15.02]
Interpreter: Or Africans did not have many boats?

[00:23:17.22]
Speaker 1: Yes, they had but now you see when all the work ended. What purpose would the boats have served? Back in the old days one would use boats to receive goods or to transport cargo to Zanzibar or Tanga. Nowadays nobody will use a boat to

transport cargo or passengers to Tanga as it was in the old days. Nobody will board a boat they fear they will immediately capsize.

[00:23:40.12]
Interpreter: Those boats used to carry hemp?

[00:23:43.18]
Speaker 1: That ship?

[00:23:44.15]
Interpreter: Yes

[00:23:46.04]
Interpreter: Which factory were they being transported to?

[00:23:50.26]
Speaker 1: That hemp?

[00:23:51.11]
Interpreter: Yes

[00:23:51.27]
Speaker 1: There was a factory and a farm there. There used to be a road going this way, (pointing) that was a road for bringing the shipment. It leads there. And then this side there is a railroad. They bring it there and then to Abushiri on the other side, then a ship would come to carry them

[00:24:13.21]
Interpreter: Did you find Mr. Abushiri Bwana Heri?

[00:24:15.18]
Speaker 1: No

[00:24:21.16]
Interpreter: But his lineage continues up to today?

[00:24:22.29]
Speaker 1: No

[00:24:24.01]

Interpreter: It is all lost.

[00:24:30.18]
Speaker 1: Yes. He never had a wife neither a child. His house is still there up to today.

[00:25:34.15]
Speaker 1: Have you seen his house?

[00:25:35.12]
Interpreter: Abushiri's? Where is it?

[00:25:37.11]
Speaker 1: It is there in Abushiri. This other Abushiri is still there in Abushiri.

[00:25:46.24]
Speaker 1: He was hanged by the colonialists.

[00:26:40.16]
Speaker 1: **[00:26:49.13] [Inaudible]** In the middle there where it is called Abushiri, his house is on top of the hill overlooking the river.

[00:27:02.03]
Interpreter: What is the name of that other side (pointing)

[00:27:02.27]
Speaker 1: This side?

[00:27:03.26]
Interpreter: No, that side

[00:27:06.15]
Speaker 1: River Bweni is that side (pointing)

[00:27:10.26]
Interpreter: Are there also many people there?

[00:27:12.09]
Speaker 1: Yes

[00:27:15.11]

Interpreter: But are there boat making activities there?

[00:27:19.22]
Speaker 1: No, there is none

[00:27:40.13]
Interpreter: That period when Bwana Heri was fighting against Germany, which type of boat was he using?

[00:27:45.25]
Speaker 1: There were no boats. He just walked. He just crossed here up to the other side (gesturing with his finger the direction)

[00:27:52.28]
Interpreter: You mean he just crossed!

[00:27:54.05] [00:27:57.20] [Inaudible]
Speaker 1

[00:29:11.05]
Interpreter: He means that during that period when the colonialists came the people of Pangani saw the colonialist coming with their own boats. Didn't they not want to build similar boats like those ones they saw from the colonialist because they saw that as a foreign tradition or not?

[00:29:24.25]
Speaker 1: No. The colonialist just came **[00:29:29.26] [Inaudible]**

[00:29:33.20]
Interpreter: For example, you mean from Tanga to this side of town they came by foot.

[00:29:37.25]
Speaker 1: Yes, long time ago there were no cars.

[00:34:36.05]
Interpreter: When boats were being built which boats were most liked by the people? Which model?

[00:34:47.04]
Speaker 1: It was just about changing those designs

[00:34:52.29]
Interpreter: What were they called?

[00:34:55.22]
Speaker 1: Well we just call them sailboats. For us a boat was a boat

[00:35:09.21]
Interpreter: Which style was most liked amongst the boats that you built?

[00:35:18.05]
Speaker 1: I made a boat that was about thirty to forty tonnes with an inboard but a big one was about 40 tonnes.

[00:36:18.00]
Interpreter: Have you mentored anybody now that you are old? Who is to inherit your boat making skills?

[00:36:21.28]
Speaker 1: No, it is not that I have refused but people do not have the desire to work. They are lazy. This one here (pointing) repairs vehicles and motorcycles**. [00:36:38.24] [Inaudible]** is my son.

[00:36:58.11]
Interpreter: But even the boat making is difficult. That is why they do not want to.

[00:37:00.08]
Speaker 1: Yes, it is difficult

[00:37:05.20]
Speaker 1: We even did what was even more difficult those days than today because nowadays there are machines like the saw, electric drill. During our days everything was manual.

[00:39:26.27]
Interpreter: When was the last time you went to Zanzibar?

[00:39:31.00]
Speaker 1: I have not gone there. I only had a stopover at the airport on my way from Saudi Arabia and it was about ten minutes stopover and I was only inside the plane.

[00:39:40.26]
Interpreter: And Mombasa?

[00:39:43.13]
Speaker 1: I only went to Mombasa once to attend a funeral of my son who was schooling there

[00:39:47.19]
Interpreter: Did you notice if boat making was on the decline or on the increase?

[00:39:51.06]
Speaker 1: Where? Here or in Mombasa?

[00:39:53.16]
Interpreter: Mombasa.

[00:39:55.11]
Speaker 1: I think not and... I do not depend so much there…. because many people depend on sail ships where they pack cargo from Mombasa, Zanzibar, Pemba wherever they get a job here they come once in a while but...

[00:40:37.02]
Speaker 1: I think if there would be youth who are good at making boats people would have come but as I have told you many people do not like to learn.

[00:40:50.23]
Interpreter: Of course, the work is hard.

[00:40:52.25]
Speaker 1: But it is all about money.

[00:41:14.02]
Interpreter: So, you mean that we cannot find artisans around this place?

[00:41:17.01]
Speaker 1: For making boats?

[00:41:18.08]

Interpreter: Yes

[00:41:20.06]
Speaker 1: Artisans are there but these ones here are fake. If you want an artisan go to Zanzibar because all the ones you find here are fake.

[00:41:46.21]
Interpreter: We are grateful for **[00:41:46.27] [Inaudible]** so you can write your full name. Because he is a student, when he goes back to his university he has to show that he interviewed somebody.

[00:42:04.20]
Speaker 1: My full names?

[00:42:05.14]
Interpreter: Yes, your full names and signature.

[00:42:07.05]
Speaker 1: I can write my full names but I will have to do that by scribbling on the paper because I cannot see

[00:42:10.26]
Interpreter: That is okay. There is a big space here

[00:42:28.13]
Interpreter: And sign down here

[00:42:52.03]
Speaker 1: What is the purpose of that (pointing)?

[00:42:54.20]
Interpreter: It is important because he has to produce it in the university as evidence that he interviewed someone.

[00:43:26.03]
Interpreter: You can remain with this as evidence.

[00:43:30.04]
Speaker 1: Boat builders can be found in Mafia and Zanzibar

[00:43:44.10]
Speaker 1: Why are you looking for boat builders? Do you want to make a boat?

[00:43:48.17]
Interpreter: No, we just also want to interview them

[00:43:50.21]
Speaker 1: Okay

[00:43:52.04]
Interpreter: Do people travel from here to Zanzibar?

[00:43:54.25]
Speaker 1: Yes, you can find people using sailboats.

[00:43:58.18]
Interpreter: So, you do not have speedboats here?

[00:44:02.25]
Speaker 1: There is one but it comes from Zanzibar.

[00:44:05.16]
Interpreter: Everyday?

[00:44:06.04]
Speaker 1: There is only a normal boat. There is young man who transports people. If you take his name and ask for him there you can find him there. He is an Arab.

GOPR1074 Stone Town 08-13-2017

[00:00:02.22]
Mfundi: That is why that guy that comes here. He is from the Chaga tribe. He buys everything [Points] and packs them in the badly-maintained vehicles, and then he goes to make furniture. So, we used to wonder what he does with these [INAUDIBLE], now he has made their prices to shoot up.

[00:00:28.17]

Interpreter: Because he is saying that tourists want to sleep on beds made of the dhows.

[00:00:36.03]
Ryan: Is there a legislation governing the size and style of a boat; basically, a law governing the design of a boat.

[00:00:46.20]
Mfundi: No, there is none.

[00:00:47.23]
Ryan: That is big or small size depending on where they are going to sail.

[00:00:51.25]
Mfundi: No. You can go anywhere with it.

[00:00:55.10]
Interpreter: No, he means that from these boats you have made, are there limitations as to size of boats and where they can sail?

[00:01:02.16]
Mfundi: No.

[00:01:05.17]
Interpreter: So, it means you can even sail in big oceans with these. [Points]

[00:01:07.19]
Mfundi: We can go anywhere Pemba Mombasa.

[00:01:20.26]
Ryan: Are you required to pay taxes on the boats?

[00:01:23.14]
Mfundi: Here we pay annually.

[00:01:30.14]
Mfundi: No, when you have finished. Like this one, if I want to set sail to Seychelles, they measure the length, width, and its weight. Then I pay. And then I, as the captain of the boat, must have a licence. The sailor, too, must have a licence. The boats also have number plates like cars. Then it has your name. My name is Shaibu. So, it is called Shaibu.

[00:04:04.04]
Interpreter: It is about the illegal smuggling business.

[00:04:19.26]
Ryan: Did you or did you not get a name on the boat? Is that you come up with a special name for different boats? Like, the name of this boat I am sitting is Julius. Isn't it?

[00:04:39.09]
Mfundi: And [Points] this one is Shaibu.

[00:04:45.13]
Interpreter: So, you can call it a different name?

[00:04:45.28]
Mfundi: Yes, you can call it a different name, because it is the owner who normally decides what name to give.

[00:04:58.27]
Mfundi: So, that in case of an emergency you can be able to identify whom it belongs to.

[00:05:25.25]
Interpreter: To whom are you registered to here?

[00:05:28.27]
Mfundi: We register with municipality.

[00:05:36.24]
Interpreter: Is it just any municipality? You mean there is no special unit with a specific name? For example, like the Association of Fishermen, Association of so-and-so.

[00:05:47.12]
Mfundi: No, we go to register because we are [INAUDIBLE 00:05:53.26] You see, we go to register at the municipality, since the waters is in their area. So, you see, with these vessels, there is a licence for the area and licence for the vessels. For the boat licence we go to fishery. This area, that is, the surroundings we are in belongs to the municipality.

[00:06:55.20]
Ryan: Do you first design the boat on paper or it is just in your mind?

[00:06:59.23]
Mfundi: Nowadays I just use my head.

[00:07:04.21]
Interpreter: Because you are now experienced?

[00:07:05.18]
Mfundi: Yes, I am experienced.

[00:07:04.29]
Interpreter: So, there is no need of using designs from a book.

[00:07:09.22]
Mfundi: For example, this one here I use local tools. 19 of these [Gestures] is equivalent to 30 feet. That is approximately seven or eight metres. So, we know those measurements. We just use our brains.

[00:07:43.01]
Ryan: Do you use tool like "handy" to measure angles?

[00:07:53.02]
Mfundi: No. We use this metal rod. I will show you.

[00:08:43.15]
Mfundi: Now this is used to measure like this. [Demonstrates] Then for orbit shape, you bend it like this. [Demonstrates] Then you get… [Gestures] You understand?

[INAUDIBLE 00:09:05.29]

[00:09:09.21]
Mfundi: There are people who use [INAUDIBLE 00:09:11.28], but for us, we have now sufficient experience. So, we use our eyes and these rods. So, when you are making these, [Demonstrates] you have to ensure that both sides are equal.

[00:09:22.26]
Interpreter: So, that one does not have specific measurement?

[00:09:24.17]

Mfundi: This one is a specific measurement. When you measure this side, [Demonstrates] you then turn and take it the other side.

[00:09:29.06]
Interpreter: So, what is its approximate length in metres?

[00:09:31.15]
Mfundi: To go this side, it is about 20 inches. This side 20 inches and that side 20 inches.

[00:10:07.26]
Mfundi: Only that now we also have to put this [Points] by using a tool used for making [INAUDIBLE 00:10:13.21]

[00:10:16.12]
Interpreter: What is it called?

[00:10:17.22]
Mfundi: Bridge. But in Swahili we call it "pima maji" (literally "measure water level").

[00:10:32.04]
Mfundi: Now this one here [Picks up object] is the new technology. We do not use it at all. But now we prefer to use this one [Demonstrates] so this one divides it equally [Demonstrates] and that is why you tie a string here [Demonstrates] like this.

[00:11:15.06]
Mfundi: You see now it is equal here. You see it is balanced. Here is the string. You see it is balanced. You see this one we had balanced it. Recently there are some drunken guys who came and hit it with a car, so we had to rearrange it again.

[00:11:53.22]
Mfundi: Now here after this [Demonstrates] it is like that space, it comes here directly. Now a long time ago we used to use "chalkbul." Now with the changes, today we now use chalk. "Blue malin" from India. Very special. You know Indians are very good at such type of work. They are experts. We have worked with them. We have seen them. They are very experienced in this work.

[00:12:35.03]
Mfundi: And we build these ones ourselves [Demonstrates] from this one to this one. Then we remove it if we are going on a distant journey then put in a bag. A long time ago we just carried them without putting them in a bag. Nowadays we can put

them in a backpack and then go, [Laughs] so we are also advancing ourselves as the days go by. We are changing. Things are changing.

[00:13:15.02]
Ryan: What is the lifespan of a boat?

[00:13:17.08]
Mfundi: After every 18 days we raise the boat up, you know.

[INAUDIBLE 00:13:23.17 - 00:14:02.14]

[00:14:05.04]
Interpreter: And what colour do you paint this boat? Do you only apply varnish?

[INAUDIBLE 00:14:08.15 - 00:14:18.24]

[00:14:34.14]
Ryan: Do you know about foreign craftsmen in Tanzania?

[00:14:38.20]
Mfundi: Yes, from Mombasa, Mozambique, Somalia, but not Al Shabaab. Then there is from Comoro, East Africa, from the islands, from India of whom I have worked with, but now their number has reduced a bit. They come seasonally.

[00:15:37.03]
Ryan: Do they live near the city of Gao?

[00:15:41.07]
Mfundi: In India they come and then go back.

[00:15:47.03]
Mfundi: And then we go construct boats in the lakes, for example Lake Victoria, Mwanza, Lake Nyasa, Malawi, Tanganyika, which flows to Congo – basically, places with water.

[00:16:19.14]
Mfundi: Our expertise in short is unique. When we go there they are surprised because they use the nails for hitting the box, and also, they do not have big ones like this because we live in an ocean environment, so we are more advanced.

[00:16:55.25]

Mfundi: They come to pick us from here to go and work for them and when you go there it may be difficult for them to let you go because for them they are more concerned with travelling.

GOPR1074 Stone Town Swahili 08-13-2017

[00:00:03.11]

Mfundi: Ndio maana huyo jamaa enyewe anakuja hapa ni mchaga [INAUDIBLE 00:00:06.25 - 00:00:13.04] lakini ananunua yote anapakia ndani ya magari mabovu mabovu.

[00:00:19.03]

Interpreter: Aah anaende kutengenezea fanicha.

[00:00:20.10]

Mfundi: Ehh fanicha sasa sisi tulikuwa tunamuona huu mwarudia anafanyia nini sasa kafanya mpaka ikapanda bei sana, kwa sababu hakuna.

[00:00:28.17]

Interpreter: Kwa sababu anasema watalii wanataka kulalia vitanda vilivyotengenezewa kwa dau

[00:00:36.19]

Ryan: Kuna kama sheria kwa serikali kuhusu saizi ya boti au staili ya boti mpaka sheria kuhusu mfumu? Kubwa kidogo.

[00:00:52.00]

Mfundi: Kokote utakwenda nayo wewe mwenyewe tu.

[00:00:54.08]

Interpreter: Kwa hiyo hizi mnazotengeneza hamjawekewa limitation kwamba ikifika sehemu fulani aina gani ya chombo isiende maji fulani. Hakuna?

[00:01:02.16]

Mfundi: Hakuna.

[00:01:05.16]

Interpreter: Kwa hiyo mnaweza hata kuenda bahari kubwa na…

[00:01:17.20]
Ryan: Hamna…huhitaji kulipa taxes kwa boti kwa serikali.

[00:01:23.14]
Mfundi: Nalipa hapa tunalipa.

[00:01:26.28]
Ryan: Taxes ni kuhusu saizi au…

[00:01:30.27]
Mfundi: Sasa hiyo ukisha maliza, ngoja hiyo tunalipa kwa sehemu hii. Kama hii hapa nataka kuutia baharini na kwenda Fisheries. Wanapima urefu, upana, tani ngapi halafu unalipa. Halafu nikisha miye ambaye nitaendesha mimi kama ni kapteni na kuwa na leseni alafu na baharia yule sail anakuwa na leseni alafu inakuwa na numbers kama gari. Alafu inakuwa na jina lako, unaeza ukaita mi jina langu Shaimu. Unaweza ukaandika Shaimu.

[00:02:54.10]
Ryan: Na unaweza kuacha kama bahari sio nzuri kama smuggling, kwa sababu. [INAUDIBLE 00:03:03.16] wa serikali waliona boti acha uanona kidogo shida naweza kuona hapa kwa namba wewe siwezi kuendelea kazi yako basi [INAUDIBLE 00:03:22.09] Ni shida kubwa hapa au hapana kuna bahari [INAUDIBLE 00:03:25.26]

[00:04:04.07]
Interpreter: Mambo yale ya biashara aramu [INAUDIBLE 00:04:05.27 - 00:04:12.23]

[00:04:20.11]
Ryan: [INAUDIBLE 00:04:20.11] Ulipata jina kwa boti au hapana. Unaleta jina kwa boti special kwa boti tofauti tofauti au hapana kama boti hii niko ni Julius.

[00:04:44.10]
Interpreter: Kwa hiyo unaweza kuita jina tofauti?

[00:04:45.17]
Mfundi: Tofauti kwa sababu ya mmiliki. Mmiliki anauamuzi wake.

[00:04:59.28]
Mfundi: Ili unapopata emergency wakumkamata wajue hii boti ya nani.

[00:05:25.26]
Interpreter: Hapa mnaregister nini gani?

[00:05:28.24]
Mfundi: Hapa tunakwenda manispaa Manispaa tu yoyote? Hamna kitengo maalum kiinachoitwa jina kabisa kama shirika la wavuvi, shirika la nani vile mnavyoenda kujirejester.

[00:05:47.00]
Mfundi: Sisi tunaenda kujirejesta kwa sababu tuko katika mjini… unaona tunaenda kujirejesta kwa manisipaa. Manispaa ndio iliyochukua tuko katika eneo la mjini baharini. sasa tukisha hapo sasa hivi vyombo ushafahamu? Hiyo ni leseni ya eneo. Kuna leseni ya eneo na leseni ya vyombo. Kuna vitu viwili. Kuna leseni ya eneo, area leseni and leseni of boat. Hii tunakwenda Fisheries. Eneo hili mazingira, environment tunakwenda manispaa. Kwa hiyo kuna manispaa.

[00:06:52.11]
Ryan: Unatumia kama, kwanza unahitaji kuandika mpango kwa boti au kwa kichwa tu?

[00:07:01.03]
Mfundi: Sasa hivi natumia kichwa tu.

[00:07:05.00]
Interpreter: Madamu ushazoea?

[00:07:05.19]
Mfundi: Nishazoea.

[00:07:06.11]
Interpreter: Kwa hiyo there is no need kuchukua kitabu, kuangailia?

[00:07:09.14]
Mfundi: Kwa mfano hii hapa hii na tumia vipimo locally. Sasa hizi kumi na tisa sawasawa futi thelathini. Inaweza ikawa kama labda mita nane au saba. Kwa hiyo vipimo hivo tunavijua wenyewe. Tunatumia kichwa tena vipimo tunavijua.

[00:07:33.10]
Ryan: Pale umeona unajua endelea.

[00:07:43.06]

Ryan: Na unatumia kifaa tofauti kama labda handy kumesha angeli.

[00:07:53.03]
Mfundi: Hapana. tunatumia chuma hiki. Tutaenda kukuonyesha.

[Silence 00:08:05.21 - 00:08:39.18]

[00:08:43.14]
Mfundi: Sasa huu tunavyoupima huu. upande huu, tunaugeuza na huu all the same.

[00:08:56.01]
Ryan: [INAUDIBLE 00:08:56.01]

[00:08:59.21]
Mfundi: Halafu kwa sayari ndio unakuja kuupinda hivi ambao unapata unaona.

[00:09:05.26]
Ryan: Na hamna [INAUDIBLE 00:09:06.18 - 00:09:09.16]

[00:09:09.23]
Mfundi: Wako wanaotumia [INAUDIBLE 00:09:11.29] lakini sasa si tushakuwa na experience. Kwa hiyo kutumia macho na kutumia [INAUDIBLE 00:09:18.14] hivi kukutengeneza hichi lazima uwe yaani upande huu na huu uwe sawa.

[00:09:22.23]
Interpreter: Kwa hiyo hicho hakina vipimo maalum?

[00:09:24.17]
Mfundi: Hichi?

[00:09:25.00]
Interpreter: Hee.

[00:09:25.10]
Mfundi: Hichi kipimo maalum ukishapima upande huu unakigeuza unaupeleka upande huu.

[00:09:29.03]
Interpreter: Ndio mkikisia inakuwa mita ngapi?

[00:09:31.16]
Mfundi: Hapa… kuenda hivi? Inakuwa kama nchi ishirini. Upande huu nchi ishirini na ule kule nchi ishirini.

[00:10:07.20]
Mfundi: Isipokuwa sasa hivi [INAUDIBLE 00:10:08.26] kwa kutumia kifaa ambacho kinatumiwa kwa kujengea [INAUDIBLE 00:10:13.19]

[00:10:16.17]
Interpreter: Hicho kinaitwaje?

[00:10:17.22]
Mfundi: Hii ni bridge. Lakini kwa kiswahili tunaita pima maji.

[00:10:32.11]
Mfundi: Sasa hii ndio new technology vifaa hatutumii kabisa.

[00:10:35.12]
Interpreter: Huwa hamuvitumii?

[00:10:36.07]
Mfundi: Ndio lakini sasa hivi tumeona bora tutumie hii kwa hiyo huu unaugawa sawa sawa ndiyo maana unafunga uzi hapa namna hivi.

[00:11:16.04]
Mfundi: Inakuwa sawa sawa hapa.

[00:11:17.06]
Ryan: Kutafuta kama katikati ya mbao?

[00:11:18.22]
Mfundi: Ndio inakuwa inaonyesha sawa sawa uzi ndio huu hapa. Unaona? Ukiwa nayo unaikata sawa sawa. Inakuwa iko sawa sawa hivi. Kwa sababu hii ilikuwa tushaiweka sawa. Juzi bwana kuna watu amekunywa ametoka na gari wakagonga karibu tupangue tena. Akagonga ametoka juu. Ikabidi tuipange tena.

[00:11:55.07]
Mfundi: Kwa hapa sasa baada ya hii ndio kama ile space ile inakuja taruma moja kwa moja. sasa zamani tulikuwa tunatumia chalkboard, sasa hivi mabadiliko yanakuja tunatumia chokaa. Blue malin from India hii. Spesheli hii. Unajua wahindi ni

mafundi wazuri sana wa kazi hii. Kwa kazi hii ni mahodari sana. Tumeshafanya nao kazi. Tushawaona. Watu wanahesabu sana ya kazi hizi.

[00:12:34.29]

Mfundi: Na hizi tunatengeneza… kwanzia hii, hii, hii. Halafu unachomoa kama unaenda safari ya mbali, tunatia ndani ya begi. Sasa zamani tulikuwa hatuna… tunachukua vile vile sasa hivi vyote tunaweza kuvitia katika begi tukaweka mgongoni [Laughs] kwa hiyo tunatumia akili kila siku zikienda tunabadilika badilika.

[00:13:15.02]

Ryan: Maisha ya boti ni miaka ngapi?

[00:13:17.12]

Mfundi: Miaka… kwa kila baada ya siku kumi na nane huwa inapandishwa juu unajua [INAUDIBLE 00:13:23.13 - 00:14:03.12]

[00:14:05.04]

Interpreter: Ni rangi gani mnapaka hizi boti? Mnapaka varnish tu?

[INAUDIBLE 00:14:10.20 - 00:14:28.17]

[00:14:34.21]

Ryan: Unajua kuhusu mafundi wageni au watanzania tu?

[00:14:38.22]

Ryan: Wanakuja wageni kutoka Mombasa, Msumbiji, Somali lakini si Al Shabaab, watu wazuri [Laughs] halafu kuna Comoro.

[00:15:14.29]

Ryan: Mahali tofauti tofauti ndani ya Afrika mashariki.

[00:15:19.16]

Mfundi: Afrika mashariki na visiwa kama hivyo India lakini sasa hivi wamepungua kidogo. Wanakuja kwa msimu lakini hata India tushafanya nao kazi.

[00:15:37.04]

Ryan: Wanaishi karibu na jiji Gao ndani ya nchi ya India?

[00:15:41.25]

Mfundi: Wanakuja halafu wanaondoka. Alafu tunakwenda kutengeneza hivi kwenye maziwa… kwa mfano Victoria, Mwanza huko, alafu ziwa nyasa, malawi alafu kuna ile Tanganyika inataka kuenda Congo. Kwenye maziwa sehemu zenye maji.

[00:16:14.16]
Ryan: Mfumo ya boti ni sawa sawa au tofauti kidogo?

[00:16:16.29]
Mfundi: Tofauti. Sisis taaluma yetu kwa kifupi tukienda kule wao wanatushanga sisi. Na ni taaluma yetu… kwa sababu wao wanatumia misumari ile ya sanduku ya kugonga. Alafu vile vile kutengeneza kubwa kama hii… kwa sababu sisi tuko kwenye mazingira ya bahari kwa hiyo sisi tunakuwa zaidi.

[00:16:55.14]
Mfundi: Kwa hiyo wanakuja kutuchukua sisi huku tunakwenda. Na ukienda kule inaweza ikawa tena wakawa ngumu kukutoa kwa sababu wao wanafanya zaidi kwa usafiri.

[00:17:05.23]
Ryan: Ndani ya Congo ni kama mtumbwi tu ama dau ama [INAUDIBLE 00:17:08.20]

[00:17:09.17]
Mfundi: Sasa wao inakuwa vyombo vyao kidogo kwa hiyo wanaona sisi vyetu vina ubora. Kwa sababu boti kama ile pale ile mfano kama hiyo ya pande ndogo kwa watu wakitosha inaweza kuondoka na watu ishirini, ni twenty peoples. Mtumbwi unakuwa hauchukuwi watu watano sita halafu sasa kwa wanyama hatari. Mambas, crocodiles, snake.

GOPR11074 Stone Town 08-13-2017

[00:00:14.13]
Interpreter: Is that a lizard?

[00:00:17.24]
Mfundi: It is okay. It is harmless. They change their skin colour depending on environment they find themselves in. It is now changing to the colour of this grass [Points] and also the colour of these woods. It is daily life is just hiding under [Points] this place. But if you take it and take it to another place, it can change to be as white as this paper.

[00:00:48.07]

Interpreter: You also make outrigger canoes.

[00:00:51.03]

Mfundi: Yes, we also make outrigger canoes. We take a mango tree split it in the middle to create a hole and make them in a manner that they can balance well.

[00:01:21.22]

Mfundi: But now many people do not use them because they now want to use modern technology so when we talk specifically of outrigger canoes, for example here in Zanzibar many the outrigger canoes are found in Bumbwini. The Bumbwini people mostly use outrigger canoes.

[00:02:10.02]

Mfundi: We use fire to kill insects. We use car tyres like those ones there. We burn them and put them under and therefore use the smoke to kill the insects. Outrigger canoes still made traditionally made, and it is the only vessel that does not change, meaning that it is still made in the same old traditional way. It does not change. It is still the same old outrigger canoe. These ones here change. Because you can come here, I construct one for you where you may specify that you want one with a cabin, you want one with an internal engine or I want this and that, but for outrigger canoe, it is still the same simple old vessel. You only need wind to sail…

[00:03:33.24]

Interpreter: When you are on journey do you take emergency equipment which can be used in case a person gets into an emergency situation? Things like life jackets, needles. Do you construct your boats with emergency equipment?

[00:03:46.29]

Mfundi: Yes.

[00:03:55.12]

Mfundi: We nowadays use GPS for navigation. Long time ago these things were not available. We just used to observe the sun – that is, follow the sun. [Laughs]

[00:04:26.08]

Mfundi: And then at night, there is travel star. You follow the star.

[00:04:34.06]

Interpreter: Do you use the phone GPS, or you just buy the actual GPS device?

[00:04:38.13]

Mfundi: It depends on the expertise of the captain. There are some who use the phone, and some buy the GPS device. We even now use Fish founder. We are slowly advancing to new technology. But it is only the making of these boats that we have not changed. Navigation is the captain's responsibility but for me as a local person that does not bother me. It is the captain who sails deep into the ocean who is concerned with the use of GPS. He knows how many hours from here to Dar-es-Salaam. Those are the things that he is concerned with. He is not bothered about the strong winds in the ocean.

[00:06:03.15]

Mfundi: Now the iron wood we have told you about. You will die, and the boat will still be there. That will make a boat last for even 25 years. Teak last for about 15 years. You can always replace it when after its lifespan. But with Iron wood that is used in construction of bridges, it will last for a long time. In Kiswahili we call it *"Mwangaa."* It is not locally available. It is only found in the mainland, areas like Bagamoyo and Tanga.

[00:07:06.02]

Mfundi: Ahh! No, those are the majority. For example, blue gum. What do you call this? "Mkaratusi" (eucalyptus). We also use other types of wood, but that one is cheap. Some of its leaves are used in making perfume, some are put in sweets, and it also has a medicinal value.

[00:08:10.27]

Interpreter: So how many months does it take you to make them?

[00:08:13.10]

Mfundi: Like this one here, only one month for that dhow, it takes about six months.

[Interviewer handing documents to the interviewee for signature 00:08:21.14 - 00:10:11.16]

[00:10:11.04]

Mfundi: You can write your composition and bring it for me to mark, and when you come back I will make a small boat as a souvenir for you…

[00:00:13.16]
Interpreter: Huyu ni kijusi au ni nani?

[00:00:14.25]
Mfundi: Kijusi hana tatizo.

[00:00:19.15]
Interpreter: Hiyo rangi yake inatisha.

[00:00:23.08]
Mfundi: Hawa wanabadilika rangi kutokana na mazingira wanoaishi. Wanakuwa wanafanany na rangi ya haya majani na rangi ya hizi mbao.

[00:00:30.25]
Ryan: Hawawezi kufananisha…

[00:00:48.06]
Interpreter: Ngalawa, mnatengeneza ngalawa.

[00:00:51.10]
Mfundi: Tunatengeneza ngalawa tunachukua mti mwembe na tunauchimba kati tunatengeneza inakuwa na kenon mawili hapa.

[00:01:21.06]
Ryan: Chonga katikati alafu mfumo kabisa.

[00:01:23.24]
Mfundi: Lakini sasa hivi imekuwa ni watu wengi wanaukwepa kwa sababu sasa hivi wanataka wanakimbilia kwenye teknolojia. Kwa hiyo ngalawa kwa mfano hapa Zanzibar ngalalwa nyingi ziko Bumbuini watu wa Bumbuini wanatumia sana ngalawa, na mkokotoni.

[00:01:47.04]
Ryan: Niliona ndani ya Mwarongo na Tongoni.

[00:02:03.02]
Ryan: Unatumia kifaa au moto kutumia mwili ya ngalawa.

[00:02:09.27]
Mfundi: Ngalawa moto tunatumia kuwawua wadudu.

[00:02:17.01]
Ryan: Moto chini ya boti.

[00:02:22.29]
Mfundi: Na tunachukua matairi kama yale ya gari yaliyokuwa used. Tunatumia tunapiga chini yale kwa hiyo ule moshi wake unaingia wadudu wanakufa. Ngalawa haiko kilocal kizamani zaidi na ndiyo chombo ambacho hakibadiliki, yaani ufundi wake ni ule ule haubadiliki yaani katika ufundi ambao haubadiliki ni ule ngalawa ngalawa. Hivi tunabadilika kwa sababu hivi unaweza ukaja wewe nikakutengenezea ukaamua mi nataka unitilie cabin, unaona, mi nataka unitilie machine internal engine lakini ngalawa ni vile vile. Upepo basi.

[00:03:20.06]
Ryan: Kuna kama vile Je kuna kidogo kwa [INAUDIBLE 00:03:26.00] emergency kit.

[00:03:32.02]
Interpreter: Mnakuwa na, mkienda safarini mnachukkua vitu vya emergency mtu akipatwa na dharura yoyote kama like jackets sindano mnatengeneza kabisa ya kwamba hii ni boti llazima itengenezewe na emergency kit yake?

[00:03:55.19]
Mfundi: Kwa hivyo sasa hivi tunatumia GPS, tunatumia for navigation. zamani ilikuwa hakuna tunatazama jua tu. Unafuata jua.

[00:04:26.06]
Mfundi: Alafu usiku kuna travel start.

[00:04:34.03]
Interpreter: Hiyo GPS mnatumia ni ya kwenye simu au kifaa kabisa mnanunua cha GPS? Sasa inategemee yule nahodha taaluma yake. kuna wengine wanatumia simu wengine wanasema wanunua kifaa na tunatumia sasa hivi fish founder tunaanza kusogea tunaanza katika new technology. Isipokuwa sasa katika matengenezo ya hii maboti bado, hiyo ni kazi nahodha sasa, lakini mimi no mimi local. lakini sasa yule anayekuja kutaka kuenda huko baharini, kapteni, anajua how many hours from here to Dar es Salaam. Yeye anataka hivyo. Hataki kushangaa baharini mara kunatokea upepo mkali.

[00:05:51.22]

Ryan: Sehemu ya boti kwamba unaweza kufaa kwanza kama mkuku kufa kwanza au mbao hapa

[00:06:02.13]

Mfundi: Vizuri ule tuliokuambia iron wood ule ule utakufa boti yote uko ule at 25 years ule iron wood tiki baada ya miaka kumi na tano. Lakini ule unaweza ukafa boti uka have change ukatumia ule ule ule iron wood, ambao unatumika kwa mambo ya madaraja ambao kwa kiswahili mwangaa. Na huu haupo hapa huo upo bara tu. Kwa Mainland.

[00:06:39.01]

Ryan: Tafuta mangrove uko wapi hapa.

[00:06:40.14]

Mfundi: Mainland only Bagamoyo Tanga.

[00:06:45.03]

Ryan: Unajua green heart kama moyo ya kijana kama tiki kidogo african green heart unajua? Unatumia? Ni kama ironwood ni kama tiki.

[00:07:06.18]

Mfundi: Hakuna badala hizo ndio zaidi. zisipobakia tunatumia saa ingine mengine kwa mfano hapo huu mnono karatusi. Tunatumia miti mingine vile vile lakini hiyo ni cheaper.

[00:07:34.15]

Mfundi: Baadhi ya majani yake hutumika hata katika mafuta yale yananukia wengine wanatia katika peremende.

[00:07:56.03]

Mfundi: Majani yake yanatumiwa hata katika switi kwa ajili cofta.

[00:08:10.24]

Interpreter: Kwa hiyo mnatumia miezi mingapi kutengeneza?

[00:08:13.13]

Interpreter: Kama hii hapa mwezi mmoja tu.

[00:08:15.22]
Mfundi: Mwezi mmoja.

[00:08:17.19]
Mfundi: Lakini lile jahazi miezi sita.

[00:08:19.27]
Interpreter: Aah kutengeneza.

[00:08:21.12]
Ryan: Hapa ni barua kuhusu kazi yangu. Unaweza kuona niseme kwamba [INAUDIBLE 00:08:28.21] kutumia kuandika insha [INAUDIBLE 00:08:36.23] siwezi kuonyesha watu wote [INAUDIBLE 00:08:40.22] mini na wewe pia. Waweza kuandika jina lako hapa usaini hapa. Mimi naweza kukulinda. Ni muhimu sana.

[00:08:53.08]
Mfundi: Niandike hapa.

[00:09:00.18]
Ryan: Wewe ni mtanzania mimi ni mtanzania ya Amerikani kidogo wewe ni kama baba yangu tunashukuru sana sana.

[00:09:28.02]
Mfundi: Na pia boti…

[00:09:32.05]
Mfundi: Na nini tena. Na namba ya simu.

[00:09:35.23]
Interpreter: Jina tu.

[00:09:41.23]
Ryan: Niliandika insha nawezaku kuleta kwa kukuleta halafu unaweza kuona safi sana [INAUDIBLE 00:09:50.15 - 00:09:54.07]

[00:10:02.26]
Interpreter: Jina langu hii hapa eneo mliokuja kilazini Zanzibar.

[00:10:12.07]

Mfundi: Alafu unaweza kutengeneza maneno yako ya insha nikaja nikaona. Na mimi utakapo kuja tena atakaponiambia huyu nataka nikutafutie small zone nitakutengenezea special for table.

[00:10:30.24]
Interpreter: Afadhali kidogo.

[00:10:32.00]
Interiewee: Memory.

[00:10:34.26]
Interpreter: Nakukumbuka kabisa. swali moja pia kwa sababu nimesahau najua kama tako ya boti anatumia injini ya nguvu ni tofauti kwa boti unatuia pepo au sawa.

[00:11:03.21]
Ryan: Na unaweza kujenga magari pia kama kuonyesha kama [INAUDIBLE 00:11:06.21] hapa unaweza?

[00:11:14.04]
Interpreter: Safi kwa sababu nitarudi mwaka ijao kwa hiyo labda unaweza kwa mimi [INAUDIBLE 00:11:20.26 - 00:11:23.11] kwa sababu mimi ni mwalimu naweza kuonyesha mwanafunzi yangu sema hapa ni kwa mfundi [INAUDIBLE 00:11:32.05]

[00:11:33.19]
Interpreter: Ndio maana nataka nije [INAUDIBLE 00:11:34.19] utaanzia na hichi ametengeneza huyo fundi.

MAH00020 Stone Town, Zanzibar 08-13-2017

[00:00:01.22]
Speaker 1: We start from there and then we'll come here (pointing to the spot)

[00:00:24.10]
Speaker 2: Tell them about the tools that you use. Okay? Tell them about the technology too. Be very clear about it.

[00:00:46.00]

Speaker 3: Greet this guy.

[00:00:46.21]
Speaker 4: Hi! Brother! Welcome.

[00:00:48.23]
Speaker 5 Hi! How are you doing?

[00:00:50.21]
Speaker 4: I am doing fine. Aleikum Salaam?

[00:00:54.20]
Speaker 5: Salaam Aleikum Aleikum Salaam!

[00:01:00.27]
Speaker 4: I am grateful. How is it going?

[00:01:03.04]
Speaker 3: Very fine.

[00:01:04.19]
Speaker 4: That's fine.

[00:01:06.03]
Speaker 3: Right, thank you very much.

[00:01:07.26]
Speaker 5: Thank you!

[00:01:24.04]
Speaker 1: You add to the string. This is where we dry it. We then put in a square.

[00:01:33.15]|[00:01:36.19] [Inaudible]
Speaker 4:

[00:01:37.06]
Speaker 1: We also join parts, like this one here. You see this one here has been joined. We make sure we make the body with the log behind which is the rudder. So, this tree is Mahogany.

[00:02:06.14]
Speaker 4: Oh Mahogany, that's right.

[00:02:09.06] [incomprehensible]
Speaker 1:

[00:02:11.01]
Speaker 4: Okay okay. It is like *"Tiki"* or a bit different?

[00:02:13.28]
Speaker 1: This one below is *"Tiki"*. I will show you later the one I brought yesterday. Now this one is light for decking. In Swahili it is called "*mtondoo"* (African mahogany)

[00:02:24.26]
Speaker 4: Mtondoo.

[00:02:25.14]
Speaker 1: Mtondoo.

[00:02:25.19]
Speaker 4: This one.

[00:02:27.02]
Speaker 1: Yes. This piece is called Mtondoo.

[00:02:29.08]
Speaker 4: Mtondoo (Annunciating to practice)

[00:02:31.16]
Speaker 1: It is mainly found in Zanzibar. The fruit it produces are mostly eaten by monkeys. So, this has been planted specifically to provide food to the monkeys but again after looking closely at it. I realized that it is also appropriate...

[00:02:44.16]
Speaker 2: Red Colobus (type of indigenous monkey).

[00:02:44.05]
Speaker 4: What's it?

[00:02:44.23]
Speaker 2: Red Colobus.

[00:02:46.15]
Speaker 4: It is fruits.

[00:02:49.18]
Speaker 4: And these kinds of trees are mostly found in Zanzibar. It is rarely found in the mainland.

[00:02:56.24]
Speaker 2: It's only found in Zanzibar. They plant the trees only for purposes of providing fruits for the Red Colobus.

[00:03:00.15] [00:03:03.01] [crosstalk]
Speaker 1: And this is *"mtunda"*

[00:03:06.04]
Speaker 4: Ohh only for that okay wow!

[00:03:11.07]
Speaker 1: Another name for it is Neem (Mwarubaini) which is normally used as medicine. Now insects rarely eat this one. Why did I put it here? It is because insects do not eat it. It is for protection.

[00:03:25.08]
Speaker 4: So, you mean insects cannot eat it. That is to mean "Mtunda" is like food (Mtunda is the KiSwahili word for fruit).

[00:03:32.28]
Speaker 1: "Mtunda" is Neem which normally has a fruit that is very popular.

[00:03:37.21]
Speaker 2: I have forgotten what "Mwarubaini" is called in English, but I know it has an English name.

[00:04:02.08]
Speaker 1: And why was it called "Mwarubaini"? Because its leaves and bark are used for treating diseases like malaria. I boil the leaves and directly drink it and

immediately malaria goes away.

[00:04:37.20] [incomprehensible]
Speaker 4:

[00:04:39.22]
Speaker 1: This one here. This is Neem.

[00:04:43.05]
Speaker 2: You have said this is Neem and this one also Neem. It's all Neem.

[00:04:48.11]
Speaker 1: This is its log. We have converted it into a wooden board.

[00:04:51.11]
Speaker 2: It's cannot be affected with insects.

[00:04:55.26][00:04:57.04] [incomprehensible]
Speaker 4

[00:04:58.03]
Speaker 4: Now pass here, come here we shall come back. This is Mahogany.Come this side. **[00:05:17.02][Inaudible]** We call this "msani**" [phonetic]** "Tiki". Now this is of a foreign origin. It is originally from India. It was brought here and we planted it for purposes of preserving the environment.

[00:05:38.04]
Speaker 2: Neem comes from India?

[00:05:40.05]
Speaker 1: No, Neem is from here. It is only this one whose origin is not from here. There are others here we cut for building big dhows because all of us are artisans. I build dhows.

[00:05:56.09] [00:06:00.24] [Inaudible]
Speaker 4

[00:06:01.03] [00:06:05.10] [Inaudible]
[00:06:06.23]

Speaker 1: And it is this one here (pointing) we shall go down there. Then later we have another technique that we use with mangroves but they are not from here. We get them from mainland.

[00:06:19.11] [00:06:23.09] [Inaudible]
Speaker 4

[00:06:24.05]
Speaker 1: No, come, there also "Mwangaa". Relax. It is on this other side. This one here used in making bridges [00:06:42.07] [incomprehensible] no this is "Tiki".

[00:06:54.05]
Speaker 2: What is its name?

[00:06:55.03]
Speaker 1: This one? I don't know but it is like an iron tree, it is very strong wood. In Swahili we call it "Mwangaa"

[00:07:07.12]
Speaker two: "Mwangaa" [00:07:09.03][00:07:10.07][inaudible]

[00:07:14.23]
Speaker 1: Now this is Mwarubaini (Neem) "Mwarubaini"(Neem) medicine tree, Mwarubaini (Neem), Mwarubaini(Neem).

[00:07:22.16]
Speaker 2: And why do you use neem tree logs....

[00:07:24.14]
Speaker 1: Because they are not affected by insects and that is why we tie them with this steel. Now this can stay for up to fifteen years without any need for repair.

[00:08:03.13]
Speaker 1: Now this one here is "Mwarubaini" and this one here is Mahogany.

[00:08:14.19]
Speaker 2: **[00:08:14.27] [Inaudible]** Because they are strong, they can even survive up to fifteen years.
[00:08:22.15]
Speaker 1: Its name in Swahili once it has been cut is called "Taruma" (Beam or support).

But there are different types of supports. This one here is called “Hargamu” in Swahili.

[00:08:36.18]
Speaker 2: Taruma (Beam or support)? After cutting them to pieces…

[00:08:41.23]
Speaker 1: Yes. When we have cut them to pieces, then they are called “Hargamu” to mean that they are in the shape of a boat. They are called “Hargamu”. Now after these there are others called “Sayari” (planet/orbit). I will teach you about them. There are many Swahili names. “Sayari” you will learn it in English. Sayari also has its own shape. I will show you. Water passes here. Now this one here is Mahogany.This one here is very light. (Describing different elements of the dhow; refer to the Appendix)

[00:09:29.15]
Speaker 4: You know if there is has been a change of **[00:09:32.25] [unintelligible]** the boat from the old days up to today.

[00:09:37.01]
Speaker 4: You know these boats… We started these things from one tree ...

[00:09:45.24]
Speaker 2: He is asking you if this current style you use to build boats is the same style as the style used in the old days or if you have changed.

[00:10:03.20]
Speaker 1: We have not changed because we use the same old tools of which I will remove and show him.

[00:10:13.26]
Speaker 2: It is the same technology as used in the old days

[00:10:31.06]
Speaker 1: If it was foreign technology, it would then necessitate that we have machines here. Now here every work is manual. For example, as you can see that young guy there (pointing). Now all these works here have been done by hand.

[00:10:44.20] [00:10:48.02] [Inaudible]
Speaker 4

[00:10:50.23]
Speaker 1: Wait! We shall gather together all those tools for him to see. I shall gather everything so that he can see them.
[00:10:55.16]
Speaker 2: So the system is the same but the way you do work is different. Meaning that you do not use modern day tools but you use locally available tools.
[00:11:27.12]
Speaker 1: All these things you are seeing here are built manually...

[00:11:36.17]
Speaker 4: Like the drill.

[00:11:37.15]
Speaker 1: I will show you all those things… When we reach that side I will show you the drill. I have now shown you this style.

[00:11:57.14]
Speaker 4: This boat is like a dhow or somewhat?

[00:12:02.25]
Speaker 1: Okay, follow me. Now there is a difference between these woods. This wood comes from the mainland. We now use them. Initially we never used to use them.

[00:12:39.24]
Speaker 2: What is the name of the wood?

[00:12:41.17]
Speaker 1: Mnyanja.

[00:13:09.23]
Speaker 1: There is only one thing which has changed a bit concerning in the use of this of these vessels.We now use machine and sailor. Long time ago we used to use only the wind.
[00:13:46.26]
Speaker 4: Tiki and Mahogany are very expensive but Mnyanja is cheap?

[00:13:53.17]
Speaker 1: Yes, this one is cheap, but the other ones are expensive because they are firm and

strong. This one (pointing and hitting) does not last that long. The last for about to two to three years and that's it. May be you use paint or use [00:14:07.09] paint, but if you used traditional paint even in six months they can come out.

[00:14:20.22]
Speaker 1: Has he gone to the Islands? We use this in the islands for fishing. So, we tie the engine here, the tank here. So, if you want the steering you put a cabin there. Now there is a difference between "ngwanda" (a small boat used by fishermen during fishing) and this dhow. That is called "ngwanda" in Swahili.

[00:15:05.23]
Speaker 4: What is the difference between the two?

[00:15:08.01]
Speaker 1: These ones have great speeds (A vessel with traditional speedboat lines that are constructed in the traditional style but with a lacquer coating). It is a speed boat. It is very fast. It takes about one hour to move from here to Bagamoyo if you use a 50 horsepower engine.

[00:15:29.08]
Speaker 4: Speedboat is "Mgwanda" looks a bit more like a European style or is it Tanzanian?

[00:15:37.23]
Speaker 1: No, it is uniquely Tanzanian except when we only use a bigger engine. That engine is then the power and that is what makes it move with speed

[00:15:51.07]
Speaker 4: What are the functions of such a boat?

[00:15:54.23]
Speaker 1: Fishing and transporting tourists to the islands

[00:16:10.10]
Speaker 1: Now this is a dhow used for carrying cargo, fishing and sometimes providing tourist transport from here to Mombasa. You can do all those with this one. We even use these boats to sail up to Mozambique for purposes of work.

[00:16:29.13]
Speaker 4: Can I take a picture of Mgwanda?

[00:16:32.03]
Speaker 1: No problem! You have come here, take as many as you want.

[00:16:38.11]
Speaker 4: I am a bit amazed because of these new styles. I only know of the dhows, sailing ships, “Sapas”, and canoes but “Mgwanda” is new.

[00:17:07.18]
Speaker 1: There was a time a person came with a full bus they wanted all that I had told you. You know they knew a bit of Swahili [crosstalk]

[00:17:39.21]
Speaker 1: You know now we have other larger types on which we install the engine on the other side (as he demonstrates on the ground). Now those are the ones on which we install the fridges so you can stay on the sea for about a week

[00:18:21.14]
Speaker 1: Then we take them to the mainland because here in the islands there are a lot of fish while on the mainland there are no fish, so it is very expensive.

[00:18:55.23]
Speaker 2: Why are you putting varnish?

[00:18:57.07]
Speaker 1: Now this is modern technology. We used to use shark oil. Shark oil is extracted from the shark. Put them in a tin until it decomposes. Once decomposed and with a bad smell we then smear it on the boat. (Laughter) after short period and after the wind blows on it; it shines and does not smell anymore. Now the advantage of that, is that wood is clean once you just wash it. But this one (pointing) if you want to remove you have to use something like a knife to scrape it off so gradually the wood is scraped off inch by inch until thins out. But with shark oil, you take cotton and soap and sand and you scrub on it then you smear it again. Now this is the modern way.

[00:19:52.16]
Speaker 2: Using varnish?

[00:19:53.14]
Speaker 4: Yes, varnish.

[00:19:54.18]
Speaker 2: But initially you used to use shark oil.

[00:19:55.23]
Speaker 4: Shark oil and animal fat (Shahamu). For shark oil we use this (pointing). "Shahamu" is cow fat. Normally after a cow is slaughtered you take the fat and mix it with chalk which is limestone then we smear it under (demonstrating). That is local **[00:20:12.25][xx]** nowadays is when we buy paint. There is "burger" paint from England we paint under. (Laughter)

[00:20:40.15]
Speaker 4: I know how to use fish oil also cow blood...

[00:20:45.07]
Speaker 1: Yes, the one we use inside (demonstrating) it is actually fat .When you slaughter a cow you use that fat.You can even use camel fat which used to be brought by the Arabs.

[00:21:17.10]
Speaker 2: He is asking that once you have finished constructing a boat, is there traditionally something like people cooking rice and or having some form of celebration thereafter?

[00:21:40.14]
Speaker 1: That is done for the big sailing ships (jahazi) but for this one we offer dates or Halua (soft and tasty gray or brown food made out of ground flour and arrow roots and mixed with sugar and oil).

[00:22:23.14]
Speaker 1: Show him one on your way back and buy it for him.

[00:22:36.20]
Speaker 1: There are usually many people. We sing songs (laughter).

[00:22:59.17]
Speaker 1: We all gather together here.

[00:23:24.01]

Speaker 1: But these days we don't do that. We have removed those traditions. You know nowadays everybody has their faith .We are now in the season of change so now we give out Halua. But then there are still those people who still cling to traditions. You know everybody has their faith. Because those who believed in those traditions of giving the demons food but for some of us after finishing we give an offering as a way of showing thanksgiving.

[00:23:54.14]

Speaker 2: So initially, you do not do anything at the beginning of the work.

[00:24:19.09]

Speaker 1: Another question?

[00:24:36.11]

Speaker 1: So, these are mangrove. They are transported here with a vessel like this, from there (pointing) we unload them and put them here because of the ocean water. The water hits this wall (pointing).

[00:25:06.11]

Speaker 1: This is white cement.

[00:25:10.19]

Speaker 2: Why do you paint that?

[00:25:12.06]

Speaker 1: To prevent these nails from rusting.

[00:25:39.27]

Speaker 1: This is where the engine is installed and then here is where we put that sail. The ship mast (Mlingoti) is placed here and then raised up and then you put those ropes.We call it hoisting the foresail (kutweka).

[00:26:24.23]

Speaker 2: You like soda?

[00:26:25.18]

Speaker 1: Yes, I will drink it (laughter) thank you!

[00:26:41.20]

Speaker 1: You know for the other translations you have to consult the Swahili dictionary (Kamusi).

[00:26:45.12]
Speaker 2: Yes, they are going to look for those words.

[00:26:52.07]
Speaker 4: Where did you learn your trade?

[00:26:56.17]
Speaker 1: First I taught myself....before you know the changes...Before this bank was built we used to sit up there (pointing) after finishing we would stop a car so that it does not pass and tell people to alight and it becomes a big celebration because there are many people.

[00:27:19.08]
Speaker 2: He is actually asking you where you learnt your craft.

[00:27:22.09]
Speaker 1: I just learnt it here but during that time I started up there (pointing) so I used to come from school and then I used to come here and I basically learnt it from my father. My father emphasized to me that I first to go to school.

[00:27:48.17]
Speaker 2: So, he used to work with him here.

[00:27:50.17]
Speaker 1: He was employed in Ministry of Fishing.

[00:27:56.08]
Speaker 1: Because ... after wanting to start the Fisheries Ministry, they first thought how are we are going to start this ministry. So, they had their two ships so they thought and said they would order an engine from Italy and my father used to make wooden boats so it was outer engine and inter engine because even with these (pointing) you can also put an engine inside, inter engine and outer body engine… so later after retiring he came here… and for me after finishing school I came here and started teaching myself… but he is now deceased. So, I got my craft from my father.

[00:29:02.01]

Speaker 4: For how long have you been an artisan?

[00:29:04.20]
Speaker 1: For 25 years.

[00:29:12.00]
Speaker 1: Because I used to come here every time from school and so after completing school I had enough experience of the craft. I have lived in Dar es Salaam, Sipwe..I have lived in Mafia and in a lot of areas of this coast

[00:29:44.01]
Speaker 1: Now, let me say something concerning these vessels. We see these vessels here that are small. There is jahazi then there there is "bumu" bigger than jahazi. You can pack an eighteen container. "Bumu" is the biggest made of wood which most of its builders were a mixture of Pakistanis. Jahazi is the most popular in our area here. These are for Tanga only as they don't have engines but a "Kutweka" (foresail) but it is large.

[00:30:27.24]
Speaker 2: Another type?

[00:30:31.15]
Speaker 1: There is sailboat (Mashua). Sailboat is a child of sailing ship (Jahazi). After sailing ship, it is sailboat.

[00:30:52.04]
Speaker 1: These sailboats have reduced a bit because of pirates in Somalia. So, from Oman it was easy passage, that is, from Oman, India. But now it is impassable because you pass there you are arrested or can even be killed and that is why these sailboats are rare. And even now the travelling using sailboats have reduced because people used to come from afar. Some used to come from near Europe using the sail to pass through Somalia but now that there is war there you cannot pass as it is dangerous.

[00:31:41.10]
Speaker 1: For example, this fruit of which we have spoken about. This date fruit (pointing) used to come from Arabia. It never used to come via ship or air only with sailboats, then there is this fish called shark, the ones which were smoked, they used to be brought here by the Somalis using sailboats.

[00:31:56.23]
Speaker 2: But now you don't do that business because of the instability in Somalia?

[00:32:00.19]
Speaker 1: Yes, because now "Papa" (shark) are loaded into ships. So, the economy has gone down because of the instability in Somalia and so our business has also gone down. We used to use these vessels to go to Mombasa, Somalia.

Marr Tongoni 07-27-17 (17)

Julius: (He was murmuring to Ryan and after directly started to explain)..But after coming of Arabs other foreigners came with new marine technology and so local people learned it from foreigners.

Ryan: During the time of colonial intrusion, did Germany changed transportation or they used what they came with?

Muddy: (Mfundi) In that time we Africans had our own means of transport which was not so different from German vessel because they all had no engine board, so Germans still used theirs

Ryan: (asking for clarification) So transportation didn't change?

Julius: Oh yeah, yeah.

Ryan: (asking for specific clarification), So transportation is the same now as it was before?

Julius: Of course, yes. (Continuing with some explanations), there was no change (he is referring to marine technology) that occurred even after colonialists came here.

Muddy: (adding to Julius's explanations) Because by that time they were all using wind direction, if wind moves in northern direction they go south and vice versa.

Julius: (while patting Ryan with a piece of paper) Do you remember the locally wind referred as *"Upepo wa Kus kus na Kazikazi"*?

Ryan: Yes, that is like wind….

Julius: Yeah! Northern wind and southern wind

Ryan: So even with the arrival of colonialists, Tanzanians didn't change their designs and are the same now?

Julius: (replying with positive gestures) Yeah.

Comment: Interview interrupted by the coming of Bakari, and Julius greeting him… Ryan is talking about stopping the interview and local respondents is instructing Bakari what to do.

Ryan is kindly thanking the local respondent in local language (*mzee tunashukuru sana*) and requesting to continue with interview tomorrow (*lakini tunaweza kuendelea tena kesho*?). Local respondent is replying positively (*muda wowote wee*). Julius is translating (any time feel free)… Julius is also thanking him in a local language and they all shake hands with him.

Ryan: (complementing him in Swahili), "*Wewe ni mwalimu mzuri sana*" which translates as you are really a very good teacher.

Julius: (repeating what Ryan has just said) Of course he is a good teacher, he has twenty years of experience (and they all burst with laughter).

Ryan: (asking the meaning of share in Swahili, Julius answered him that it is "*kubadilishana*") Ryan then used the word for thanking the local respondent again: *"Asante kwa kubadilishana muda na mimi".* After, they all stood up and said good bye.

MAH0009 (Pangani 08-01-2017)

(Mid-conversation)

Khalifa Mohamed: After seeing these; I saw big boat comes with white people I went to see them and I started to manufacture them here.

Julius: So, we can say that these boats were brought by white people? (referring to fiberglass speedboat hulls)

Khalifa Mohamed: Yes.

Julius: What year?

Khalifa Mohamed: A long time ago, like 1950, but later there was one white man called Major Grant and he was living in Bagamoyo. When he saw me making them he took me to work with him.

Julius: What year?

Khalifa Mohamed: 1952.

Khalifa Mohamed: I was born in 1925 and now I'm about 92 years old.

Ryan: Remind me your name.

Khalifa Mohamed: My name is Khalifa Mohamed. I was born in Pangani and I have been living in Pangani until now.

Ryan: How many years up to now?

Khalifa Mohamed: 92 years up to now

Julius: So, this white person brought speed boat?

Khalifa Mohamed: He owned a garage, when he saw me making boats, he took me to work in his garage

Ryan: Was there some series of boat designs you made?

Khalifa Mohamed: Yes, there were so many but I made them depending on customer needs and the purpose. Some bought boats for business and others for transportation. I made a lot of designs.

Ryan: What are the recommended types of wood for boat making?

Khalifa Mohamed: *Mtondoro* and there is another called *Mfimbo*

Julius: So *Mtiki* is of recent use, it was not used in making boats before?

Khalifa Mohamed: *Mtiki* is very good for making local boats.

Ryan: What were the major reasons for changing of local boat designs?

Khalifa Mohamed: Local boat models were proposed by the customers, but my work was just to create and design using my skills. I designed a lot and sell them in Zanzibar, Tanga, Mombasa in Kenya, and many other regions. I used to receive customer orders and make boats for them. On arrival of customers they find the boats are already made; then it remained his/her choices whether to buy or not. I did not deal with customers' debts.

Ryan: How did you approximate the size of the boat keel (*Mkuku*) during manufacturing?

Khalifa Mohamed: I normally approximate according to water depth. The customer said the purpose and areas or water level in which the boat will be used, and from there I approximate the keel size.

Khalifa Mohamed: Were you at Tongoni?

Julius: (replying) Yes.

Khalifa Mohamed: Tongoni boat makers are still making local boats but of the old designs and they cannot understand what I am talking about now. If someone from Tongoni said that he/she knows anything about this, he is a liar. Likewise in Zanzibar, they are making local boats but they are making of the same, single design. They are using the design which they took from Bagamoyo and until now they have not yet designed their own models. And those models from Bagamoyo were designed by me and they learned from me.

[00:00:02.24]
Khalifa: But he used to make such small boats with ease, when I found him there. It was there that I once saw those speedboats which the white people came with for tourism purposes. So, I went and closely looked at them, took their measurements then I started constructing them.

[00:00:40.10]
Julius: So, let's say that it is the white people who brought these boats here?

[00:00:43.15]
Khalifa: Yes.

[00:00:44.16]
Julius: When was that?

[00:00:46.24]
Khalifa: For sure it is many years now, may be around 1950 to 1953. Later, when I started boat making there was a white man called Major Grant. He was arrested here in Pangani. When he saw me, he immediately took me in and I started working for him.

[00:01:35.02]
Julius: A European?

[00:01:35.15]
Khalifa: Yes, a European.

[00:01:40.26]
Julius: Which year was that?

[00:01:49.01]
Khalifa: I started working for him around 1952.

[00:01:51.29]
Julius: Aah!

[00:01:54.03]
Khalifa: Is that many years?

[00:01:54.17]
Julius: That is many years!

[00:01:55.02]
Khalifa: No.

[00:02:02.14]
Khalifa: I was born in 1925. I am now 92 years old.

[00:02:10.20]
Julius: Wait, remind me your name.

[00:02:15.18]
Khalifa: My name is Khalifa Mohammed. I am a resident of Pangani. I was born in Pangani and up to now I am still living in Pangani

[00:02:26.03]
Julius: How many years up to now?

[00:02:27.06]
Khalifa: I have hit 92 years now.

[00:02:42.17]
Khalifa: 1925, February. I discovered that my father had written that date in a book. He did not write the specific day. He just wrote 1925, the month of February

[00:03:04.01]
Julius: So, you just celebrate your birthday, when the month of February starts.

[00:03:09.26]
Khalifa: No, these things have just come recently. Birthday celebrations never used to be there during those days.

[00:03:16.10]
Julius: So, it is this white guy that brought those speedboats?

[00:03:20.08]

Khalifa: He had opened a workshop for making boats. So, when he saw me, he took me and placed me in his workshop and I started constructing boats from his place.

[00:04:03.10]

Julius: He is asking if you can say something about the designs of the boats that is how they were conceived and how many designs were there.

[00:04:09.05]

Khalifa: They are many models. We used to construct them for business purposes. Every time I used create a new design, which was suited for different people's taste.

[00:04:27.01]

Julius: So, the first thing was the people's needs, that is, somebody wants a boat for travelling, for business purposes something like that?

[00:04:32.27]

Khalifa: Yes.

[00:05:05.24]

Julius: Which type of wood was mostly used?

[00:05:07.26]

Khalifa: I used to use wood from African Mahogany, "*Nguve*," and then there is a tree called *"mfimbo."*

[00:05:17.05]

Julius: So, use of wood from teak tree is just a recent thing. People in Tongoni use wood from teak tree.

[00:05:24.24]

Khalifa: Teak is very good. I have used it.

[00:05:51.02]

Julius: He wants to know what influenced the change of designs of our local Swahili boats – that is, our canoes, dhows, etc. What influenced the change of designs? Because you will find that some are covered on top, others are narrow, others are wide. What was influencing their change of designs?

[00:06:14.00]

Khalifa: Changes were according to individual tastes. We used to construct according to a person's individual taste. Do you understand?

[00:06:23.04]
Julius: Where were you copying the designs from?

[00:06:25.18]
Khalifa: You just use your own brains.

[00:06:42.06]
Khalifa: I used to construct and sell them in Zanzibar, Kenya, Tanga. I have indeed sold my own hand made boats.

[00:07:00.20]
Khalifa: Clients would come here and say that they want a certain model and design, then I just construct. I used to take people's orders. As long as they give me the specifications they want, I just construct the boats. So, when you as a client, when you come back, you just find that it is ready. If you like it, you take it! If you do not, then leave it! It is not that I put money first, No! I do not like putting money first. If you like this design, then we make a deal.

[00:08:37.29]
Julius: What brought about the changes of the keel and how to place them? How did you determine that the keel should be placed like this or like that?

[00:08:48.27]
Khalifa: You know that we are craftsmen. if you want a certain length, you want the one for placing that keel… Me, I don't want it there… We use other boats in a river here… There are other areas where water is shallow so if you put the keel like this it touches the ground it looks as if it is submerged because of a lot of water, so we remove it. We just construct it like this, [Gestures] without keel because it will be almost submerged in water.

[00:10:12.19]
Khalifa: You have been in Tongoni?

[00:10:13.27]
Julius: Yes

[00:10:14.19]

Khalifa: In Tongoni, they make boats, but they make the old model. They are not the ones that I am talking about. So, if you tell the people of Tongoni what I am talking about, they will not understand. They cannot know. If they say they know, then they are lying.

[00:10:52.22]
Khalifa: Like, let's say in Zanzibar. In Zanzibar they make these small boats. That is therefore that is their only model. They cannot change that model. For us we had the ability to change models. We could make a model only meant for fishing where you could tie a crane inside for pulling nets. There was a company in Bagamoyo; I have forgotten its name, which used to make orders to Major Grant…

MAH0009 Swahili (Pangani 08-01-2017)

[00:00:01.24]
Khalifa: Lakini alikuwa anatengeneza boti kama hizi ndogo ndogo kama mchezo sasa mimi nilimpata pale. Mimi baada ya kuona hivyo niliwahi kuona hizi speed boats kunakuja nazo wazungu kutembelea tembelea. Sasa nikaenda nikaangalia nikazichora mahali pale nikaanza kutengeneza.

[00:00:33.29]
Ryan: [INAUDIBLE 00:00:33.29 - 00:00:36.01]

[00:00:40.02]
Julius: Kwa hivyo tuseme hizi spidiboti wazungu ndio wamezileta hapa?

[00:00:43.24]
Ryan: Ndio.

[00:00:44.13]
Julius: Kipindi gani sasa?

[00:00:45.18]
Ryan: Miaka mingi kwa kusema kweli labda tunaweza kusema kama mia tisa hamsini, hamsini na tatu. Lakini baadaye nilipoanza kuanza kulikuwapo na mzungu mmoja haya anaitwa Major Grant.

[00:01:11.17]
Julius: Anaitwa?

[00:01:12.00]
Khalifa: Major Grant.

[00:01:13.01]
Julius: Major Grant.

[00:01:14.11]
Ryan: Yeye alifungwa huku Pangani aliponiona mimi pale akanichukua nikawa nafanya kazi pale kwake.

[00:01:28.05]
Julius: Anaitwa Major Grant?

[00:01:29.12]
Khalifa: Major Grant.

[00:01:33.23]
Ryan: Ni Mwingereza?

[00:01:35.14]
Ryan: Mwingereza

[00:01:40.25]
Julius: Ilikuwa mwaka gani hii?

[00:01:42.20]
Ryan: Katika… mimi nimeanza kazi kwake kama mwaka hamsini na mbili hivi.

[00:01:53.06]
Ryan: Mingi.

[00:01:54.24]
Julius: Una miaka mingi sana.

[00:02:02.14]
Julius: Mimi nimezaliwa 1925. Sasa hivi niko na miaka tisaini ni mbilI.

[00:02:10.17]
Julius: Ngoja jina unikumbushe?

[00:02:13.24]
Ryan: La Nani?

[00:02:14.11]
Julius: La kwako.

[00:02:15.11]
Ryan: Khalifa Mohammed.

[00:02:18.29]
Julius: Khalifa.

[00:02:21.16]
Interiewer: Ni mkaazi wa Pangani, nimezaiwa pangani mpaka sasa hivi nikopangani.

[00:02:26.03]
Julius: Miaka mingapi mpaka sasa hivi?

[00:02:27.10]
Ryan: Tisini na mbili sasa nimemaliza.

[00:02:30.29]
Julius: Tisina na mbili

[00:02:42.19]
Khalifa: 25 mwezi wa Februari. Mimi nilikuta ndani ya kitabu cha baba ameandika hivyo pale. Hakuandika… Amekosea hakuandika ilikuwa tarehe ngapi au la hapana ameandika amezaliwa elfu moja mia tisa ishirini na tano mwezi wa Februari basi.

[00:03:03.28]
Julius: Inabidi uwe unasherehekea tu ikifika mwezi wa kwanza tarehe moja mwezi wa kwanza we unasherehekea birthday yako?

[00:03:09.26]
Ryan: Ahh, mambo haya yamekuja sasa zamani hakuna mambo haya.

[00:03:16.11]
Julius: Huyu mzungu ndiye aliweka hizi speeboats.

[00:03:20.07]
Ryan: Yeye alikuwa amefungua gereji anatengeneza. Aliponiona mi natengeneza akanichukua akaniweka kiwandani kwake. Nikawa natengeneza hapo kwake.

[00:03:48.13]
Ryan: Mzee je unajua kuhusu kubadilisha mfumo ya boti kama dau au mtumbwi pahali ya wakati ya colonial.

[00:03:58.23]
Khalifa: Ndio.

[00:04:00.10]
Ryan: Unaweza kwa mfano.

[00:04:02.26]
Julius: Anaulizia ya kwamba je unaweza ukatuambia mifumo na jinsi ulivyokuwa unabadilika na utengenezaji wa boti ilianzaji ikaenda hivi.

[00:04:09.24]
Khalifa: Nyingi sana.

[00:04:10.12]
Julius: Nyingi sana.

[00:04:12.08]
Khalifa: Ilikuwa sisi tunatengeneza ya biashara. Sasa kila mara unatengeneza na design mpya na huyu anapenda alafu unatengeneza design nyingine anapenda hile inakuwa inatengeneza biashara.

[00:04:26.27]
Julius: Kwa hiyo kitu cha kwanza ilikuwa ni mahitaji hayo? Mahitaji ya watu. Mtu anataka boti ya safari ya biashara, ya nini?

[00:04:33.05]
Khalifa: Ndio.

[00:04:36.17]
Ryan: Na kama boti kienyeji pia local boats kama mtumbwi na dau.

[00:04:44.10]

Khalifa: Mtumbwi, ndio.

[00:04:47.01]
Ryan: [INAUDIBLE 00:04:47.01]

[00:04:55.12]
Ryan: Kama mfumo tofauti na mfumu ya mwili tofauti ya waweza kuzungumza kuhusu…

[00:05:06.07]
Julius: Mbao gani ambazo zilikuwa zinatengenezwa…

[00:05:08.13]
Khalifa: Tulikuwa tunatumia mbao saa zingine mtondoo, nguve alafu kuna mti mwingine unaitwa mfimbo

[00:05:17.12]
Julius: Kumbe mtiki ni ya juzi juzi?

[00:05:19.09]
Khalifa: Hee?

[00:05:24.04]
Julius: Mtiki mtiki.

[00:05:23.04]
Khalifa: Mtiki? Mtiki mzuri sana sana sana mzuri sana unaweza tumia.

[00:05:51.02]
Julius: Anauliza hive mzee wakati hizi zilikuwa zinabadilika katika mfumo yake hizi boti za kienyeji, za kwetu za waswahili mitumbwi jahazi, ngalava na kadhalika. Zilikuwa zinabadilika kulingana na nini? Kwa sababu utakuta zingine zimefunikwa juu, zingine nyembamba, zingine ndogo, zingine kubwa. Zilikuwa zinabadilikaji?

[00:06:14.07]
Khalifa: Hayo hizo unapenda mwenyewe unategemea katika mwenyewe unavyopenda sisi tunakutengenezea namna hiyo unapenda wewe. Waelewa?

[00:06:23.07]

Julius: Na mulikuwa mnaiga wapi?

[00:06:25.26]
Khalifa: Ubongo wako mwenyewe.

[00:06:42.24]
Khalifa: Mi nilikuwa na tengeneza nauza Zanzibar, nauza Kenya, Tanga, nauza. Mimi nimeuza mwenyewe.

[00:07:00.19]
Khalifa: Wanakuja hapa wanachukua. Nataka modeli fulani namna hii namna hii basi nawaletea.

[00:07:08.03]
Khalifa: Na mimi nilikuwa na ukawaida na chukua oda ya mtu kama hivi we tunazungumza unaniambia nataka boti kiasi fulani kiasi fulani halafu mi natengeneza ile boti we wakati unakuja unakuta iko tayari we unapenda chuka hupendi wacha. Sio kama na chukua pesa mbele hapana me sipendi kudaiwa.

[00:07:53.20]
Ryan: Twaweza kuzungumza kuhusu badilisha kwa mfano.

[00:08:07.16]
Ryan: Kama jana tulizungumza pamoja na mfundi tofauti kuhusu badilisha mfumo ya boti na alisema kwamba baada ya wakati wa koloni kuna keel kubwa, mkuku kubwa sana na kubwa ya boti. Unajua kuhusu mfumo ya badilisha zaidi.

[00:08:37.19]
Julius: Nini kilichofanya mabadilisho ya ule mkuku namna ya kuweka zile vitu mlikuwa mnajuaje kwamba huu mkuku huwa uko hivi mkuku huwa uko hivi?

[00:08:50.02]
Khalifa: Sisi ni mafundi unaelewa, unaelewa kama unatka futi kadha kadha urefu nataka ya kuweka ule mkuku mimi sitaki kuna kuna sisi tunatumia boti zingine za outboat huku ndani mtoni. Kule tunatumia kuna sehemu zingine maji madogo kabisa sasa kama utaweka ule mkuku namna hii unagusa chini. Inakuwa inakaa maji mengi. Sasa tunaondosha hiyo, tunatengeneza hivi vile hakuna mkuku. Kwa sababu hiyo nayo itafika mpaka karibu kabisa ya kuingia mle ndani ndiyo tunatengeneza namna hiyo.

[00:10:12.26]
Khalifa: Nyinyi mumefika Tongoni?

[00:10:13.28]
Julius: Hee.

[00:10:15.05]
Khalifa: Tongoni wanatengeneza hizi mashua lakini wanatengeneza old model si zile nazungumza mimi vile tulikuwa tunatengeneza na modeli hii sasa kama habari hizi nazungumza mimi ukiwaambia Tongoni hawajui. Hawawezi kujua waongo. Wakisema wanajua uongo.

[00:10:52.02]
Khalifa: Kama labda tusema Zanzibar. Zanzibar wanatengeneza mashua hizi ndogo ndogo, basi modeli yao ni hii moja. Hawawezi kubadilisha modeli ingine waona? Sisi tulikuwa tunaweza kubadilisha modeli zile. Tunatengeneza zingine special itakkuwa sababau ya uvuvi tu kuvua samaki, kreni mle ndani ya kufunga nyavu neti kule nje tulikuwa tunatengeneza wanaichukua Bagamoyo. Kulikuwa kuna kampuni moja sijui kampuni gani wanachukua hapa kwa Major Grant…

MAH00010 (Pangani 08-01-17)

Ryan: How about Tongoni, did they also learn from you?

Khalifa Mohamed: Mmmh! Tongoni youth are very lazy! They don't want to learn from Pangani.

Ryan: So there is no boat design relationship between Tongoni and Pangani?

Khalifa Mohamed: Yes, there is no boat designing relationship between the two places since an earlier time. Even their boats are different from ours and Zanzibar. You know when the boats are moving because you can identify where it was made according to its design.

Ryan: Where did you used to outsource boat designs?

Khalifa Mohamed: You know what designer thinks. I used to think and design boats along with its projected speed in water before its operation. If you design poor models no customer will accept it therefore I design a lot of boats of various models. Boats are just like car designs, it may be different model of car but all are Toyota.

Ryan: Is it possible for a single boat to have many combined designs from various locations example a boat to have a combination designs of Zanzibar, Tongoni, Pangani, Kenya etc.?

Khalifa Mohamed: Yes, it is possible! But designers may recognize it easily. There is only one

complication, boats designs differ in their size so it is difficult to mix the models within a single boat.

Ryan: What was the first boat model you saw before colonialism?

Khalifa Mohamed: During those times there were no boats like those of today.

Ryan: When the foreigners came, they came with what kind of boat during colonialism?

Khalifa Mohamed: They came with just a big boat.

Julius: How about the Germans, they come by using what kind of transport?

Khalifa Mohamed: They came with their own boats. One of them sunk there nearby I heard from others. Another German boat was here but now has been shifted to another place.

Julius: What was the driving power, wind or engine?

Khalifa Mohamed: Its driving power was wind and engine too but not like these current engines, it was those of old version which uses water (steam).

Julius: What was the name of the German's boat which sunk there nearby?

Khalifa Mohamed: I don't know its name.

Julius: How about the production of boats, is it still ongoing?

Khalifa Mohamed: No!

Julius: Because of engine boat or…?

Khalifa Mohamed: Yes! And people are now using ferry for transport.

Ryan: What is your education level?

Khalifa Mohamed: There were no other levels of education during that time except for the standard four (4) only.

Julius: So you learned from your father?

Khalifa Mohamed: It's through my knowledge and skills which I accumulated when I worked with local industries.

Julius: Before colonialism, how was the boat making business?

Khalifa Mohamed: Pangani was very good. Most of the historical sites are available in Pangani. Even sisal and sugarcane plantations were launched here in Pangani during German colonial rule. By that time boat making business was extinct.

Julius: What do you think are the reasons that the business of boat making stopped?

Khalifa Mohamed: That includes many things but the major reason was colonialism. Colonialists did not allow us to continue making local boats.

Julius: are you able to make wooden boat?

Khalifa Mohamed: Aah! For now I can't because my eyes do not see well.

Julius: Previously?

Khalifa Mohamed: Yes! Previously I used to make wooden boats.

Ryan: What tools did you use to make boats?

Khalifa Mohamed: I used hammer, saw, and other local tools

Ryan: How about *handi*, did you use it?

Khalifa Mohamed: Yes.

Ryan: Did you use electrical tools in making your boats?

Khalifa Mohamed: No, there were no such tools during those times.

Julius: I think colonialism changed various local items and many other things.

Khalifa Mohamed: Why?

Julius: Because you used to make your own boats but on arrival of whites the production of local boats ceased! Everyone started to use white's boats.

Khalifa Mohamed: It is true! Making local boats for what purpose? People are used to traveling using white's boats. Even transportation of goods like sisal were carried out by white's boats.

Julius: The so called Abushiri Bwana Heri (insurgent fighting against German imperials powers), did you see him?

Khalifa Mohamed: Abushiri? I didn't see him.

Julius: Does his clan still exist?

Khalifa Mohamed: His clan? It does not exist here but his house exists to this day.

Julius: Abushiri Salim Bwana Heri was strong leader with great influence in this coastal region but was hanged by German as he was fighting against colonialism.

Ryan: During the time Abushiri Bwana Heri was fighting against German colonialism, which boat he was using?

Khalifa Mohamed: There was no boat, he moved only on foot. For moving from one place to another across the river he used to swim.

Ryan: When the foreigners came with their boats, Pangani boat designers did not design a boat similar to the colonial design?

Khalifa Mohamed: They didn't copy the white's boat models because white people also came on foot while their boats were left in the town. Also, local people at Pangani hated German

colonialism therefore they didn't even try to adapt new design models from them.

Ryan: When you used to make local boats, which boat designs were most preferred by customers?

Khalifa Mohamed: There was no specific model which was preferred, but it was dependent on new model designs.

Ryan: How about the size, which size was preferred amongst the designs which you used to manufacture?

Khalifa Mohamed: I don't know exactly the size of the boat but those with large carrying capacity like 40 tons were preferred for transporting goods from Pangani to Kahororo and other places.

Ryan: Is there any other person that you have taught your skills of boat making?

Khalifa Mohamed: Aaaah, no. There is no one. I have refused to teach them, people of this area don't want to work. They are lazy. They ignore getting boat making skills. One of my children used to repair cars and motorcycles but he does not want to learn how to make boats.

Julius: But I think making boat is tough work

Khalifa Mohamed: Yes! It's tough! Nowadays there are electrical tools, machines, and other technologies so they do not want physical work.

Ryan: How many times have you gone to Zanzibar?

Khalifa Mohamed: I have never gone to Zanzibar! I passed through when I was coming back from Uarabuni, I spend only 10 minutes in Zanzibar.

Julius: How about Mombasa?

Khalifa Mohamed: Mombasa? I went only once to see my kid when was at school.

Ryan: In your opinion, is local boat manufacturing increasing or decreasing?

Khalifa Mohamed: It is decreasing in Mombasa, Tanga and Zanzibar because of the importation of engine boats.

Khalifa Mohamed: It is as I told you, that if we could have youth who want to learn and design they could perform better when making local boats and people would come to buy.

Julius: Of course, this is tough work….

Khalifa Mohamed: But there is money in it.

Ryan: So we can't access boat makers here?

Khalifa Mohamed: Boat makers? They are available. But all the boat makers in this area are liars. Go to Zanzibar or Mafia if you want local boat makers.

Julius: Thank you very much.

GOPRO 0428 Tongoni 08-02-2017

Continuation of interview seen in Marr Tongoni 7-27 - 17 (17)

(Muddi is taking measurements of his new boat that he is designing, using bent rebar)

Muddy: Dulla! Dulla! (name of assistant) ... Ok continue with your silence….

Dulla: What do you want to say? Muddi….

Muddy: It's fine

Dulla: What do you want to say?

Muddi: Thank you!

While Muddy is still taking some measurements, Ryan is asking a question

Ryan: Kifaa hiki kionyeesha mfumo (Is this tool for measuring the boat form)?

Muddi: The tool is used to measure 'mifupa' or 'taruma' (referring to vernacular boat elements, see Appendix). When we want to fix damage, we need to take measurements so that we can choose a suitable piece.

Ryan: Do you use that tool for the whole boat or only this part?

Muddi: No! It's not for the whole boat! It is only for this part but in other parts we can alternate tools.

(While Muddi is taking some measurements of the new boat he is designing, Ryan and Julius are concentrating on observing what Muddi is doing)

GOPRO 0429 Tongoni 08-02-2017

The conversation is regarding the use of the *handi*, or a vernacular protractor used to dictate the angle of the Y-frames (*mifupa*) being shaped with an adze. The Y-frames were installed after the garboard strakes and lower planking had been emplaced (Continuation of video clip GOPRO 0428)

Ryan: Can I ask that since this tool can measure the *Mifupa*, then it means he can fix other pieces here (referring to continuing the planking along the lower hull after the Y-frames are secured)

Julius: Fundi! (*Fundi* is a Swahili name which means an expert or technician)

Muddy: Yes

Julius: (*Anauliza kuwa ukiweka mifupa au hizo tharuma, si baadae hata utaweza kuweka mbao kiurahisi*)? If that tool takes the measurements for the *mifupa* or *tharuma*, can you fix other pieces here?

Muddi: Yes (Muddi agreeing while he is still very busy taking some measurements).

After a long silence, Muddi speaks to Ryan

Muddi: Ryan!

Ryan: Naam!

Muddy: *Utakuja pima wewe au nipime mimi* (Will you come to take the measurements or I should continue taking them myself)?

Julius: Do you need to take measurements?

Ryan: you mean to measure the… (Julius is showing where Ryan was asked to go and take measurements).

Ryan: Okay, *labda naweza kujaribu* (while laughing)… (Okay, then perhaps I can try)

Muddi: *Waweza*? (Can you do it?)

Ryan: Ndio.

Muddi: *Kwa hio niipangue halafu upange wewe* (So should I undo it and you come and rearrange it again?)

Julius: Can you start? (Poorly translating what has been said by Muddi)

Ryan: Oh yeah… (going near the boat and asking for instructions). *Pande hii* (This side)?

Muddi: *Subiri kidogo* (translation: No wait for a while).

Julius: Ryan that tool is just like a plump bomb (talking about a tool which Muddi is using to measure the leveling accuracy of the new boat that he is designing)

Ryan: Yes, a plumb bomb!

Julius: Yes.

Clip ended were Ryan is busy recording something in his notebook.

GOPR0430 Tongoni 08-02-2017

The clip starts with Ryan getting involved with taking measurements. He is given a very straight piece of rebar to bend into the appropriate Y frame form. After some time Ryan places something to help it stay in place… immediately Muddi tells him to remove it.

Muddi: *Hapana, umefeli mimi sikuweka ile* (No, I didn't put anything there to help it stay)

Ryan: *Kwa kweli* (Its true).

Muddi adjusts the rebar. Ryan shakes his hand and expresses his gratitude. Now he is getting some instructions from Muddy on how to take measurements.

Muddi: You see this, you should make sure it lies parallel to the iron rod and then later when you place your timber the measurements will be correct.

Ryan is listening carefully and showing deep interests..

Muddy: This has some points

Ryan: *Inahitaji kuinuka kidogo* (It needs to be bend a little more)

Muddi: Oh yes, you are right.

Ryan takes action… Muddi is instructing him how to properly bend the form.

Muddi: Now this is correct… and the other side should be as this side.

Ryan is taking the rebar form and going to the other side of the boat. Muddi is instructing him how to start doing it. He begins with the help of Julius and the clip ends.

GOPRO 0431 Tongoni 08-02-2017

The clip is continuation of the above clip.

Some casual talk is going on between Muddy and his assistants while Ryan is busy taking some measurements. At last Ryan succeeded to do it well, Muddi and Julius congratulate him.

GOPRO 0435 Tongoni 08-02-2017

This clip starts with Julius asking a question.

Julius: Why is this wood bent, why don't you take the straight ones? (In reference to the Y frames)

Muddi: The straight wood won't fit because the vessel needs to float on water.

Julius: (Translating to Ryan what has been said by Muddi) Because the vessel should be convex shaped in order to float.

Muddi: (calling) Ryan!

Ryan: *Naam*.

Muddi: *Kwanini wewe huniulizi mimi wamuuliza huyo*? (Why don't you ask me directly instead of asking Julius?)

Ryan: (speaking in KiSwahili) *Kwa sababu mm ni mwanfunzi wa Kiswahili hio Kiswahili yangu sio ni sio zuri… hata nikiongea siasa yangu* (He mistaken said *siasa* instead of *sarufi*, Julius corrects him), *sarufi yangu sio nzuri* (Because my Swahili is still poor and I'm still learning it…

even when I speak my grammar is poor).

Muddi: *Sarufi au lafudhi*? (Is it grammar or accent?)…. Julius jumps in; *Sarufi ni taaluma ya lugha* (Grammar is the study of language).

Muddi*:* Hio inakuwa ni lafudhi sio sarufi (translation: that then is accent not grammar.)

GOPRO 0649 Saadani 08-03-2017

The clip starts with a local respondent explaining how to balance the boat when there are strong winds. He is showing how the boat is designed with outriggers that will help with balancing it during high seas.

The clip ends when the local respondent leaves to find a rudder so that he can explain further.

GOPR0650 Saadani 08-03-2017

The clip is continuation of GOPR0649

Local respondent returns with rudder and shows how to direct the vessel while sailing. If you want to turn left, you steer to right side, and vice versa. The boat seems to be built purposefully for fishing and so Julius is asking where you put the fish after fishing.

Local respondent: (Showing the lower hull amidships before the mast step) Here.

Ryan: Can you also use the sail to direct the boat? To turn right, bring the sail left and vice versa? Can you stand on top the wood here to stand (pointing to the outriggers)?

Local respondent: Yes sir

The clip ends as Ryan thanks the local respondent who then shows how an outboard can be mounted and used in a manner similar to the rudder by imitating an engine starting.

GOPR0651 Saadani 08-03-2017

Ryan: What is the name of this part?

Local Respondent: Ahaa! That is called *mberani* (*Mberani* is a vernacular term for the strut that attaches to the hull and the outrigger as a bracing support).

Ryan is giving the notebook to Julius so that he can write the name for him.

Interviewee: You are standing at near the *mberani* (outrigger)… but this is the *bao* (*Bao* is a vernacular term for the outrigger element that lies parallel to the boat)

The clip ends when Julius is explaining and showing the two parts of the boat's outrigger.

GOPR4250 Tongoni 08-01-2017

The clip starts with video of people working with their boats.

One of the locals is joking and telling Sean to pay first, don't record without paying…

Later he gestures to allow them to continue recording. And he adds, record them all even the *Mfundi* (technician) and go sell the video in Mombasa.

Sean continues to record people who were making repairs on their boats in the morning after returning from fishing the whole night. They are doing necessary repairs so that the vessels can be ready for the next trip (which most of time begins after sunset). They are mostly replacing caulking between the hull planking with sisal fiber and cotton.

APPENDIX H: Data Log

Field Research Quantitative Data Log

07/26/17 – 08/13/17

07/26/17: Tongoni

Activity Synopsis:

Visited Dr. Mjema's site and became oriented with the small fishing village of Tongoni (Site Map attached). Dr. Mjema explained the significance of the Tongoni ruins, abandoned in the fifteenth century. Pillars and walls built of coral with Arabic style archways. Within the town itself is the remains of a mosque and tombs of the WaSwahili who controlled the area until DeGama reached Mombasa. Pillar tombs are unique to the WaSwahili before European interaction. Chinese pottery and glass bead trade is evident in the archaeological record before colonial occupation. Pillars on hillside could have possibly served as maritime markers for early WaSwahili sailors. Exact influences and uses unknown, Dr. Mjema's excavation proceeding in close proximity of coral ruins and uncovering evidence of smelting furnaces/iron production. Negotiations initiated with local sailors and craftsmen about possibly building a model. Introduced to local fishermen and toured village and vessel construction site for large ocean-going dhow. Future recording plans discussed, and permissions ensured via signatures on IRB form (Appendix A). Began recording the parts of a "sapa" flat bottom fishing vessel in KiSwahili. Discussed religious/folk rituals associated with vessel construction. Focus was on establishing working relationship so little recording occurred.

Quantitative Summary:

Pictures	Videos	Field Note Images	Interviews	Photogrammetry
20	0	0	0	0

07/27/17: Tongoni (cont.)

Activity Synopsis:

Returned to Tongoni village and cleared activity with the government official in charge of safeguarding the ruins. Sapas, daus, and outriggers (ngalawa) were returning from fishing in the early morning. Spoke with Bakari, a ship repairmen and construction assistant, about the interview process and research goals. He demonstrated the use of numerous tools, some modern, others seemingly indigenous in nature. Boat builders offered to build a flat-bottomed fishing vessel for construction recording purposes, but we settled on a model of a dau since the proposed boat was a simple rowboat, common across the U.S. Organized a fishing expedition with the local fishermen for the following day. Began speaking with the resident "mfundi" and explained interview process and research goals. Shot video of construction process for contracted dau. Watched local women produce sisal rope to haul fishing nets. Interviewed mfundi at length regarding his background, education, training, and technique. Concluded recording efforts after close of interview.

Quantitative Summary:

Pictures	Videos	Field Note Images	Interviews	Photogrammetry
160	28	0	0	2,784

07/28/2017 (Tongoni cont.)

Activity Synopsis:

After collecting supplies in town, we returned to Tongoni village. We assist with launching the motorized sapas and headed out with the fishermen on the planned excursion. SE of Tongoni is the village of Mwarongo. Mwarongo does not have a resident mfundi but there are numerous vessels under repair and we discuss visiting the area on a future excursion. Apparently a very wealthy area due to the fact most residents are government workers within the federal finance office. Recorded fishing operations, equipment, and techniques in detail. After performing two incredibly exhausting drag net retrievals from over a quarter mile out, we pause at a beach while the crew makes one last pass. Return to Tongoni, wash and distribute the catch, eat dinner with the boat owner's family. The majority of the data collected was in video form as interviews and still pictures would have been incredibly difficult while assisting with fishing operations and being an industrious crew member. Planned with fishing crew to visit Mwarongo the following day.

Quantitative Summary:

Pictures	Videos	Field Note Images	Interviews	Photogrammetry
5	32	0	0	0

07/29/2017: Tongoni and Mwarongo

Activity Synopsis:

After arriving back at Tongoni village, gear was disseminated, and we linked back up with the fishing crew from yesterday. We then departed for the village of Mwarongo to record the vessels under repairs and interview any dockyard workers. After speaking with a few of the repairmen close to the shoreline, we were able to locate an mfundi named Luquiman Ally. He told of his background and answered inquiries regarding vessel construction and materials. We recorded an indigenous style fish trap (lema) whose construction style has remained the same for the past century. After talking with the mfundi, we interviewed a very knowledgeable worker named Omary Hamisi. We discussed methods of extending the vessel's life including protections from corrosion and insects. He also detailed the process of apprenticeship from beginning as a worker until reaching mfundi status. An especially interesting aspect of the interview was our discussion with Omary concerning colonial influence on vessel design. He was an elderly gentleman who offered fantastic insight into local history from a primary perspective. We were able to witness a new vessel being blessed through song by a group of Muslim students under the direction of the local imam. Extensive photogrammetric data was collected for later 3-D modeling.

Quantitative Summary:

Pictures	Videos	Field Note Images	Interviews	Photogrammetry
77	26	0	2	760

07/30/17:

REST DAY

07/31/17: Tongoni (cont.)

Activity Synopsis:

Returned to Tongoni village after running errands in town. Found area where trees harvested for ship timbers and discussed alternate purposing of leaves for medicines. Proceeded to interview Bakari about the outrigger canoes, using a beached canoe as the example of a typical "mtumbwe". Next, we proceeded to continue the interview with the village mfundi as he built the large, ocean-going dau. We discussed how he determines the angle of the planking, placement of the supporting frames, and the rigging of the vessel itself. Spoke extensively about the crewing of such a large dau and the criticality of ensuring the purpose of the vessel for design purposes during the contracting phase. Having trained in Zanzibar, he was an excellent resource regarding ship construction techniques all along the coast line of Tanzania. Wrapped interview and solidified deal with the model builder, Dadi Ali.

Quantitative Summary:

Pictures	Videos	Field Note Images	Interviews	Photogrammetry
77	47	36	2	273

08/01/17: Pangani

Activity Synopsis:

Initiated research efforts in Pangani, Tanzania. After speaking with locals, I met a family of Omani origins whose grandfather was a very well-respected master shipbuilder. His grandson had us wait near his home until he returned from breakfast nearby. The grandfather, Khalifa Muhammad, was retired and ninety-two years of age. He had lived in Pangani much of his life, including during British occupation. Mr. Muhammad worked under a British military officer, Major Grant, who taught him how to construct fiberglass hulls to mimic Western speedboats. We discussed the decline of ship construction in the area due to poor fishing and motorized ferry services. The interview lasted over an hour and a half and we were able to collect a significant amount of information regarding the indigenous experience during the colonial period and possible influences on vernacular vessel design. Wrapped the day's recording efforts at the shipyard near the Pangani delta as detailed in the map below.

Quantitative Summary:

Pictures	Videos	Field Note Images	Interviews	Photogrammetry
0	8	0	1	0

08/02/17: Pangani and Tongoni

Activity Synopsis:

Left Pangani in the morning to meet with the mfundi in Tongoni to observe the bending of the planking timbers using the "kipindo". The mfundi went into further detail concerning the forming of framing timbers and use of the "handi" protractor to dictate tumble home. Mfundi allowed us to assist with the forming the curvature of the hull (cheo) planking using a formed piece of rebar as a guide. The planking was laid and torsion applied until the mfundi was satisfied with the ship's lines. Recorded the forming of floor timbers with the adze and discussed the bottom-based vessel design methodology. Unfortunately, the mfundi did not utilize the "kipindo" to bend the hull planking at that time, but we were later able to discuss the model construction process and progress with Mzee Dadi. Discussed other potential sites with Dr. Mjema including the nearby fishing villages of Saadani and Wanga before returning the Pangani.

Quantitative Summary:

Pictures	Videos	Field Note Images	Interviews	Photogrammetry
119	16	0	2	0

08/03/17: Pangani

Activity Synopsis:

Rallied team and prepared for day of sailing with a dau crew based out of Nungwi, Zanzibar. Talked with the crew extensively while recording their sailing techniques and the KiSwahili names for all elements of the vessel. They talked about their fishing strategies and how their maritime activities are dictated by the seasons and monsoon winds. Sailed out of Pangani Delta into the Indian Ocean for close to two hours before turning around and returning to the shipyard. Paid deposit for Zanzibar ferry and returned to Tongoni as the security situation was not ideal.

Quantitative Summary:

Pictures	Videos	Field Note Images	Interviews	Photogrammetry
91	18	25	0	0

08/04/17: Tongoni and Saadani

Activity Synopsis:

Began the day in town collecting supplies and replacing the spare tire. Returned to Tongoni village where we linked up with the fishermen to arrange passage to Saadani. The model was not yet complete as Mzee Dadi suffered a loss in the family. Continued recording the dau construction process with the mfundi and the placement of the floor timbers with newly cut limber holes. He was beginning to form the transom section out of four large boards. Walked to Sadaani (appx 0.5 km) with fishermen to record the vessels present in the smaller village. The fishermen in Saadani primarily used outriggers to ply inland waterways and had little use for larger ocean-going daus as seen in nearby Tongoni. No mfundi was present but I was able to interview an mzee, Sakaaza Shati, who had lived in the village his entire life. The fishing techniques, vessel types, and "blessing" traditions in Sadaani differed greatly from Tongoni despite their close proximity. Interesting design feature noted on the outrigger canoe consisted of a pronounced lip on the bow (kibini) to counter large waves across the stem.

Quantitative Summary:

Pictures	Videos	Field Note Images	Interviews	Photogrammetry
56	12	0	2	0

08/05/17: Tongoni

Activity Synopsis:

Returned to the village at Tongoni and recorded the dau's floor timbers in their entirety. Measured and recorded limber holes and placement of timber along a baseline laid placed atop the length of the keel. Ian and I practiced using the "k.k", or hand-powered bow drill. Bakari demonstrated on an outrigger canoe how to set up the rigging for the lateen sail. He named all parts of the sail and discussed how the sailors step out onto the outrigger in order to best harness the wind and direct the canoe. We retrieved the model of the dau from Mzee Dadi and video recorded him forming the working lines and raising the sails. Once the model was complete, I thanked everyone in the village for their support, handed out parting gifts, and left the village for the last time.

Quantitative Summary:

Pictures	Videos	Field Note Images	Interviews	Photogrammetry
133	19	9	0	0

08/06/17-08/08/17: TRANSIT TO NUNGWI, ZANZIBAR AND REST DAY

08/09/17: Nungwi, Zanzibar

Activity Synopsis:

Toured beach construction/repair site and recorded fire proofing of vessel hulls. Discussed daily issues the sailors faced to better contrast mainland interviews. Many of the vessels exhibited unusual markings and the sheer number of daus present was far greater than anything seen in

mainland Tanzania including within Dar es Salaam. We had to proceed cautiously as the security situation in Nungwi was unknown and we also had to account for differences in cultural nuance. The area was primarily a tourist center and research options were exhausted after speaking with the shipyard workers.

Quantitative Summary:

Pictures	Videos	Field Note Images	Interviews	Photogrammetry
54	6	0	0	0

08/11/17: TRANSIT TO STONE TOWN

08/12/17: Stone Town, Zanzibar

Activity Synopsis:

Gained access to National Museum (House of Wonders) and recorded the “mtepe” replica as well as numerous artifacts related to maritime cultural heritage. Headed to the ship construction site for the interview with the Mfundi Makame. We discussed variations in vessel design in comparison to the mainland and focused especially on the what timbers are used and from where they are sourced. He was able to speak to colonial influences and his view on vessel design evolution. An especially interesting feature of the Stone Town construction site was the presence of a Western style speedboat built in the traditional manner. It had the lines of a modern speedboat but was constructed in the same bottom based, archaic manner as the ngalwas and daus. Mfundi Makame even utilized varnish to protect his vessels rather than relying upon paint or smoke treatment. The traditions associated with launching the vessels differed greatly from those observed in the mainland fishing villages, possibly due to the prevalence of foreign interaction. He was able to shed light on the global security issues faced by modern WaSwahili sailors, providing insight into the mindset of the fishermen themselves. The mfundi discussed the role regulations and registration play in protecting the industry and the construction traditions themselves. Wrapped the interview after two and a half hours. Returned to hotel to begin the return trip prep.

Quantitative Summary:

Pictures	Videos	Field Note Images	Interviews	Photogrammetry
231	13	10	1	0

APPENDIX I: Glossary of KiSwahili Maritime Terms

KiSwahili	English
Ambatisha	When boats tie up with one another
Baraji	Line to 3/4 mark of boom to adjust heading
Betana	Deadwood
Bomu	Large, Pakistani/Indian cargo vessel
Boya	Buoy for nets
Chanda	Transom
Cheo	Bent rebar used as frame guides
Cheweehe	Wood-boring bugs
Damad	Main sheet
Dini ya asili	Natural religion
Farum	Adjustable ballast
Fashini	Stem and Stern Posts
Foromali	Lateen mast
Gaadi	Wooden fenders for docking
Halua	Sweet ugali (corn grits)
Handi	Protractor with plumb bob
Hargamu	Framing element
Jahazi	WaSwahili dhow
Kaji kaji	Lines securing sail to boom
Kalafati	Coconut Oil
Kana	Tiller for rudder
Kasia	Paddle
Kibango	Thwart pieces including mast step
Kibini	Lipped bow of *ngalawa*
Kinoo	Sharpening stone
Kipindo	Bending of hull planking
Kisongo	Tensioner Rope (Strake to Rabbet)
Kowi	Rigging block
Kutweka	Foresail
Liam	Keel to Stem Joint
Mangabu	Awl
Mashua	Small dhow
Mbao	Wood, also outrigger element
Mbara	Arm extension of outrigger
Mfimbo	Local wood type

Mifupa	Y-frames
Mizigo	Cargo
Mkaratusi	Eucalyptus
Mkombo	Rudder control arm
Mkuku	Keel
Mnyanja	Cheap, locally sourced wood
Msumano	Bow saw (Curved blade)
Mtondoo	African mahogany
Mtumbwi	Canoe/dugout
Mwanga	"Iron tree", similar to ironwood
Mwarubaini/Neem	Medicinal tree
Nanga/Chuma	Anchor
Ngalawa	Outrigger
Ngama	Bilge area
Ngoti	Mast
Njia ya maji	Limber Holes
Nyundo	Hammer
Pamba	Raw Cotton
Pima maji	Water level
Pundo	Large pole used as propulsion
Raanda	Carpenters plane
Rumada Njika	Rudder pin eyelet
Sayari	Planet, also term for lower hull planking
Shaham	Limestone oil
Shahamu	Oil
Sharehe	Celebration/feast
Sharuti	Lines supporting mast for tensioning
Simbi	Cowry shell
Sukani	Rudder
Taluma	Alternating half-frames
Tampisi	Gunwale
Tanga	Sail
Teso	Adze
Tiki	Teak
Umbrowi	Line attached to bowsprit
Uta	Bow for keke drill
Utumbo	Line running through backside of lateen
Wadila	Garboard Strakes

APPENDIX J: Informant IRB Agreements

Ethnographic Maandishi ya Jalada la Mahojiano

Jambo,

Mimi ni mwanafunzi katika Chuo Kikuu cha East Carolina katika Idara ya Historia. Ninakuomba kushiriki katika utafiti wangu wa utafiti unaoitwa, "Uchunguzi wa Historia na Uthibitisho wa Maji ya Asilia huko Pangani, Tanzania".

Madhumuni ya utafiti huu ni kuanzisha rekodi ya maandishi ya maji ya asili na historia yao ya pamoja kupitia mahojiano ya kitaifa. Mahojiano haya yatarekebishwa kwa madhumuni ya usajili. Kwa kufanya utafiti huu, natumaini kujifunza kama kuna ushahidi wowote wa ushawishi wa kikoloni kwenye kubuni ya asili ya maji. Ushiriki wako ni kikamilifu kwa hiari.

Unakaribishwa kushiriki katika utafiti huu kwa sababu ya ushirikiano na jumuiya ya baharini na matumizi yake ya ndege. Kiwango cha muda kitakachochukua wewe kukamilisha utafiti huu ni takriban saa moja.

Ikiwa unakubaliana kushiriki katika utafiti huu, utaulizwa maswali yanayohusiana na ujuzi wako wa kubuni, kusafisha, na matumizi ya maji.

Utafiti huu unasimamiwa na Bodi ya Ukaguzi wa Taasisi ya ECU. Kwa hiyo baadhi ya wanachama wa IRB au wafanyakazi wa IRB wanaweza kuhitaji kuchunguza data yangu ya utafiti. Hata hivyo, maelezo ambayo hutoa hayataunganishwa na wewe. Kwa hiyo, majibu yako hayawezi kufuatiwa kwako na mtu yeyote, ikiwa ni pamoja na mimi

Ikiwa una maswali kuhusu haki zako wakati unashiriki katika utafiti huu, piga simu Ofisi ya Utafutaji wa Uaminifu na Utekelezaji (ORIC) kwenye namba ya simu 252-744-2914 (siku, 8:00 asubuhi na 5:00 pm). Ikiwa ungependa kutoa taarifa ya malalamiko au wasiwasi juu ya utafiti huu wa utafiti, piga Mkurugenzi wa ORIC, saa 252-744-1971.

Huna haja ya kushiriki katika utafiti huu, na unaweza kusimama wakati wowote. Ikiwa unaamua kuwa tayari kushiriki katika utafiti huu, nitaanza kurekodi majadiliano yetu kama ilivyoelezwa kwenye chombo cha mahojiano.

Asante kwa kuchukua wakati wa kushiriki katika utafiti wangu.

Kwa heri,

Ryan D. Marr
Principal Investigator

LUQUMAN ALLY

Ethnographic Maandishi ya Jalada la Mahojiano

Jambo,

Mimi ni mwanafunzi katika Chuo Kikuu cha East Carolina katika Idara ya Historia. Ninakuomba kushiriki katika utafiti wangu wa utafiti unaoitwa, "Uchunguzi wa Historia na Uthibitisho wa Maji ya Asilia huko Pangani, Tanzania".

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Asante kwa kuchukua wakati wa kushiriki katika utafiti wangu.

Kwa heri,

Ryan D. Marr
Principal Investigator

FUNDI Sheha Fom

Ethnographic Maandishi ya Jalada la Mahojiano

Jambo,

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Asante kwa kuchukua wakati wa kushiriki katika utafiti wangu.

Kwa heri,

Ryan D. Marr
Principal Investigator

BAHARI MBARI

Ethnographic Maandishi ya Jalada la Mahojiano

Jambo,

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Asante kwa kuchukua wakati wa kushiriki katika utafiti wangu.

Kwa heri,

Ryan D. Marr
Principal Investigator

MARY HAMISI

Ethnographic Maandishi ya Jalada la Mahojiano

Jambo,

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Asante kwa kuchukua wakati wa kushiriki katika utafiti wangu.

Kwa heri,

Ryan D. Marr
Principal Investigator

Ethnographic Maandishi ya Jalada la Mahojiano

Jambo,

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Unakaribishwa kushiriki katika utafiti huu kwa sababu ya ushirikiano na jumuiya ya baharini na matumizi yake ya ndege. Kiwango cha muda kitakachochukua wewe kukamilisha utafiti huu ni takriban saa moja.

Ikiwa unakubaliana kushiriki katika utafiti huu, utaulizwa maswali yanayohusiana na ujuzi wako wa kubuni, kusafisha, na matumizi ya maji.

Utafiti huu unasimamiwa na Bodi ya Ukaguzi wa Taasisi ya ECU. Kwa hiyo baadhi ya wanachama wa IRB au wafanyakazi wa IRB wanaweza kuhitaji kuchunguza data yangu ya utafiti. Hata hivyo, maelezo ambayo hutoa hayataunganishwa na wewe. Kwa hiyo, majibu yako hayawezi kufuatiwa kwako na mtu yeyote, ikiwa ni pamoja na mimi

Ikiwa una maswali kuhusu haki zako wakati unashiriki katika utafiti huu, piga simu Ofisi ya Utafutaji wa Uaminifu na Utekelezaji (ORIC) kwenye namba ya simu 252-744-2914 (siku, 8:00 asubuhi na 5:00 pm). Ikiwa ungependa kutoa taarifa ya malalamiko au wasiwasi juu ya utafiti huu wa utafiti, piga Mkurugenzi wa ORIC, saa 252-744-1971.

Huna haja ya kushiriki katika utafiti huu, na unaweza kusimama wakati wowote. Ikiwa unaamua kuwa tayari kushiriki katika utafiti huu, nitaanza kurekodi majadiliano yetu kama ilivyoelezwa kwenye chombo cha mahojiano.

Asante kwa kuchukua wakati wa kushiriki katika utafiti wangu.

Kwa heri,

Ryan D. Marr
Principal Investigator

Ethnographic Maandishi ya Jalada la Mahojiano

Jambo,

Mimi ni mwanafunzi katika Chuo Kikuu cha East Carolina katika Idara ya Historia. Ninakuomba kushiriki katika utafiti wangu wa utafiti unaoitwa, "Uchunguzi wa Historia na Uthibitisho wa Maji ya Asilia huko Pangani, Tanzania".

Madhumuni ya utafiti huu ni kuanzisha rekodi ya maandishi ya maji ya asili na historia yao ya pamoja kupitia mahojiano ya kitaifa. Mahojiano haya yatarekebishwa kwa madhumuni ya usajili. Kwa kufanya utafiti huu, natumaini kujifunza kama kuna ushahidi wowote wa ushawishi wa kikoloni kwenye kubuni ya asili ya maji. Ushiriki wako ni kikamilifu kwa hiari.

Unakaribishwa kushiriki katika utafiti huu kwa sababu ya ushirikiano na jumuiya ya baharini na matumizi yake ya ndege. Kiwango cha muda kitakachochukua wewe kukamilisha utafiti huu ni takriban saa moja.

Ikiwa unakubaliana kushiriki katika utafiti huu, utaulizwa maswali yanayohusiana na ujuzi wako wa kubuni, kusafisha, na matumizi ya maji.

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Ikiwa una maswali kuhusu haki zako wakati unashiriki katika utafiti huu, piga simu Ofisi ya Utafutaji wa Uaminifu na Utekelezaji (ORIC) kwenye namba ya simu 252-744-2914 (siku, 8:00 asubuhi na 5:00 pm). Ikiwa ungependa kutoa taarifa ya malalamiko au wasiwasi juu ya utafiti huu wa utafiti, piga Mkurugenzi wa ORIC, saa 252-744-1971.

Huna haja ya kushiriki katika utafiti huu, na unaweza kusimama wakati wowote. Ikiwa unaamua kuwa tayari kushiriki katika utafiti huu, nitaanza kurekodi majadiliano yetu kama ilivyoelezwa kwenye chombo cha mahojiano.

Asante kwa kuchukua wakati wa kushiriki katika utafiti wangu.

Kwa heri,

Sakaza Shli (Shati)

Ryan D. Marr
Principal Investigator

Sakaza

Ethnographic Maandishi ya Jalada la Mahojiano

Jambo,

Mimi ni mwanafunzi katika Chuo Kikuu cha East Carolina katika Idara ya Historia. Ninakuomba kushiriki katika utafiti wangu wa utafiti unaoitwa, "Uchunguzi wa Historia na Uthibitisho wa Maji ya Asilia huko Pangani, Tanzania".

Madhumuni ya utafiti huu ni kuanzisha rekodi ya maandishi ya maji ya asili na historia yao ya pamoja kupitia mahojiano ya kitaifa. Mahojiano haya yatarekebishwa kwa madhumuni ya usajili. Kwa kufanya utafiti huu, natumaini kujifunza kama kuna ushahidi wowote wa ushawishi wa kikoloni kwenye kubuni ya asili ya maji. Ushiriki wako ni kikamilifu kwa hiari.

Unakaribishwa kushiriki katika utafiti huu kwa sababu ya ushirikiano na jumuiya ya baharini na matumizi yake ya ndege. Kiwango cha muda kitakachochukua wewe kukamilisha utafiti huu ni takriban saa moja.

Ikiwa unakubaliana kushiriki katika utafiti huu, utaulizwa maswali yanayohusiana na ujuzi wako wa kubuni, kusafisha, na matumizi ya maji.

Utafiti huu unasimamiwa na Bodi ya Ukaguzi wa Taasisi ya ECU. Kwa hiyo baadhi ya wanachama wa IRB au wafanyakazi wa IRB wanaweza kuhitaji kuchunguza data yangu ya utafiti. Hata hivyo, maelezo ambayo hutoa hayataunganishwa na wewe. Kwa hiyo, majibu yako hayawezi kufuatiwa kwako na mtu yeyote, ikiwa ni pamoja na mimi

Ikiwa una maswali kuhusu haki zako wakati unashiriki katika utafiti huu, piga simu Ofisi ya Utafutaji wa Uaminifu na Utekelezaji (ORIC) kwenye namba ya simu 252-744-2914 (siku, 8:00 asubuhi na 5:00 pm). Ikiwa ungependa kutoa taarifa ya malalamiko au wasiwasi juu ya utafiti huu wa utafiti, piga Mkurugenzi wa ORIC, saa 252-744-1971.

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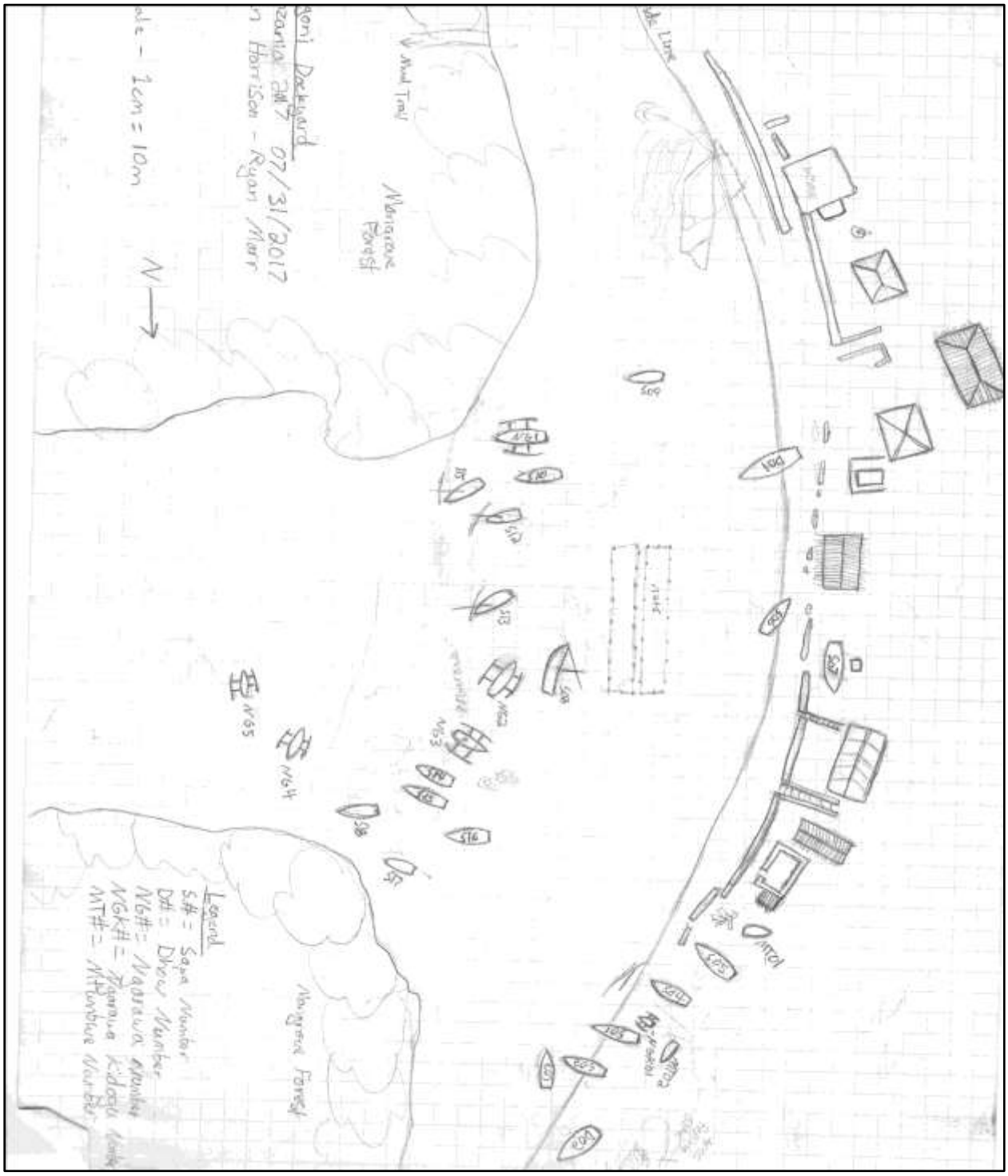
Asante kwa kuchukua wakati wa kushiriki katika utafiti wangu.

Kwa heri,

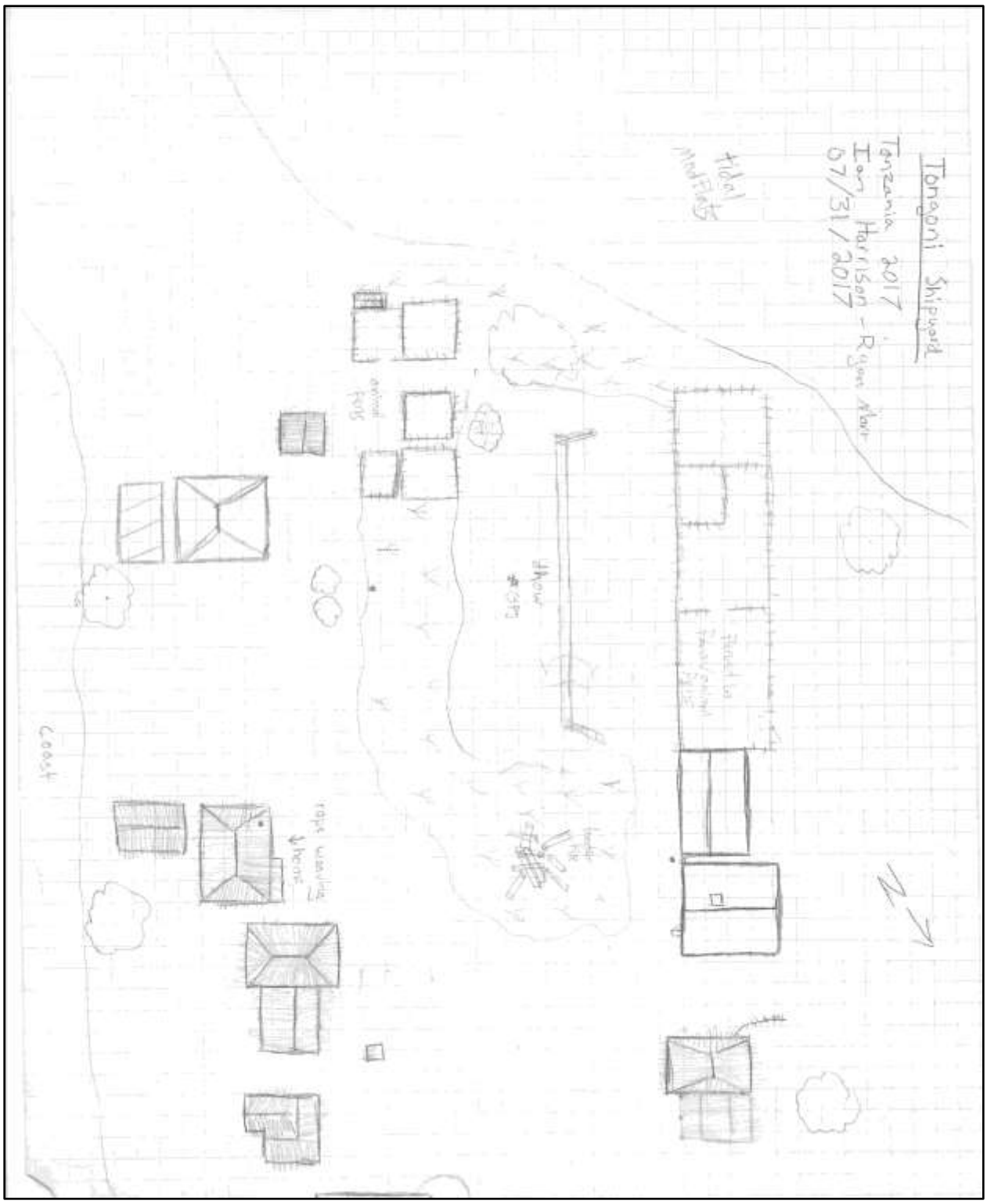
Ryan D. Marr
Principal Investigator

SHAIB AMBAR MAKAME
KINAZINI ZANZIBAR
0774685535
Sawa.

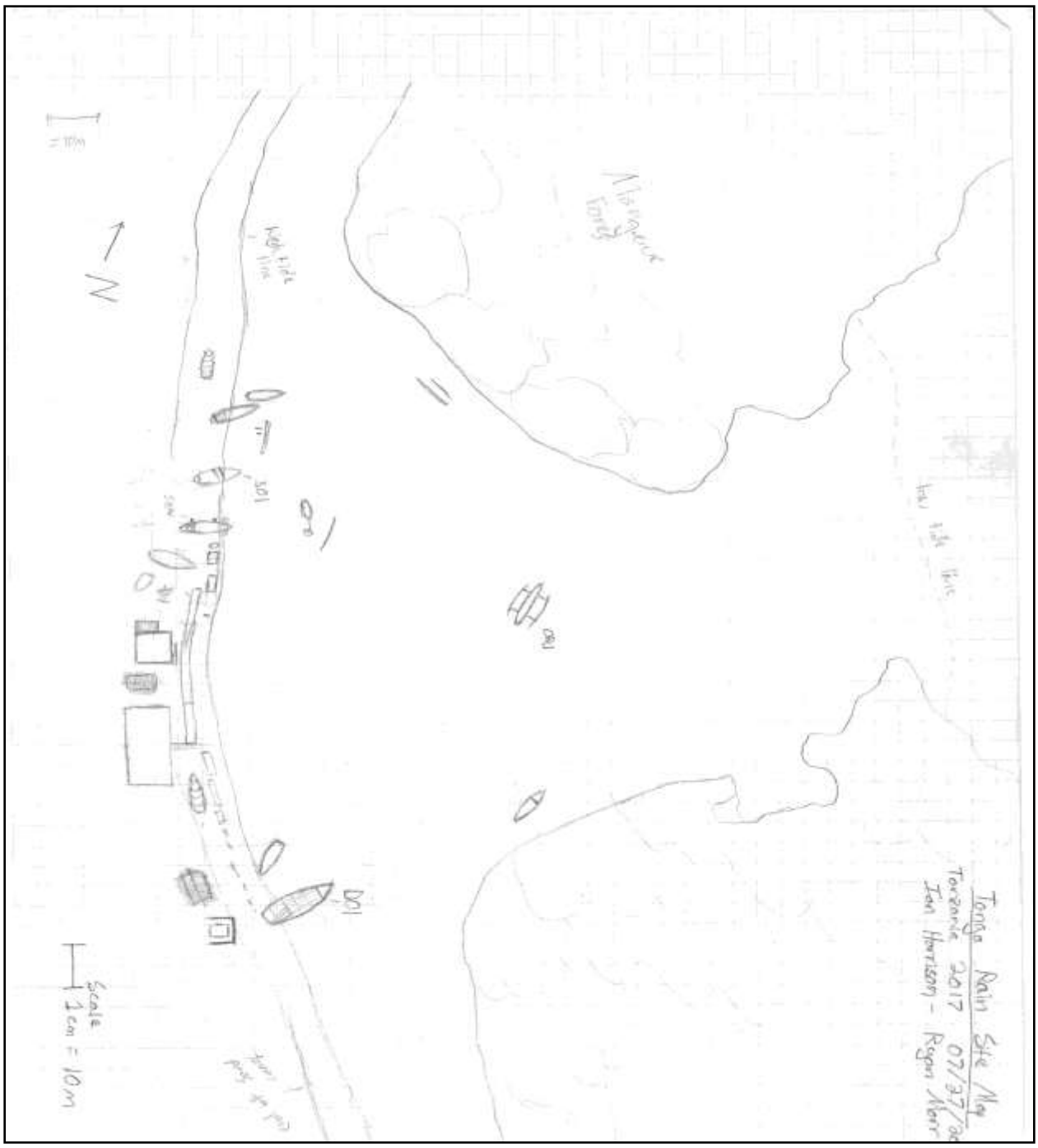
APPENDIX K: Archaeological Site Maps of Survey Areas and *Sapa* 1 Vessel Recording



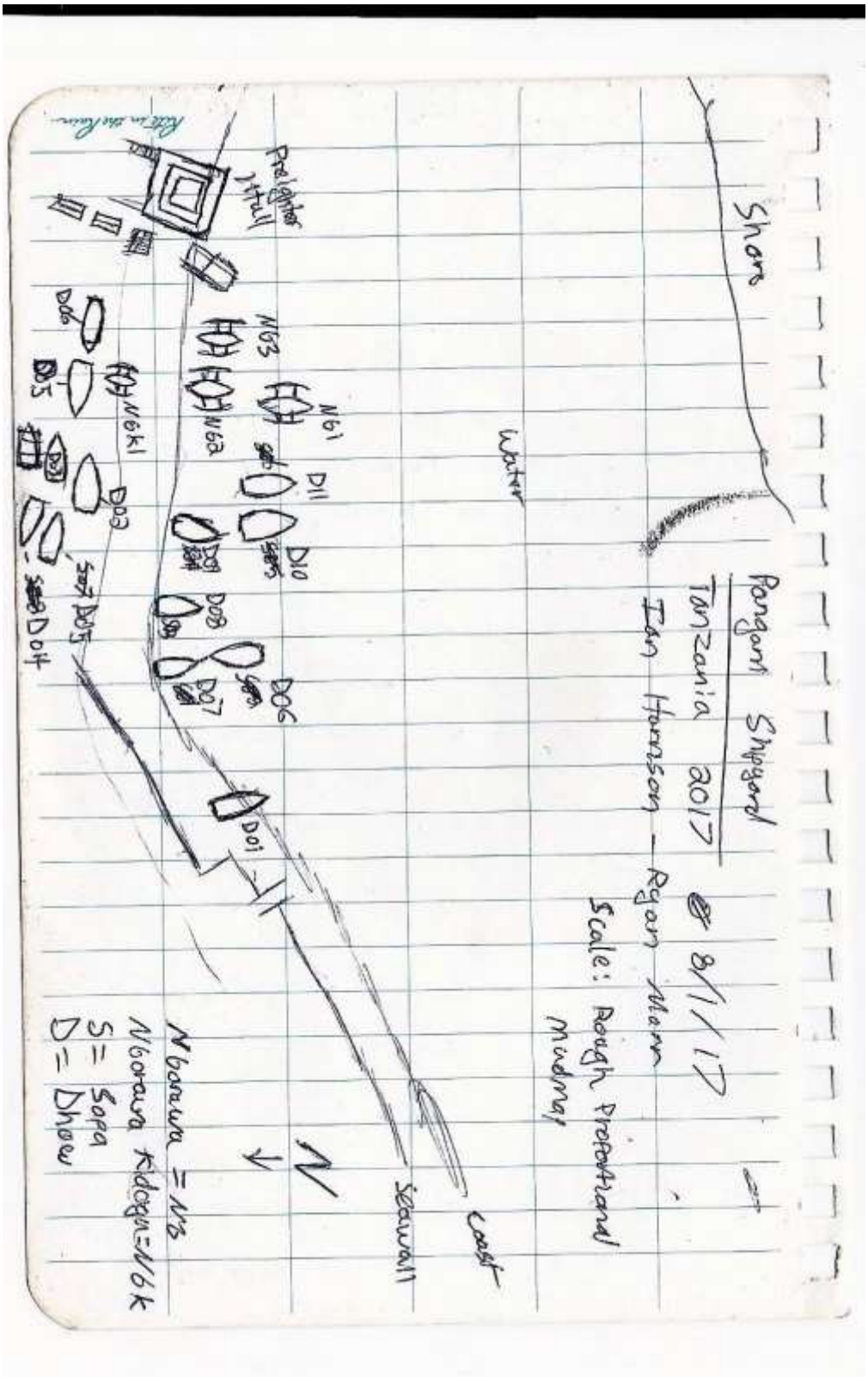
Tongoni Dockyard Site Map (Ian Harrison)



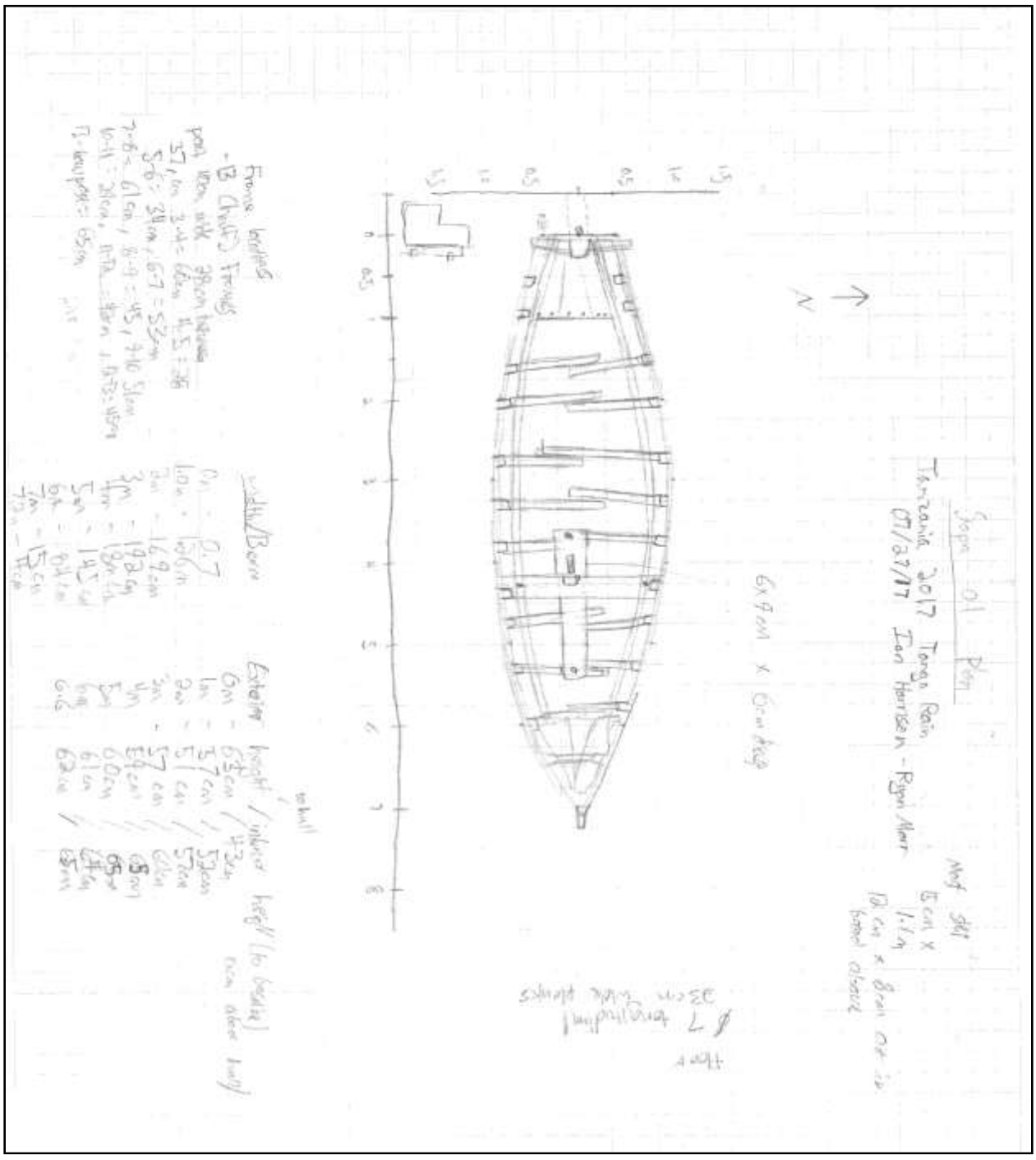
Tongoni Shipyard (Construction Site) Map (Ian Harrison)



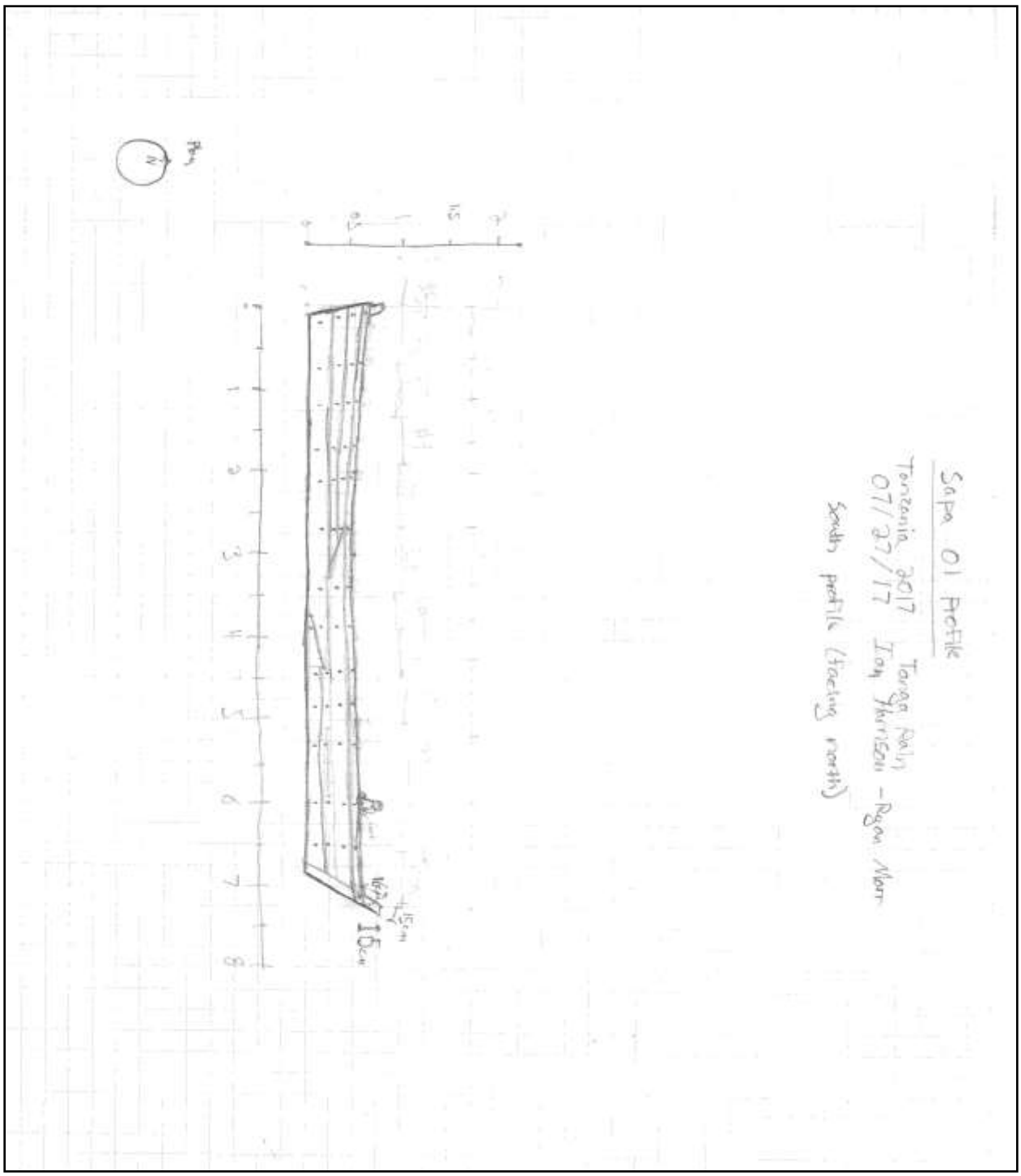
Tongoni Inlet Site Map (Ian Harrison)



Pangani Boatyard Site Map (Ian Harrison)



"*Sapa* 1" Vessel Scale Drawing (Plan View/ Ian Harrison)



"*Sapa* 1" Vessel Scale Drawing (Profile View/ Ian Harrison)