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"Waste Is Not Just Waste Anymore": Deconstructing the Relationship between Sustainable Waste Prevention and Individual Socio-Demographic Characteristics (The Juxtaposition of Ushongo Mtoni Village and Moshi Urban, Tanzania)

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“Waste Is Not Just Waste Anymore”: Deconstructing the Relationship between Sustainable Waste Prevention and Individual Socio-Demographic Characteristics

The Juxtaposition of Ushongo Mtoni Village and Moshi Urban, Tanzania

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THE GEORGE WASHINGTON UNIVERSITY, CLASS OF 2020
International Development and Global Bachelor’s

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Abstract

I am going to tell you a story about humans—their lives, livelihoods, environments, and their individual relationships to sustainable waste prevention. As developing countries, such as Tanzania experience economic growth, waste overflow and proper waste disposal become even more arduous challenges. Thus, it is becoming increasingly important to explore sustainable solutions such as waste prevention. Through conducting semi-structured interviews in two distinctly unique locations, Moshi Urban of the Kilimanjaro Region and Ushongo Village on the coast of Tanga Region, Tanzania, I explored how levels of awareness and involvement in sustainable waste prevention practices, specifically reducing, reusing, and recycling, contrasted in these sites. Drawing from these interviews, I wrote short narratives through various socio-demographic characteristics of individuals, such as gender, age, education, and profession, to evaluate the importance of each variable in influencing awareness and involvement levels in waste prevention. By speaking with each individual, I hoped to uncover a deeper understanding of the relationship between people and sustainable waste prevention based on their socio-demographic backgrounds and residency, and in reaction to larger environmental issues such as waste pollution and climate change. In completing this study, I found that waste prevention may be a possibility for the affordable and easy introduction of sustainability into developing communities, such as those I immersed myself in for this project, which may not have the resources for supporting large-scale sustainable development initiatives. Nevertheless, there is still a long, long way to go if implementation and use of these methods are to be successful. To effectively help mitigate waste pollution, and thus climate change on a larger scale, education, specifically education regarding each waste prevention method and the importance of the environment, is needed. Although there is a long way to go, my findings also illustrated the power human decision and effort has to motivate greater change for a sustainable future. Whether on a government or individual, global, national, or local level, people hold the greatest power for change.

Keywords: climate change, waste pollution, sustainable development, waste prevention
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INTRODUCTION

“Sometimes I just feel helpless.” These are the words of a young woman who lives on the Ushongo coast. Her name is Megan. She graduated from the University of Miami and moved to Tanzania four years ago. Now, she is twenty-eight years old and runs an Airbnb with her husband, Mweda, along the Ushongo beach. “Twenty years ago, there was nothing on this beach,” she says. “Now, people here litter all the time. We try to clean up after ourselves because we have to. There is no waste removal system so you deal with all of your own waste.” I ask her if there are any communities in the area trying to implement change. She responds, “There are no new movements for clean up.” And even more importantly perhaps, she says, “This is actually a deep-rooted issue starting with the government since the government does not provide proper education. Environmental issues are not a concern.” She continues, “This Airbnb was built over one hundred meters from high tide, and in the past year, high tide has risen to our front doorstep.” She remarks on how sometimes, high tide splashes into the outside dining area at the lodge next door called Mike’s Beach Cottages. “Mike has lived here his whole life and never seen anything like that.”

Her story represents just a few of the causes and effects of climate change. Every day, our global society faces a growing enormity of challenges due to climate change. In addition to rising sea levels such as Megan noticed, planet Earth is experiencing a rise in global temperatures, a loss of polar ice caps, an increase in extreme weather conditions, and widespread environmental degradation. Climate change is a trickle-down effect. Although part of the cause can be attributed to natural factors, most of these issues stem from excessive greenhouse gases released into the atmosphere due to anthropogenic activities. Humans are the majority of the cause.2

Greenhouse gas emissions are the byproducts of countless day-to-day activities; from driving a car to charging a cell phone, to heating a house, creating a new product, even raising livestock.3 Due to these daily activities, not only are excessive greenhouse gases emitted into the atmosphere directly, but the production of waste is also created every single day. Liquid waste, solid waste, organic waste, hazardous waste—all kinds of waste. Through this, one can see how consumption leads to waste production which can consequently create disastrous levels of pollution. Uncontrolled waste contaminates and accumulates in our water bodies which negatively impacts all other ecosystems in the long run. An example of this is the Pacific Garbage Patch—one of multiple underwater garbage patches spanning hundreds of miles in the middle of the Pacific Ocean and holding all types of debris, such as light bulbs, toothbrushes, fishing lines, and minuscule pieces of plastics.4 Additionally, overflowing waste contributes to air pollution through the emission of carbon dioxide and methane greenhouse gases,5 which constitutes an infinite “vicious cycle” of climate change and global warming.6

No matter whether you truly believe in the science behind climate change itself, waste pollution affects every living thing on this Earth. Thus, improving material consumption patterns and implementing

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1 Megan, Interview by Author. Ushongo, Tanzania, (8 October 2018).
sustainable waste management systems is significant nonetheless.\(^7\) Such waste prevention strategies could fuel solutions for reducing excessive greenhouse gas emissions in the near future.

To better understand why sustainable development, including waste prevention, could be the most effective, efficient, and realistic solution for mitigating current and future climate change effects, we must understand each as separate entities. “Sustainability is a balancing act.” According to the United Nation’s “Report of the World Commission on Environment and Development: Our Common Future,” sustainable development “meets the needs of the present without compromising the well-being of future generations.”\(^8\) Waste prevention, also known as waste reduction, refers to reducing the amount of waste produced.\(^9\) An example of this includes purchasing items in bulk in order to reduce the amount of waste packaging that must be managed in the future.\(^10\) Waste prevention is constituted by three methods. Reduce, reuse, recycle—otherwise known as the “three R’s of the environment.” In the waste reduction hierarchy of reduce, reuse, and recycle,\(^11\) reducing is considered most important because it ensures that waste does not get created from the source and therefore does not lead to additional waste management costs associated that would be incurred at the recycling stage. Reusing items is also a major component of waste prevention because you can reuse what you cannot reduce.\(^12\)

Sustainability and waste prevention combine together under the United Nations’ Sustainable Development Goals, goal twelve: “Ensure sustainable consumption and production patterns. Target 1: By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle; Target 2: By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse; Target 3: By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature.”\(^13\)

Although I have only been in Tanzania for just over three months, I have been afforded the opportunity to immerse myself in many unique environments. From small suburb neighborhoods to large urban cities, coastal regions, and extraordinary protected areas. All of these areas have one major commonality—trash. Even though proper waste disposal and waste overflow is a global concern, the issue becomes more severe in developing countries such as Tanzania. These countries are vulnerable because they may not even have access to the resources needed to support basic needs, let alone sustainable waste prevention. In Tanzania, however, things seem to be changing. Slowly but surely, sustainable waste management is becoming more prioritized as a national issue.

In larger cities such as Dar es Salaam and Arusha, more and more waste management and recycling companies are being established. In 2014, a company called The Recycler was established in Dar es Salaam. This company provides waste management and recycling services to large corporations whose manufacturing and production have a large environmental impact on the city. Moreover, the company is establishing recycling collection points around the city and has thus far set up about twenty-five points.\(^14\)

The Recycler’s motto “Waste is not just waste anymore,” illustrates the dire need to manage waste in compliance with international sustainable environmental standards.15

Because of the growing concern for proper waste management in Tanzania, it is increasingly important to explore sustainable solutions such as waste prevention strategies. This study explores how levels of awareness of and involvement in sustainable waste prevention practices, specifically reducing, reusing, and recycling, contrast in two distinct locations, Ushongo Mtoni Village (rural village town) and Moshi Urban (urban city center), based on socio-demographic characteristics of individuals such as gender, age, education, and profession.

Through this project, I attempt to discover if different socio-demographic variables affect varying levels of awareness of and involvement in sustainable waste prevention. My themes for this study are constituted by the diverging socio-demographic variables I will be studying (gender, age, education level, profession). However, other themes include well-being and quality of life, environmental conservation and importance, sustainable development, and climate change. The main goal of my study is to uncover a deeper understanding of the relationship between individuals and sustainable development based on their socio-demographic backgrounds and residency and in reaction to larger environmental issues such as waste pollution and climate change. I hope to furthermore showcase the intimacy of individual human interconnectedness with our environments, and how this relationship has the power to motivate greater change for a sustainable future in this shared world.

Megan’s story above is just one of many. I will present my Independent Study in the form of short narratives of individual relationships to sustainable waste prevention because understanding the individual is critical to understanding the whole of any issue. Moreover, I will write from a variety of diverse individual perspectives regarding waste prevention in hopes of providing greater insight into a plethora of complex responses and adaptation to climate change as an ongoing struggle.

This paper is divided into three main sections. First, an introductory section in which I will discuss my study sites along with the methodology, ethics, and limitations involved in the creation of this project. Following will be a two-part book consisting of two sections each recounting short narratives through the lenses of various socio-demographic characteristic perspectives, and finally, a concluding section in which I discuss my findings, conclusions, and recommendations for further study.

Study Sites

I conducted this study in two different locations—urban city versus rural coastal village.16 Two divergent study sites were chosen due to the importance of understanding the contrast between such locations regarding awareness and practice of waste prevention strategies. More importantly perhaps, in storytelling, there is a necessity for diversity among the voices who share their stories. The unique perspectives originating from these regions provided the perfect platform for this essay.

My first study site was Moshi Urban, Kilimanjaro, also known as “Moshi Municipal,” Kilimanjaro. This district has an approximate population of 185,000. However, when combined with Moshi Rural district, the two areas total approximately 652,000 residents.17 The distinction of Moshi Urban is especially important because, while in Moshi, I stayed specifically within city center limits when searching for participants. I chose Moshi as my first study site because of its reputation for being one of Tanzania’s cleanest cities. Although I was unsure if Moshi specifically supported any sustainable development projects,

16 Note: Maps of study sites can be found in Appendix III.
I had hope that its clean city status would be in part due to government and community-based waste management projects.

My second study site was Ushongo Mtoni Village, Tanga. According to my translator, Mwindadi, Ushongo Village has an approximate population of 500 inhabitants. During the Independent Study preparation week, I discovered that the majority of the community in Ushongo was highly unaware of the concepts behind sustainability and waste prevention practices such as reducing, reusing, and recycling.

Methodology, Ethics, and Limitations

To complete this study, I talked to people about their lives, livelihoods, environment, and relationships to sustainable waste prevention. I completed a total of sixty-five (65) in-depth, semi-structured interviews with various community members from each location and used these interviews to write short narratives about individual relationships to sustainable waste prevention and, on a larger scale, climate change and environmental issues.

In all, I spent November 2nd-11th conducting thirty-five (35) interviews in Moshi and November 13th-22nd conducting thirty (30) in Ushongo. In each community half of the interviews were male and half were female. In completing my stories, however, I used a total of thirty interviews from each community; I chose thirty interviews (which still ensured a half female-half male sample) out of the thirty-five I conducted in Moshi. I intentionally excluded five interviews conducted in Moshi because I felt that participants were not as motivated or comfortable as others, and thus, it felt wrong to include them in my final stories despite informed consent.

I conducted semi-structured interviews to allow participants more freedom in expressing their views creatively and personally in a permissive, open-ended environment. Interviews would typically last anywhere between thirty minutes and one hour depending on what the person wanted to share. The back and forth of interviews, rather than strictly “yes” or “no” questions, also helped me learn about some things I did not even seek to ask about. I rather enjoyed the descent down the various paths my interviews led me. I used interviews to complete my project instead of empirical data regarding waste management and waste prevention because I believe in the importance of stories. Narratives are extremely essential to understanding both larger issues and solutions to waste pollution and climate change because people’s perceptions and personal backgrounds are often more influential than facts.

I conducted interviews in two distinct locations, Ushongo Mtoni Village and Moshi Urban, in hopes of exploring the contrasts between the two places and their communities in regard to waste prevention. Moreover, I hoped these locations would combine purposively in my narrative because one is a coastal location and the other lies inland. In each location, a local Tanzanian helped me translate my interviews. In Moshi, Rafisanjani, a recent graduate from the College of African Wildlife Management, Mweka helped me through my time in the city. In Ushongo, Mwindadi, a local hotel worker, guided me through the village. Each translator was compensated for his services in the form of 25,000 Tanzanian Shillings per day of translation. With the help from each of my translators, I randomly, however simultaneously purposively, selected various community members in each location based on their socio-demographic characteristics in a manner that tried to ensure equal representation of each characteristic in question: gender, age, education, and profession. In Ushongo, participant selection was quite easy seeing as Mwindadi personally knew almost every individual residing in the village.

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18 Note: This is a very broad estimate. Other villagers noted population estimates ranging from 400-700 residents.
19 Note: Copies of my English and Kiswahili interview guides are available in Appendix I.
20 Note: This is the equivalent of approximately $10.87 U.S. Dollars. This is the official SIT Tanzania translator daily compensation rate. The average gross wage of a domestic Tanzanian worker is approximately 388 Tanzanian shillings per hour (~$0.17 U.S.D.). “Cleaners and domestic workers in Tanzania earn 20 times less than in the United Kingdom,” MyWage, (2018). https://mywage.org/tanzania/income/global-wage-comparison. Retrieved 1 December 2018.
In the formulation of this project, numerous possible participant risks and discomforts were considered, including loss of confidentiality, discomfort resulting from personal interview questions, and recording interviews and videos. No sensitive information concerning any of these risks or discomforts was gathered, and potentially sensitive questions regarding age and education level were asked at the very end of each interview. Before recording interviews, explicit written and verbal permission was obtained. Additionally, I filmed a short video in each location to help illustrate the contrast between the environments and surroundings of each site. When filming, no human subjects were featured up-close or from the front; however, if any people were nearby the filming areas, I obtained verbal consent to film before beginning.

Before I asked any interview questions for my study, each participant signed an informed consent form to ensure that every person understood who I was, my study topic, the purpose of my project, and that participation was completely voluntary and could be withdrawn at any time. In addition, prior to the interview, participants were informed that their privacy could be protected under a pseudonym or anonymously. Participants were also free to withhold any information they felt necessary. In the beginning, I did try audio-recording a few interviews, however, I found it was actually easier to simply note interviews by hand. The time in between asking each question, listening to the answer, and translating it back to me in English allowed for much more time than I previously thought I would have.

In all, there were many challenges and limitations that I encountered in the process of completing this study. Although in the end, I am truly pleased I conducted semi-structured interviews, the entire interview process proved more difficult than I initially thought. From finding participants to introducing myself, explaining my project, asking questions, listening to answers and then to translations, writing, and listening again, the time and effort each interview required was extensive.

Working with a local translator in each location also stressed the importance of both teamwork and empathy. In the beginning, it was very difficult to explain the terms “reduce, reuse, recycle,” one of the most integral components of my study, to both translators. It took three full days of continued explanation for my translator in Moshi to almost fully understand. In fact, I’m still not quite sure my translator understood by the end of my time in Moshi. It was very frustrating at times, but at the same time, it was no one’s fault. This difficulty undoubtedly resulted in implications for my interviews and how individual participants understood reduce, reuse, and recycle as well. I am sure there were many words lost in translation in every single interview. Additionally, translations were limited by the limited vocabulary of each translator.

In recording my interviews, I simply took handwritten notes after I realized it was easier than audio-recording. Despite relative ease with following my participants and translators, still, sometimes, I may have missed important words or thoughts.

In appreciation of individual participation in my study, I gifted each participant an Asante [thank you] in the form of an average of 1,500 Tanzanian Shillings. However, I did not inform participants of Asantes prior to completing any interview because I did not want to influence the motivation behind participation or participant answers. I did not want people to think that I am looking for any certain answers. I was not—the purpose of using the methods I did was to gain a greater understanding of many unique perspectives.

Moreover, as a guest in each of these communities, I cannot truly understand their lives, motives, perspectives. I cannot truly write as if I were them, or know their stories as they do. However, in the creation of this body of work, I tried my best to ensure that both my own and my translators’ interpretations of people’s words and stories held true to their own.

Finally, this study does not paint a completely holistic picture of the people of Moshi or Ushongo. That would have been impossible in the short time-period I worked with. However, through purposive random sampling, it does aim to represent many diverse voices in each community.

Note: This is approximately $0.65 U.S. Dollars.
THE STORIES

Preface

MOSHI URBAN

Moshi is nice. Environment is well. Safi [clean]. I live in an environment that is clean. Normal smell. Good weather. Climate, only nice change. In the past, environment was not looking very good compared to now. Sichafu [not dirty], Moshi is not dirty. Clean water. Climate of Moshi is a good climate. No such areas that are dirty. It’s normal for me. Nice air. Now, planting trees, the environment is better. There is no waste here. Waste has decreased since government put law. Hamna mchafu [no waste]. The government makes sure everything looks clean. 95% is good, not pollution. I like living here.

People put waste everywhere. The climate is hotter even compared to Dar es Salaam. Middle of the city, I don’t see many trashes but when I go to other areas, there are many trashes. Environment looks nice but there are places where the environment is not good, like by industries. Waste appears in every part of Moshi. I don’t know why it’s always sunny. I am not happy about these conditions. Now, it’s scorching. Water has been polluted already. You see, Moshi is good, but not as good as before. Bad smells. Here is trash, noise, dust, different types of smoke because of cars; people even dump water from the toilet onto the street but I know this is just the nature of the city.

These are some of the things people notice about the environment in Moshi.

USHONGO VILLAGE

Ushongo, I think it is nice. I live well. I like the environment. If I want to have a fish, I can; fish are very close to me. Weather is good. It’s normal. I don’t see any trashes. To me, the environment looks good. There’s not a lot of waste. From the day I got here, I think it looks the same. Not any changes.

A lot of plastic bottles wash up on shore. People just throw bottles even on the beach. The water is moving toward us. There is disappearance of some species in the ocean. Anywhere you go, you can find any kind of waste. Waste is a big problem—plastic bottles, bags, coconut leaves. Environment looks dirty because of people. Some trees fall down by the ocean because of erosion. Ten years ago ... there were a lot of mango trees and coconut palms; now, things are different and I am not happy. Sifurahi [not happy]. Those palm trees close to the ocean are dying; those people living there want to move further back because it’s not safe there. The ocean is rising. Waste is a lot, everywhere. There is no big trees; people are cutting them down. A lot of empty bottles coming from the ocean, from Zanzibar, from ships because people just drop them down. Back in 1999, everything was green, no one was struggling.

These are some of the things people notice about the environment in Ushongo.

These are not the voices of everyone, but they are voices of many who are connected to our shared world. These voices illustrate unique and diverging perspectives on the impacts (or lack thereof) of climate change, global warming, and specifically, waste pollution.

Is waste truly a problem? Well, it depends whom you ask. I believe waste pollution is a huge anthropogenic contributor to climate change. Furthermore, the effects of climate change can no longer go unnoticed, and will only continue to worsen if ignored.

So, if waste is a problem, what can you do to solve this problem? Sustainable development, including sustainable waste prevention, could be the most effective, efficient, and realistic solution for mitigating current and future climate change which affects our entire globe.

In the following books, I relay short narratives regarding sixty individual relationships to waste pollution and subsequently, sustainable waste prevention strategies, based on socio-demographic characteristics including gender, age, education, and profession. I write through the lens of each attribute to
explore the importance of different socio-demographic variables in influencing awareness and involvement levels of sustainable waste prevention practices, and therefore, larger efforts to protect our environment and the future of our livelihoods.

The majority of my narratives consist of dialogue utilizing direct quotations between myself and the people I interviewed. Most quotations have been orally translated from Kiswahili to English by my translator in each community. When conducting my study, many people did not know what the terms *reduce, reuse, and recycle, as well as compost*, meant—at least in terms of how they are widely known and used in the United States, my home country. Therefore, I defined them as the following:

I. Reduce: To reduce waste, *kupunguza uchafu*, means to prevent producing a lot of waste, or to produce less waste by using alternatives. This method targets the problem of waste at its source. If you don’t produce any waste in the first place, then you don’t have the issue of getting rid of it. For example, using a basket instead of plastic bags. Another example is to reduce the use of electricity by lighting lights only at night and turning off lights during the day or any time they are not in use. This helps reduce electricity consumption and reduces costs too. Another example is to buy more durable products so that you don’t have to throw them out as often.

II. Reuse: To reuse items, *kutumia kitu baada ya kutumia*, means to continue using something again after using it once instead of throwing it away. For example, you can donate old clothes to other people so they can reuse them after you don’t need or want them anymore. Another example is washing bottles after use and finding other purposes such as carrying milk or oil. You can also use both sides of a piece of paper before throwing it out.

III. Recycle: To recycle, *kusindika*, means to convert old waste items, such as plastic (i.e. water bottles), glass (i.e. soda bottles), paper, and aluminum—just a few of the most common recyclable materials—, into new items. This manufacturing is done at the industry and new products are then sold again.

IV. Compost: To compost means to decompose/convert organic waste items into fertilizer (natural process of recycling organic materials like leaves, vegetable scraps, manure and turning it into soil fertilizer, conditioner).

When explaining these terms to participants, I worked with my translators to produce examples that would be relatable in their respective communities. These explanations and examples were extremely important in facilitating a discussion about sustainable waste prevention, especially if a participant was unaware of the exact actions involved under each method. Three other terms I defined for the purpose of this study are *(full) awareness, partial awareness, and involvement.*

I. (Full) awareness: full knowledge of and ability to explain reduce, reuse, and recycle in some manner.

II. Partial awareness: knowledge and ability to explain at least one waste prevention method.

III. Involvement: practice of reduce, reuse, and/or recycle in some manner.

In all, I hope that, through completing this narrative study, I can better comprehend the human aspects contributing to detrimental issues arising with environmental issues such as waste pollution and thus climate change, and concurrently, human contribution toward the solutions sustainable development may afford these issues.

22 An important note: Reducing waste and reusing items can both be done by people at home. Everyone can use these ways. Recycling is done at an industry, a recycling plant. We cannot complete the entire recycling process alone at home. We must collect recyclable wastes at home to be taken to recycling industries.

This book contains two variables I consider to be mostly unchangeable. Immutable, innate. Although I actually find that gender is quite fluid in this age, I have still included it in this book due to the greater distinction between other extremely changeable characteristics.

PART I: JINSIA [Gender]. Gender of a World Divided.
All around the world, the issue of gender remains a dividing line. Figuratively, literally, and physically. In Tanzania, the same holds true. Throughout my time in Tanzania, I have found that gender plays a distinct role in determining social stratifications, roles, and responsibilities in the community.

Here, it is generally the responsibility of a woman to get married to a man. Following marriage, it is also typically a woman’s responsibility to conduct the majority of the reproductive work which revolves around the household. Consequently, many times being a woman in Tanzania means limited access to post-primary school education and limited access to certain professions.\(^{24}\) Thus, it is men in Tanzania who typically complete higher education and are then responsible for productive work. Earning the majority of the family income and working away from home.

It is because of these gender divisions that I expected men to have both greater awareness and involvement in sustainable waste prevention.

MOSHI URBAN
Wanawake. Women.
We walk everywhere. Rafisanjani suggests we walk to the market to speak with some of the female community of Moshi. It is blazing hot. We sit down with a woman selling bananas. Her name is Asia. She is from Moshi. We wait, we listen. “I like the place where I do my job. It’s nice and clean. A nice place to do business. With my work, the waste is only banana peels,” she remarks. Every market day, she collects her banana peels and someone comes to take them away. She says, “There are special people who bring trash to a special area. Any banana peels I have left over, I like to reuse. I like reusing because instead of throwing banana peels away, I can use them to feed to livestock.”\(^{25}\)

Asia’s knowledge of waste prevention methods is only partial. This knowledge is nevertheless important. The meaning of reuse encapsulates finding another use for an item so that it does not become waste. Her reuse of banana peels is one way that many would never think of as reuse. However, using her unique methods, she ensures that her banana peels do not become waste.

We continue. We walk up to a young woman. She sits behind a small shoe stand. “My name is Mwanahamisi,” she tells us with a smile. “I was born here in Moshi and I don’t remember an exact time when the environment started to change. But the changes are only good. There are no kinds of waste,” she says confidently. I ask, “Do you have an idea what it means to reduce waste, reuse items, or recycle?” She says no. She fiddles with her bracelet. Rafisanjani helps explain the meaning behind reduce, reuse, and recycle that we have discussed. She sits, pondering, “Well, not exactly me. I’ve never done those things. But other places I know, they take old banana peels, place them in the sun to dry, and then use them as fuel for cooking fires.”\(^{26}\)

\(^{25}\) Asia, Interview by Author. Moshi, Tanzania, (3 November 2018).
\(^{26}\) Mwanahamisi, Interview by Author. Moshi, Tanzania, (2 November 2018).
Two ways to reuse banana peels. At home in the United States, I’ve never done anything with a banana peel except compost it or simply dispose of it. The methods Asia and Mwanahamisi have discovered for waste prevention are extremely important. We don’t think about these kinds of ways at home. We live different lifestyles. You see, as a developed country, the United States has the resources to support a more conscious, sustainable lifestyle. In the U.S., many Americans use waste prevention methods in a deliberate effort to live a more sustainable, waste-free life. Many developing countries do not have the same resources we do in the U.S. These countries cannot always support large-scale sustainable development initiatives. Nonetheless, the three R’s can be achieved by everyday people at home. You don’t need to be a millionaire to convert old banana peels into fuel for fires. Thus, waste prevention methods, especially reduce and reuse, represent opportunities for easily and affordably incorporating sustainability into developing communities. Here, in Tanzania, people use these simple ways, whether purposively or not, to make life better all the same.

Wanaume. Men.

When you walk in the street, you don’t see much trash. However, this is an issue that becomes apparent when speaking to the people of Moshi. Rafisanjani and I head to the city bus station complex. Here, there are many small shops. Along the way, we speak to Juma. He has spent the past sixteen years in Moshi. He tells us, “In the past, humans spreading things everywhere. All trashes, they have been collected to one place and they stay there a long time. Now, people increase and infrastructure is not very good because people affect that. People and infrastructure both increase waste. Waste is a problem here. I am not happy about these changes.” He looks solemn.

I ask about the three R’s, “What could be done about waste? Do you know about any of these methods?” He replies, “Reuse and recycle, I don’t really know. To reduce the amount of waste is to keep the amount [of waste] less. I haven’t used any of these methods. I haven’t seen anyone else using these methods.” However, he emphasizes that all methods are important. “Recycling is important because it will provide new items for us instead of tossing trashes,” he adds. Now, he points to a plastic wrapper that belonged to a watch a customer just bought. “Plastics will have a special place to be put. All of these methods help the environment. But first of all, people should be educated on that. Here, there’s not much education on that. To reduce waste, people should be given education like to have a fabric bag [reusable bag] instead of plastic.”

He thinks back to before. Trashes. Waste. Bad smells. Diseases. Scorching weather. “I don’t know [if these changes will continue in the future]. Only those educated may know,” he insists. Rafisanjani looks to me and says, “People like us.”

I know I am privileged to be educated. However, in the United States, I rarely think about this privilege. Many have access to education; many are educated. In Tanzania, the same does not always hold true. Here, education is respected. Education can be seen as the key to many matters in life, including understanding and employing waste prevention strategies.

Walking to lunch one day, we meet a man named Prosper. He has lived in Moshi for three years. He speaks passionately, “There is an issue between the environment and economy. Development changes will make the environment suffer, but the economy will thrive for the same reason.” Which one should we choose? He is a businessman, a restaurant worker. “I know my business produces waste. Food waste, air pollution smokes from our generator, papers, bottles, and so on,” he says. He continues, “I do try to preserve waste in good conditions, sometimes burning or burying. I also know reuse. With charcoal, you can use it to burn

28 Juma, Interview by Author. Moshi, Tanzania, (11 November 2018).
Although he knows development and business can harm the environment, if he doesn’t run this business, how will he survive?

Is this truly a matter of environment versus economy like Prosper said? In any case, this no simple matter. Many times, people who carry out activities devastating to our environment say they do so in defense of our greater economy. However, the economy and environment are far from separate entities. To foster a thriving economy, a healthy environment is a necessity. Climate change is one of the greatest threats to our economy. In the long run, those who claim they are defending the economy at the sake of the environment are probably causing greater exacerbation of future economic hardship.

Altogether in Moshi, women and men were almost equal in regard to knowledge of waste prevention practices. In fact, a total of eleven out of fifteen females had at least partial awareness of such practices. This surpassed male knowledge slightly, as ten males out of fifteen had at least partial awareness of waste prevention practices. This came as a bit of a surprise to me due to my previous presumptions along with my experiences living in Tanzanian society, an enduring patriarchal society.

On the whole, only one male and one female—both young, university-educated individuals—had full awareness of all three waste prevention methods. In this case, I believe the higher level of education, instead of gender, of each individual represents the reasoning behind awareness.

Concerning the practice of waste prevention, women and men were completely equal. Ten (10) females and ten (10) males were involved in some manner, and the remaining five females and five males had no involvement. Female involvement in waste prevention involved “using things that cause less trashes” such as baskets instead of plastic bags, using reusable bags, reusing old clothes, reusing old cans. Male involvement involved recycling (composting) dry grasses, reusing old phone and electronic pieces, reusing water (such as using laundry washing water to help clean another area again before tossing it, reusing old bottles and dishes, donating old clothes, reusing utensils.

Why exactly is this the case for female and male awareness and involvement? I am not completely sure. However, as I progressed through various conversations with the people of Moshi, it became apparent that involvement in sustainable waste prevention is more dependent on types of profession rather than gender. Banana seller reusing banana peels for feeding livestock; restaurant worker reusing charcoal for cooking. These are just a couple examples from the stories above.

Overall, if you take a look at the stories above, most people’s involvement in waste prevention relates in some way to their professions. These correlations will be further discussed in Book II, Part IV, Kazi [profession].

USHONGO VILLAGE
Wanawake. Women.

In Ushongo, a walk through the village takes no longer than thirty minutes. As I walk with Mwindadi one day, we find Mwansiti. She has lived in Ushongo Village for thirty-five years now. We sit with her as she weaves coconut leaves for roofing. She says the weather is good here. She doesn’t see any trashes. “Bahari [the ocean].” That is the only big

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29 Prosper, Interview by Author. Moshi, Tanzania, (5 November 2018).
change. She notes, “The environment now is better than previously,” she gestures around us, “people are educated now.” She points to the sand beneath us, “this is not supposed to be here,” she points to a small piece of trash a couple feet away. So, I ask, “Do you know anything about reducing waste, reusing, and recycling?” She contemplates briefly and then responds confidently, “To reduce waste is to collect it and burn it. To reuse is to wash and keep things again. To recycle is to take waste to a hole and burn it.”

In both Moshi and Ushongo, people stress different definitions of the three R’s compared to those of Western culture. Elizabeth, a young woman from Moshi, says, “I think to reduce waste is to use plastic and then take it to the industry.” I believe these differences in definitions and impressions occur because waste prevention methods are not an integral part of Tanzanian culture as they are in many Western countries. In elementary school, at age ten, the phrase “reduce, reuse, recycle,” was drilled into my brain. It’s a phrase many learn during primary education. We watched videos, completed worksheets, even sorted recyclable materials in class. It’s hard to tell someone that reducing waste, in terms of my definition, is not simply organizing, tossing, burning, or burying trash.

Mwindadi helps explain the three R’s. Mwansiti stops weaving coconut leaves, listens, and says, “I don’t use any of these methods. It’s the kind of life I am living. The clothes are just for me. I don’t like drinking bottles of water. There’s nothing that can connect me to this … I don’t have this education … I am busy with my life.”

“What about the community? Does the community support these ways?” I ask her. She answers, “There’s no means that the village is taking to protect the environment because everyone is busy with their lives.

Many times, when I ask people why he or she or the surrounding community is not involved in protecting the environment or using waste prevention methods, the answer is “I am busy. I don’t have time. I am tired.” Other times the answer is “we don’t get government order, so it’s hard.” This does not seem to parallel many efforts in the U.S. In the U.S., it’s not a matter of government versus individual, rather a combined effort. Anyone can help protect the environment. It’s just a matter of passion and commitment. Sometimes, people also feel that education and societal norms restrict involvement. “I don’t have this education, this knowledge,” or “it’s not the system, for this society, no.” Thinking back to what Juma said in Moshi, “Only those educated may know [about the continuation of environmental changes].”

Education seems to be a continuing trend throughout this study. A link to understanding and applying waste prevention methods. Not necessarily higher education, rather specific education regarding issues such as environmental conservation and waste management is needed before people can be expected to contribute to protecting the environment.

The next day, we meet Zena. She has lived in the village for eleven years. “I live here because I am married here,” she explains to us. “From the day I got here, it’s big changes. The ocean is coming closer. Previously the environment was good. The village looked green.” We sit with her on a small bench under a thatched roof awning. It starts to rain. “Waste is a problem,” she gestures around us, “plastic bags, lots of bottles. All waste from this village.” I ask, “What could you do about this problem? Do you have an idea

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31 Mwansiti, Interview by Author. Ushongo, Tanzania, (15 November 2018).
32 Elizabeth, Interview by Author. Moshi, Tanzania, (7 November 2018).
33 Manase, Interview by Author. Ushongo, Tanzania, (21 November 2018).
34 Ally, Interview by Author. Ushongo, Tanzania, (14 November 2018).
35 Peter, Interview by Author. Ushongo, Tanzania, (20 November 2018).
36 Halima, Interview by Author. Ushongo, Tanzania, (19 November 2018).
37 Juma, Interview by Author. (11 November 2018).
about reduce, reuse, or recycle?" She takes a minute to think. "Reduce is like if you work with something, you can just clean it and make it look like before. To reuse, after using something, take it to the dump."

Again, we see definitions of these three methods divergent from those widely known.

She continues, “I don’t know recycle. Sijui [I don’t know].” These words were echoed by every single other woman I talked to in Ushongo. “I don’t know.” Aside from Mwansiti and Zena, no other women had an idea about any of the waste prevention methods. This contrasts deeply with the female community in Moshi, in which almost three-fourths of the females interviewed had at least partial awareness of the methods.

Mwindadi tries to further explain the three R’s. He provides the example of reusing bottles and clothes. “Hmm,” Zena considers, “I use reuse. The first one [example]. I am using soda bottles for keeping different things. My own clothes, when they get really old, I can use it to wipe my feet outside before I go into my home. Also, I can use clothes to make into a mat. These mats I am selling.”

One of the most important things I learned while talking to people, regardless of their socio-demographic characteristics, is that many people in both locations use waste prevention methods whenever necessary, convenient, and/or personally or economically beneficial to themselves. For example, Zena said she saves these old clothes to make new mats because this is more cost efficient than buying new fabrics or materials.

Another woman named Asma, who has lived in Ushongo for ten years, comments, “I am using both reduce and reuse. Most people are reusing bottles especially for kerosene, coconut oil, and milk. The same bottle every day because they don’t have the ability to buy new containers.” Both of these stories illustrate situations in which using waste prevention proved necessary, convenient, or personally beneficial to the user.

Wanaume. Men.

In Ushongo, many people say waste is a problem, especially men. Additionally, many people say they produce very little or no waste, especially men. If this is true, then where does the waste come from?

We pass by a few of the random dump spots in the village. Bottles, bags, packaging, orange peels, avocado pits, and so much more lies strewn across the sand. Chicken peck at the leftovers. It smells of a mixture of burning and cooking. Mwindadi and I keep walking. We find Mohamed sitting under a tree. He was born in Ushongo. “I like it here because I am a fisherman,” he says. However, he continues, “Since being born here, there has been the disappearance of some species in the ocean and decreasing of fish. There’s not enough fish... People cut down too many trees. It’s making it too hot. It’s cutting down on species. Less fish. The fish move farther away. We do not have modern boats. I cannot go there. With small agriculture, we are depending on rain. Sometimes, there is not enough rain. We do not get enough crops.”

“What do you think about these changes?” I ask. He speaks earnestly, “These changes will continue because there’s no plan. People don’t sit together and decide to stop. Myself, the only waste I produce is a bag I use for fishing. But when I walk around, I see a lot of plastic bags and bottles. You can find any kind of waste anywhere. It’s the way people are keeping things. They [shopkeepers] are just giving plastic bags [to

38 Zena, Interview by Author. Ushongo, Tanzania, (16 November 2018).
40 Mohamed, Interview by Author. Ushongo, Tanzania, (15 November 2018).
customers]. This is about how people think and how they can sell their business. Give people free things.”

From his point of view, the blame falls mostly on those who give out plastic bags.

“So what do we do then? How do we change this?” I ask him. I ask about reduce, reuse, and recycle and he listens intently. “Hapana [no]. I don’t know this,” he says strongly. After Mwindadi explains, Mohamed says, “For reuse, I use a towel to mop, just using around the house. Also, I have seen someone using coconut grass to be manure. Recycling is best if I have to choose one. It’s good because it’s also business. If some people tell you, you could get a little money, some people will collect and bring to the industry. If you drink a bottle of water and finish the bottle, someone will buy it and then it won’t be a problem anymore for the environment. Also, it’s minimizing production.” I am a bit confused when he says “minimizing production,” so he explains further. Say there are twenty water bottles in Ushongo. If you take them back to the industry to recycle, you can produce twenty more bottles with this converted material. No more, no less. This is what he is talking about. This is not how I would typically think of recycling, however, it makes sense.

Mohamed continues, “But actually, recycling, it is just helping to reduce waste. It’s not truly solving the problem. No one here is involved in protecting the environment because everyone is busy with their own lives. First, they need to get their basic needs. I am not involved either because I am busy with my life.”

Think back to Prosper’s story from Moshi. The economy—money—is important to society. In Ushongo, many people live day to day searching, struggling to find the means to live another day. To support their families, their children. I believe this is why I noticed a distinct emphasis on the money, business, and employment value often related to the benefit of employing waste prevention. Maliki, who was born in Ushongo, remarks, “Recycling is best because this is also giving people employment. Then, it’s not a way you need to push people to do.”41 Similarly, Peter, also born in Ushongo, says, “Recycling is best because it’s business. People will get employment.”42 On the whole, many people regardless of socio-demographic characteristics, especially in Ushongo thought the potential economic benefits of a method such as recycling would outweigh potential costs involved with initially establishing a recycling company.

Another man born in Ushongo, Manase, has yet a different view of how to solve these waste and environment issues. “Waste everywhere. I don’t produce any waste, but waste is a big problem. Kabua, kubua [big, big]. We need to reduce waste because this fights plastics which are a big problem in our village.” How to do so? “Education is the solution. People should know what to do. They cannot automatically know. Our community is not involved in helping the environment. All the people around me do not know the importance of the environment so it will be nothing if I act alone. It’s like if you take a shot of blood and put it in the ocean. It won’t actually do anything because it is so small. It won’t turn the ocean red.”43

As aforementioned, education is a major link to awareness of waste prevention. Not necessarily higher education levels, rather, specific education concerning sustainable practice such as waste prevention. Peter says, “To finish this waste problem, education is needed, especially about the importance of the environment.”44 In all, both in Moshi and Ushongo, education is thought of as solutions to understanding and implementing these waste prevention strategies.

41 Maliki, Interview by Author. Ushongo, Tanzania, (18 November 2018).
42 Peter, Interview by Author. (20 November 2018).
43 Manase, Interview by Author. (21 November 2018).
44 Peter, Interview by Author. (20 November 2018).
In Ushongo, people’s lower awareness levels of sustainable waste prevention were not surprising. Both female and male knowledge was slim compared to that of reduce, reuse, and recycle in Moshi. Based on my previous experience staying in Ushongo, I had already expected very few people to know about these practices. Overall, zero females had knowledge of waste prevention and only two males had partial knowledge. One of these males had completed primary education and the other was college-educated. I believe these low levels of awareness correlate more with personal experience than gender.

Regarding involvement in waste prevention strategies, females had a greater total involvement. Ten (10) out of fifteen (15) females were involved compared to only eight (8) out of fifteen (15) males who were involved. Motivation behind involvement in Ushongo differed slightly as well. I found that involvement in Ushongo was more dependent upon fiscal opportunity and motives for both females and males. Although, involvement in Moshi was also partially dependent on financial benefit. In Ushongo, female waste prevention practice included reusing clothes to clean and to make mats, using baskets and bowls to shop instead of plastic bags, and reusing empty plastic and glass bottles for milk, kerosene, coconut oil, and water. Male practice involved reusing fabrics, bottles for juice, milk, kerosene, using buckets for carrying items, and old towels to mop, making clothes into a flag, and using a basket for work-related activities. Most of these involvement practices related to work and everyday duties.

On the whole, my exploration of gender in both locations did not result in any significant trends that would suggest this socio-demographic variable influences levels of awareness or involvement in sustainable waste prevention. To continue my exploration, next I looked at Miaka [age].

PART II: MIAKA [Age]. Age is a Timeless Entity.

With age comes wisdom. This old adage has actually been tested before; the study’s findings illustrated that older people were better decision-makers compared to younger people, who were too impulsive.45 Despite this, I expected younger people in Tanzania to have a greater awareness and involvement in waste prevention. As generations pass, younger people are slowly being afforded greater access to higher education,46 and because there has been a continuous trend of education linking my stories, I believe this may be the key to linking awareness and involvement as well.

In exploring my findings with age, I split interviews into two age groups, a younger age group (ages 18-35) and an older group (ages 36-60+). In Moshi, each age group consisted of fifteen individuals. In Ushongo, however, it was more difficult to find people who fit into the older age category. As a result, the younger group in Ushongo was comprised of eighteen individuals, while the older group had twelve total individuals.

MOSHI URBAN

Mchanga. Young.

Today, it is raining again. Hard. Today, we meet the youngest person I have talked to so far. Her name is Flora. She is eighteen years old. She sits under a shop awning. As we walk up to the awning, we notice a man who seems to be her father sitting inside the shop. Rafisanjani asks her father for permission to speak with us. He is happy, “Of course!” Flora speaks softly, “Moshi is nice. It’s a good environment. There are no bad smells. People increase but they don’t impact the waste here. Waste is not a problem.” I ask her about waste prevention. “I know reuse,” she says, “for example, clothes and utensils, I wash and reuse. The...

best method is reduce because it reduces trashes. You can’t produce a lot of trashes when you do that.”
Flora’s awareness and involvement are partial, however, impactful. “I also use a reusable bag and do not do things like not taking many plastic materials.
I have seen a lot of people taking plastics for recycling. I don’t know the amount of money people get for recycling. Other people do reduce, reuse. They do as I do.”

They do as I do. Although some people may not consciously try to influence and motivate others to create a safe and healthy environment, their actions speak for themselves. It is like a chain reaction that is hard to be controlled.

Another day in the city. We are walking to the bus stand. We run into a young man named John.*

He is nineteen years old. He runs a small shop along the main street in Moshi. Outside his business, it is very clean. He is proud. He begins to tell us about his environment, “In past, it was nice. Good environment, not like now. Now, clearing of trees and nature leads to development..” He gestures across the street, “That CRDB bank wasn’t there until they cleared the area but now it’s there and it’s good for me even though it hurts the environment.” We ask about the three methods. He responds, “I don’t know these. I do not use these. Recycle, maybe other places do after the waste is taken from here. I do not do these but I do know attitude is important to protect the environment. Start with yourself. I like cleanliness. Know yourself first to keep the environment clean. This is a way I could reduce waste.”

Mzee. Old.

Joyce is forty-three years old. We meet her while walking back from lunch today. We sit on the steps of a small shop with her. “Even in the past it was not beautiful,” she says, “changes today, the environment looks clean but the issue of economy is tough. People have left here to try to find other business.” She speaks passionately, “Everyone tries to protect him- or herself in a good way.” She knows well about reuse. “Utensils, I wash them clean and reuse. Clothes, I wash and wear again. This basket,” she looks down at the basket sitting next to her, “I use this basket and use again and again, also buckets.” Reduce and recycle she doesn’t really know.

In Moshi, and especially in Ushongo, recycling and then reuse seem to have a greater importance in the eyes of the people. As aforementioned, recycling for its money, business, and employment value. Then, reuse because it is easy. Easy to understand, easy to use. Convenient and beneficial to people personally. And finally, reduce because it is a concept which is harder for many people in both locations to fully understand. It also takes more effort and conscious decision-making. However, after our explanation of reduce and recycle, Joyce says, “Best method is reduce. I like to use things like my basket to protect and preserve things and use for other uses. Of course, other people who use reduce, use bags to buy fruits. But most people take plastic bags.” She points across the street, “As you can see, that woman carrying reusable basket with items.” Another woman walks by with a Kilimanjaro water bottle she has just refilled. “I’ve also seen other people using utensils and bottles again,” she gestures to the other woman, “I haven’t seen anyone recycling though because it’s done more through the industry.”

She mulls over a thought, “All of these methods can reduce [waste]. For example, in the past there was a command: ‘You should not use plastic materials.’ But now there’s a lot of plastic materials because they are so cheap. Still, people that want to keep the environment clean buy baskets. Industry use, recycling, is also good to create new items. If people use these methods, waste won’t be spread ... I need the environment to be good.” In ways, Joyce’s knowledge is more immense than either Flora’s or John’s. She is wise. She has experienced a lot.*
Rafisanjani and I continue walking through the city. Emilian sits under the awning of a small shop. He sits at his sewing machine. Fifty-two years old, he has lived here forty-one years. He tells us, “It’s a tough life for me. I live in a village. Things like the sewage system is not good. When it rains, waste spreads everywhere so water is not nice.” He points around him, “If you look where I work, sometimes it’s hard to find a place to put waste. The government should increase the efforts to collect trashes. Vehicles daily.”

When we ask him about waste prevention he says, “I cannot really comment on reuse before I am educated. Reduce and recycle not really either.”

If you remember, many people, regardless of their socio-demographic characteristics, were found to use waste prevention methods when necessary, convenient, or beneficial to themselves. It is also for this reason that many people, across all genders, ages, education levels, and professions, concurrently tended to use methods unknowingly, not in an intentional effort to protect the environment.

Following an explanation of waste prevention, many people in both locations who initially said they did not know or did not use these methods, told us about ways they use that fall under these methods. After explaining to Emilian he says, “Actually, yes. I use reuse with empty Kilimanjaro [brand] water bottles and make them clean to sell at the market. People keep [new things like] soap, milk inside. A lot of people do these methods that I have seen. I have seen other people collect empty water bottles, clean and use that bottle to measure kerosene in it and sell.” If using certain methods makes life easier for people, young or old, many times, they will be involved however inadvertently.

Finally, Emilian expresses, “Everyone should be aware that the place where he or she lives should look good. People should arrange days to clean for themselves, not just a government day.”

In Moshi, I talked to fifteen younger individuals (ages 18-35), and fifteen older individuals (ages 36-60+). The youngest individual was an eighteen-year-old woman, and the oldest, a man of sixty-five. A total of ten out of fifteen younger individuals had at least partial awareness of waste prevention—two of which had full awareness of all three R’s. In the older age group, eleven out of fifteen individuals had partial awareness of practices. Although the older age group consisted of more total individuals that were partially aware of waste prevention, my initial expectation that younger people would have higher awareness of practices is partially supported by the fact that only two younger individuals, out of thirty total interviewed, had full awareness of all three waste prevention methods.

Regarding involvement in waste prevention, my findings are quite a close draw again, with eleven out of fifteen younger individuals involved, and ten out of fifteen older individuals involved.

USHONGO VILLAGE

Mchanga. Young.

Young and old. People reduce, reuse, and recycle in so many ways they don’t necessarily realize. Jars, food containers, plastic containers, plastic bottles, big buckets. Buckets are reused daily for water collection and storage, and work activities, such as carrying supplies. Bottles for oil and then sometimes water again. Plastic bags for trash, for carrying other items. And buying second hand is second nature since a lot of items are donated from Europe and other foreign countries. The unintentional practice of waste prevention was showcased in Moshi and Ushongo as well. Sometimes, people do not consciously choose to take part in these activities. Out of convenience, necessity, benefit, or otherwise—sometimes these activities are simply a part of life.

51 Emilian, Interview by Author. Moshi, Tanzania, (9 November 2018).
A young woman in Ushongo named Fatuma, twenty-three-years-old, also demonstrated this when she first said, “No. I don’t know these practices.” Following an explanation of each method she continues, “Actually, yes, I use reduce. There’s a small shop over there. We always take a basket to go. Also, we use a bowl to bring to the shop sometimes too. Sometimes, I am giving my clothes to my sisters. I didn’t see anyone using these ways, but people in the home use these ways. If we want to go to the shop, we use these ways. We use these ways because it’s just our behavior. We just use, but people don’t know intentionally to protect the environment.”

She reflects, “From the day I was born, I don’t think the environment was good. Nothing can change unless the village and central government try to put effort and decide to stop it. Just us villagers, we can’t solve this problem.” Here, we see how people, specifically the government in Fatuma’s opinion, could positively introduce change. In my opinion, similar to John and Emilian from Moshi, people across all socio-demographic variables have the potential to motivate change for a better future.

Fatuma remarks on one limitation of this potential, “If you have an industry, you can use recycling but if you don’t, you can use reuse and reduce and it will work. These are ways to help [the environment]. But even if we introduce these ways to the people, if they don’t have education on how to protect the environment and the impact on the environment, these ways won’t work.” Education, again, is the missing link in the waste prevention chain.

Bali, age twenty-eight, is another younger individual living in Ushongo Village. First, he explains that he is a fisherman so the environment in Ushongo is good for him. “When I walk around the village, everything is good, okay. That’s why I like to live here. To me, the environment looks good, the same as the past.” Although this is the case, Bali says he is not happy with fishing conditions. Another fisherman looks over from stringing a large fishing net. It begins raining, hard. “Life for people is changing because we cannot get as many fish. This is because of bad weather and bad ways of fishing that people are doing like dynamite fishing.”

It rained three times this week. Some long, some short rains. It stormed once, and it is not the rainy season.

We ask him about reduce, reuse, recycle, and he says he doesn’t know these things. Nevertheless, after explaining the methods, he responds, “Well, when clothes get old, I can use them for fishing as a sign, a flag on the boat.” This is another case of unconscious practice of waste prevention. Despite being unaware that these ways are a part of waste prevention, the way people use them fortuitously are extremely important nonetheless. Many people are a part of protecting the environment whether they know it or not.

Bali continues to comment, “Recycling is the best though because I think if you use things again and again like reuse, it will be old eventually and it will be waste again. Recycling will bring some employment. It’s good for the people and it’s good for the environment.” In the short-run, reusing items seems more logical than recycling to me because the additional costs of managing recycling are not incurred. In the long-run, Bali is right. Reusing items is not an infinite cycle. Eventually, most reused items must become waste. To me, it is really quite fascinating to see how different people understand these methods. No one person that I have talked to understands them the same.

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Fatuma, Interview by Author. Ushongo, Tanzania, (19 November 2018).
was good. A lot of green, a lot of palm trees, not a lot of plastic bags. I am 75% affected by these problems. Nowadays, there are not enough fish in the ocean because people are destroying the environment. There is not enough rain so we cannot even do good farming activities. If there is no plan to stop, to think about environmental problems, then problems will increase to 100%.” As a fisherman, he says he is not producing much trash. However, his farming activities sometimes produce air pollution due to burning dead leaves. Nasoro speaks passionately, “Waste here is a problem. Some villagers, they are even taking trash after cooking and putting them straight into the ocean. They do this every day. It is a problem because 60-70% of villagers don’t have education. They don’t think this is something that will affect them.”

We ask about waste prevention methods. He responds, “I know recycling but the biggest problem is that we produce plastic bottles but there’s no industry to take it to recycle here. Still, we can do it for leaves, especially coconut leaves to make houses like Raha. We know [recycling] and we would like to do it but our environment does not let us.” Although many people in Ushongo, regardless of their socio-demographic characteristics, found that recycling would be a good method for waste prevention, this method is actually quite limited in such a small environment—mainly due to lack of resources and funds to cover expenses that would be incurred with the establishment of a company. It is interesting because many people are aware of this constraint. One young woman named Halima, thirty-two years old from Ushongo, said, “Recycling would be best if it’s possible but for this environment, it’s hard.”

The nature of the current environment in Ushongo is also responsible for limiting other ways of protecting the environment. Nasoro says, “In Zanzibar, you are not allowed to be seen with plastic bags—only paper. But here, there’s no resources to do that.”

Nasoro says he doesn’t really know about reduce and reuse. After Mwindadi helps explain these methods, Nasoro responds, “To reduce waste, we do a lot, but some things are still difficult to do. Some people don’t see the negative impact of this [trash] because they don’t have education. For me and some people, we do these things, but other people need to be educated ... People think they do things that protect the environment but the only thing that can help is law and education. When people get enough education and government can introduce law, these methods can help.”

Nasoro was once on the Ushongo Village Government Environmental Committee which was responsible for weekly beach clean-ups and meeting with villagers to discuss environmental issues. However, the committee has long since stopped meeting. Nasoro looks at me, disheartened. He says, “There’s no support. We reached a point where we couldn’t do anything anymore. We had no more funds. No more resources. No more motivation.”

One morning Mwindadi leads me to a small household. He introduces me to an older woman named Mzuri. She is seventy-five-years-old, the oldest person I have talked to thus far. We take a seat next to her on the ground. “Since I was born here, it is very different. There are no big trees, people are cutting them down. By the ocean, there used to be a lot of big trees, but now there is nothing there. Waste is a problem. Plastics and people just throw dirty water a lot. Places are smelling. I am not happy with these kinds of

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56 Halima, Interview by Author. (19 November 2018).
changes.” I look around her yard. It’s quite clean here. She tells us she does roofing for a living. To the left of us, there is a small pile of damaged coconut leaves. It looks like the burn pile of excessive dead leaves she accumulates from roofing.

I ask about her awareness of waste prevention, “Do you know anything about reduce, reuse, or recycle?” “Hapana [no],” she replies. After we explain, she speaks confidently, “Yes I use reduce. I use a basket when I go to the market. This way is normal for me. I also use waste to be manure,” she gestures toward a collection of trees near the fence, “dead leaves and animal waste for those banana trees over there.” Here, again we notice a connection between use and convenience and personal benefit. Additionally, initially unaware of her use of reduce, Mzuri simply used this method because it was a part of life, simple for her.

I ask Mzuri, “Do you think one method is best for protecting the environment?” She answers, “To reduce is best for people to use to help us. It’s not difficult. It just takes someone to decide.” Finally, she says, “If the problem doesn’t stop, if the waste keeps increasing, nitakufa [I will die].”

I was truly inspired by the wisdom of older individuals in regard to waste prevention and environmental protection. Maybe, in this case, with age, does come wisdom.

In all, in Ushongo, seventeen out of eighteen younger individuals were fully unaware of any waste prevention practices in the beginning. Compared to the older age group, eleven out of twelve older individuals had no initial awareness of waste prevention. Thus, only two individuals—one younger and one older—had partial awareness of any methods. In contrast with individuals in Moshi, this number is quite low, however, expected after my exploration of gender and awareness in Ushongo. Although the number of people in each age group differed slightly, it was interesting to find that, in each age group, only one individual had partial awareness.

Involvement in waste prevention was a bit of a different story seeing as approximately 56% (10/18) of younger individuals interviewed were involved in some manner, and approximately 58% (7/12) of older individuals were involved. Again, even though the total number of individuals in each age group was not entirely equal, the ratio of people involved in each group was quite similar.

Overall, in Moshi, awareness levels of both young and old individuals were much higher than those of young and old individuals in Ushongo. In both places, people, young and old, have some involvement in waste prevention. However, in Moshi, the total number of both young and old people involved in waste prevention was higher than in Ushongo.

Despite these findings, this exploration of age illustrated that there were no significant trends suggesting that this socio-demographic variable influences levels of awareness and involvement in sustainable waste prevention. The next socio-demographic characteristic I explored was Elimu [education].

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57 Mzuri, Interview by Author. Ushongo, Tanzania, (17 November 2018).
INTERLUDE

_Something that connects us all._

I. We, human beings, depend on the environment. We won’t survive if we don’t take care of it.
II. Environment is important because you can avoid diseases.
III. If we don’t put in effort, there is no good environment to live in.
IV. When you keep the environment clean, it is good for health, myself, and others like visitors like you.
V. Food, air, health. Everything is coming from the environment. We need to protect the environment.
VI. I think the environment gives you life.
VII. Environment is important because we need good environment to live good life. When environment is bad, you can’t get rain, temperature will go high, and you will get many diseases like skin cancer.
VIII. Without the environment, you cannot stay well.
IX. If you keep the environment well, you will keep healthy.
X. Without environment, you cannot live.
XI. The environment provides health.
XII. If environment looks good, there will be a decrease of diseases like cholera.
XIII. An environment starts with human beings. If you don’t consider the environment, then where do you live?
XIV. If you keep the environment in good condition, you will live well.
XV. To have healthy environment is to have health for myself.
XVI. When you have a lot of trees, you produce nice air.
XVII. If you live in a good environment, you will have good air and no eruption of diseases.
XVIII. When the environment is clean, it is also good for the health.
XIX. For us and for the world, environmental issues are a world problem.
XX. Humans and environment depend on each other.
XXI. The environment is protecting all living things.
XXII. If the environment will be safe, I will be safe.
XXIII. _Mazingira ni Afya_ [the environment is health].
XXIV. I depend on it.
XXV. The human life comes from the environment.
XXVI. If the environment is rich, then it is easy for you to get rich. If it is poor, it is easy for you to be poor.
XXVII. The environment surrounds me.
XXVIII. Environment is where we live. Where we get everything. No environment, no life.
XXIX. Without the environment, I cannot get food, cannot breathe, cannot sleep. I am me because of this environment.
BOOK II: VARIABLES

The following socio-demographic characteristics, I deem to be very variable, changeable, depending on an individual’s background and opportunities.

PART III: ELIMU [Education]. Education is What You Make of It.

In Tanzania, there are three main levels of education an individual can complete. First comes primary education, taught entirely in Kiswahili, this level advances from Standard One to Standard Seven (7 years). Public system primary education was made free and compulsory in 2002,\(^{58}\) however, as of 2016, the net enrollment rate for primary education was only 85.6%.\(^{59}\) Next, secondary education continues from Form One to Form Four. Less than 30% of students will reach secondary level education. Girls have the most limited access to secondary education mainly due to early marriage, pregnancy, and lack of menstrual resources. When young girls get married or become pregnant during school, they are expelled. However, the government also impedes many students advancement to secondary education. Only those who pass the “Primary School Leaving Exam,” which can only be taken once, may continue with secondary education.\(^{60}\)

Once completing secondary education, finally, one can progress to university (or college) education. Reaching this level of education is also limited, especially due to lack of general accessibility and funds.\(^{61}\)

Unlike my explorations of gender and age, selecting participants on the basis of their education level was not an easy feat. University-educated individuals were the hardest to come by due to the reasons mentioned above. In Moshi, Rafisanjani once suggested we visit a pharmacy due to university education being one of the requirements for a career in pharmacy. However, other times, we only found university-educated individuals by chance.

MOSHI URBAN

Msingi. Primary.

It’s hot. It’s only 10:30 in the morning and it’s already scorching. We have just started walking for the day. We find Mwanaidi sitting by a small fruit stand on the sidewalk. She cannot write; she has only attended the American equivalent of Kindergarten—not completed her primary education. “I am happy to live here,” she exclaims. “I am a fruit seller,” she hands me a mango and smiles brightly. “The only waste is leftovers from fruit peels. I collect this and wait for a car to take it.”\(^{62}\)

I am curious to see what she may know about waste prevention. She says, “I know reuse, and I do this. I reuse old clothes. I don’t know reduce and recycle.” After we explain those two methods, she looks at us seriously, “I think recycling is the best because when you take something old and make into new, people can buy this item. Reduce is only for emergencies.” When she says this, I think to myself, Do people truly understand what we mean by “reduce, reuse, and recycle?”

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\(^{60}\) Human Rights Watch, (February 2017).


\(^{62}\) Mwanaidi, Interview by Author. Moshi, Tanzania, (6 November 2018).
When first explaining my project to Rafisanjani, my translator in Moshi, I found it harder to explain all of the waste prevention methods than I originally thought it would be. My own awareness was limited, I realized. Over the next three days together, Rafisanjani and I spent every morning going over the terms together. By the end of my time in Moshi, I am still unsure if he completely understood each method. This ultimately had implications for how each person we talked to understood these methods. Many people seemed to grasp onto one example from each of the methods and would not let go. It appeared as if they thought of that example as one method in its entirety when each one is so much more than just one example. I found that many people just like Mwanaidi, in Moshi as well as Ushongo, thought of recycling as the best method of the three because it was the easiest method to understand.

After Mwanaidi explains this, I ask her about composting, “Do you know this or do this?” She answers, “No, I don’t compost because I don’t have a farm. If I had a farm, I would.” In this, we can see how some activities like composting, which many ordinary people can accomplish at home, are limited here. Limited because of knowledge, limited because of motivation, and by profession.

As we walk through the market one day, we cut through a small alleyway. It’s windy. Dirt and dust blow all around us. Here, we find Twalibu. He is tying up a large sack as we walk up. His face marked lightly with dust from a long day’s work. He is happy to talk with us but he is nervous. “I have only completed primary education,” he tells us, “I don’t know if I’ll be able to answer your questions.” We explain that the questions are simple. It’s only about what you think.

“How do you feel about your environment?” I ask him first. He looks around, shrugs slightly, and replies, “The environment looks nice but there are places where the environment is not good ... Trash depends because some places have a good way of managing trash but in my home, there are a lot of trashes—there is only [government] cleaning after one week.”

We ask about waste prevention, “Could something be done about this management? What about reduce, reuse, recycle?” “Maybe reduce is after collecting trashes, someone will collect them and take them away. I don’t really know any of that,” he says with another shrug. Following our explanation, he grins, “Well, if there’s a method to ‘remove’ all waste that would actually be best, but there’s not. So I guess, I like to reduce because if you reduce, there can be very little trash.”

An interesting finding in both Moshi and Ushongo is that, when I asked people how they would feel if there was no waste in respective communities, many responded that this would be unattainable. One college-educated woman noted, “It is impossible here in Moshi for trashes to all be removed.”

It is fascinating, the unfortunate realities many people know we all live.

Sekondari. Secondary.

Late in the afternoon, I return to the hostel where I’m staying in Moshi. The hostel workers are very nice. Always greeting guests with friendly faces. Today, I decide to ask some of the workers if I can interview one of them. They are all excited, running around, laughing. Finally, they decide I should talk to Mary.*

Mary has completed secondary education and she is working on continuing her studies. First, she tells me, “People pay for a car to take trash but it doesn’t come. Trash is now a

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* Mary, Interview by Author. Moshi, Tanzania, (6 November 2018).
Note: This name has been changed to protect the privacy of the participant.
problem because of the car. It is supposed to come three times per week, Tuesday, Thursday, Saturday, but it only comes one time per week. For us [at the hostel], if the truck is not coming, we have to pay money again for someone else to take trash.” She plays with her hair for a minute, looks down, and then says, “In the past, President Jakaya was giving people motivation to keep environment pristine. He was also strict. You could not throw trash anywhere. When you do the process of the last president then it will be cleaner. The president now is going to fall, maybe changes are coming.” She is the first person to really discuss specific politics. I am surprised by her answer because, in general, very few people in Tanzania seem to be open about discussing politics—especially the president.

When I ask her about waste prevention, she responds, “In Tanzania, we do not really separate trash. Here, we put it all together. In your country, it’s different ... But recycling here, we have sometimes. Sometimes bottles, glass. Bottles of water, we take care of. We keep bottles [from the hostel] and give them to people who take them to convert to new items. They bring to the manufacturer to sell and the manufacturer uses again to make, for example, rubber slippers.” She doesn’t really know about reduce or reuse so I try to explain. She thinks about it for a minute, “If clothes are many, maybe I bring to orphanage. If they’re good, I bring to orphanage; if bad, burn it.”

Chuo Kikuu. University.

Nelvin is the person who has completed the highest level of education that I have talked to. Because of this, I talk to him in English. He tells me he has completed his Master’s Degree. He sits up tall, hands held together in his lap. “I cannot say that everything now is 100% good. The center of town is good, but once you go to the village, smoke, dust, noise, and many waste products.” This comment follows another trend I have noticed in Moshi. The villages are dirtier. The villages are small; they have fewer resources to support environmental clean-up.

Nelvin continues, “People have increased. Once you build a building, ten people will come to work there. Once there are so many people, vehicles increase too and the impact on the environment increases. People and development definitely affect waste.” Next, I ask about reduce, reuse, and recycle. He nods his head and speaks confidently, “Recycling is the process of removing waste product. In Moshi, we do have some people [that recycle]. Nowadays, people just buying them [recyclable materials]. Metal, plastics, cardboard. They take them back to industry to produce another product. Most waste product is metal and a little bit of plastic. Nowadays, nearly every waste is valued.” The value of “trash” should not be underestimated. Even though recycling in the United States, may only bring people a few cents, a few cents in Tanzania goes a long, long way. It could be the difference between an empty and a full stomach one night.

Nelvin says, “Reducing waste, yes I know. The government insists not using plastic bags because plastic bags are hard to rot. Now, they support paper. Reusing items, I’m not sure.” Most interestingly perhaps, even the highest educated person I talked to was not fully aware of all three waste prevention methods. This further illustrates how these methods are simply not a part of Tanzanian culture, of Tanzanian core education.

After I explain reuse, Nelvin laughs and says, “We use mostly clothes from Europe. So we cannot reuse and then reuse again. But, if something doesn’t fit anymore, then we can definitely give to family, especially my brother. We do that without knowing we reuse.” Here is another case of inadvertent practice of waste prevention. Some of these methods are simply a part of life. They are normal. They help people live better lives.

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66 Anonymous, Interview by Author. Moshi, Tanzania, (9 November 2018).
Finally, Nelvin looks at me, intensely, seriously. He says, “In Moshi, there is a saying ‘Bring the waste. All residents in Moshi, bring your waste.’ To reduce waste, people need to be educated first.”

Although Nelvin is the person who had completed the highest education level that I talked to and was still partially unaware of waste prevention methods, generally, I found a correlation between the highest levels of education—university education—completed and the highest levels of awareness of waste prevention in Moshi.

A young, college-educated man named Brighton said, “Any waste that you produce, treat in a way that you can reuse it. For example, already used water can be reused for washing before dumping it. Paper can be used as kindle for fire. I don’t recycle though. Reduce and reuse are simple. They don’t cost anything ... People are changing because of the waste they produce. People do not participate in full. People are complaining about government while everyone is responsible for cleaning the environment.”

When first discussing waste prevention, my own university-educated translator said, “Some organic material I do recycle. You can decompose some organic material. I do bury them and decompose them. It’s natural fertilizer. Even if you throw a bottle, someone will take it to a specific area to recycle ... The good issue is recycling. And if it’s inorganic material it’s not wise to bury it. People should put this material in the right place, dumping site. But if it’s organic material, it’s nice. You may bury it and it produces nutrients. If they plant anything there, it will grow.” He knew well about recycling, specifically through composting,

In all, in Moshi, I interviewed thirteen individuals who had only completed primary education. Out of these thirteen, ten individuals had partial awareness of waste prevention. For secondary education, I interviewed eleven total individuals, out of which seven had partial awareness. Finally, I interviewed six individuals who stated they had completed university education. Two of these six individuals had full awareness of all three waste prevention methods, the highest awareness of any people interviewed; the other four had at least partial, and typically higher, awareness as well. Thus, I found that the highest levels of awareness correlated with the highest level of education completed. Despite this finding, higher levels of awareness did not necessarily correlate with an individual’s advancement from primary to secondary level education. Many people who had completed secondary education were just as unaware of waste prevention methods as those who had only completed primary.

In regard to involvement, nine out of thirteen primary-educated individuals, seven out of eleven secondary-educated individuals, and six out of six university-educated individuals were involved. All college-level education correlated with some type of involvement in waste prevention. I believe this high involvement is due to college-educated individuals being more aware of the positive impact waste prevention and environmental conservation can bring.

On the whole, I believe this data is limited due to my small sample of university-educated individuals, and should thus be further explored. In my exploration of education, I also had to trust that people were honest in sharing their education level. However, both my translator and I had certain doubts about some people’s statements. I believe this could have slightly skewed my findings as well.

USHONGO VILLAGE

Msingi. Primary.

In Ushongo Village, primary educated individuals were more common, most likely due to lack of resources and funds available to attend higher education. Mwanahamisi is one of three people I meet in  

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66 Nelvin, Interview by Author. Moshi, Tanzania, (8 November 2018).
67 Brighton, Interview by Author. Moshi, Tanzania, (3 November 2018).
68 Rafisanjani, Interview by Author. Moshi, Tanzania, (2 November 2018).
Ushongo who did not study at all. When we see her, she is outside, talking with a small group of women. When she notices Mwindadi, she smiles. They must know each other well. Together, we walk inside a small building with a coconut leaf-woven roof. I sit down at a small table and she sits next to me. I notice she has intricate tattoos, which seem to move with her as she moves. She speaks in a cool, relaxed tone, “Most things are changing in a good manner. People are cleaning. I think now it is better.”

We ask her about reduce, reuse, and recycle. She answers nonchalantly, “I don’t know.” After we explain a bit, she says, “Actually, I do reuse with bottles, soda bottles, and also old clothes to clean, especially in the restaurant. I am just using because I am not good at taking bottles to hole or dump, so I just leave them in case I can use them again.” Her use is out of convenience, rather than intentional protection of the environment. However, this is important nonetheless. Every small effort, whether intentional or not, matters.

Mwanahamisi also tells us that there was a group that cleaned. She says it was working but then she says, “But the big problem is people don’t know why they are doing it. They don’t support it. We need education.” She leans her elbows down on the table, “If there would be no waste here, it would be paradise.”

Next, we talk to Abeli. Abeli is one of sixteen individuals that I talked to in Ushongo who had completed primary education. We sit together in the shade of a large tree. He has a lot to say, “Big changes here. Previously, people were even going to the bathroom on the beach. Now, we have a toilet. Previously, there was a lot of waste in the village. Now, it’s better because we have a system for burying it. Still, changes are only a little good and mostly bad. People still don’t care. They are lazy. They still dump everywhere.”

When we ask about waste prevention, Abeli looks away. Quietly, he says, “I don’t know.” Then once we explain, he says, “I am not using any of these methods because I didn’t get education about that … waste is increasing because people don’t have education … Still, all of these [methods] are good. People need to pay attention. Just do it.” Just do it. Even in the United States, people need to “just do it.” Many people think of climate change as an issue of the future. In fact, a 2014 survey showed that only 46% of eastern Oregon citizens agreed that humans activities are currently causing climate change. However, this is an issue of now. Sometimes, I think education is also the missing link to motivation for environmental conservation as well as awareness of waste prevention. Nevertheless, sometimes people are simply lazy just like Abeli said. They know, but they don’t care.

Sekondari. Secondary.

One afternoon as Mwindadi and I walk, we meet Somoe. She has completed secondary education and is now teaching in a primary school. She says, “As a teacher at a school, we produce many different wastes. Papers, and all around the school, dead leaves and flowers. We put these in a hole and burn it. Waste is a problem because if waste is spread everywhere there will be different diseases like cholera.”

I ask her about waste prevention methods and she says she doesn’t know them. When we explain them, she says, “I use reduce with a basket to buy things at the shop. I also use reuse, using old clothes to mop. I use these ways because I know it is important and for reducing waste. In this village, not so many people use these ways … I think that’s because they don’t have the knowledge.” Although lack of education is an issue in both Moshi and Ushongo, the issue seems more severe in Ushongo. For some of these villagers, the funds to buy a meal every day are scarce. How can they afford higher education?

Somoe continues, “Food depends on quality of life—money.” We ask about health and she smiles like she has a secret we don’t know. “People look healthy even though they don’t have the culture of taking

69 Mwanahamisi, Interview by Author. Ushongo, Tanzania, (20 November 2018).
70 Abeli, Interview by Author. Ushongo, Tanzania, (18 November 2018).
72 Somoe, Interview by Author. Ushongo, Tanzania, (20 November 2018).
[medical] tests,” she says with a laugh. “Life is very difficult now ... If these ways [waste prevention methods] could combine, maybe you can achieve a healthy environment.”

Chuo Kikuu. University.

The only person I talked to in Ushongo who had completed university education was my translator, Mwindadi. He is the first person I interview in Ushongo. This is his homeplace. He remembers a lot of the past and knows a lot of the present. “The water is moving. There were a lot of coconut trees. My grandfather used to plant trees. Now, generations don’t care about this. Hotels are cutting down trees to move closer to the waterfront. These changes are not good but we still have time to fix it. We need to push. Need to get basic needs. We cannot educate someone who is not even getting food ... These people wake up in the morning and must push for something to eat ... People need a place to eat first and then we can educate them.”

Mwindadi works at a local hotel himself. He says they don’t produce a lot of waste there except food wastes. They don’t produce plastic bottle waste because they don’t use them. He looks at me solemnly, “To be honest, there’s not much we can do. There’s no plan. We take somewhere and put in a dump. Maybe even dogs come and eat it.”

I ask him about waste prevention. He responds, “I know and sometimes people know, but no one does it here. No law, no one pushing people to stop [polluting]. Only thing I like to do, if I have a drink I can take it up to a place to put it, not just throw it anywhere. And at the hotel, we buy twelve big buckets for oil and use them and then clean and give to people for [carrying] water. They like it.”

Suddenly, Mwindadi seems frustrated, “Recycling is good but here it is difficult because we don’t have industries ... Today, people use things they want, not need. People go to buy, buy, buy, but they don’t need. I think we need to produce a law not allowing people to produce a lot. For example, this country only needs this amount of clothes and this amount of motorcycles and so on, and this would help us.”

“Are there any movements for clean-up at all?” Although I think the answer is most likely no, I ask anyway. He answers, “There’s no law that’s stopping people. Other villagers can see people tossing plastic bags, but no one can stop them here. Tourists are motivating people to stop because they see people struggle. They don’t want us to reach a bad stage. Some tourists, if they see a bottle, they try to teach us with ecotourism, but villagers, they say, “Oh mzungu [rich person], picking up trash ... Many people don’t know the meaning of the environment. They don’t know they are a part of the environment. When you speak to them, they think god can do anything.”73 God. In Moshi, one man with primary education said, “God saves. Water, food, might be bad but god saves them from this.”74 Religion and science are two of the most powerful forces ruling our world today.75 In Tanzanian culture, there are two popular religions—Christianity and Islam. If people don’t understand the science behind our world, our environment, then religion must be the answer.

In all in Ushongo, Mwindadi is the only college-educated person I talked to in Ushongo. Out of all thirty other individuals, he definitely had the highest awareness of waste prevention even if this awareness was still partial. In this sense, the correlation I found in Moshi between the highest levels of education completed and highest levels of awareness still holds true. However, since Mwindadi was the only person in Ushongo who had completed university education, this finding could be limited in its significance in Ushongo.

73 Mwindadi, Interview by Author. Ushongo, Tanzania, (13 November 2018).
74 Juma, Interview by Author. (11 November 2018).
I interviewed sixteen individuals who had completed primary education in Ushongo, out of which fifteen were unaware of waste prevention. Nine out of nine secondary-educated individuals had no awareness, and the one college-educated individual I interviewed had high but partial awareness.

Regardless of education levels, many people were involved in waste prevention. Exactly half of primary-educated individuals and six out of nine secondary-educated individuals were involved in some manner. Mwindadi, the one university-educated individual I talked to, was involved in many waste prevention methods at home and at work as well.

Overall, I found that the highest levels of awareness of waste prevention in both Moshi and Ushongo correlated with the highest levels of education completed—university education. However, in total in both locations combined, I only spoke with seven individuals who said they completed university-level education. I believe this is a big limitation of my findings, and therefore, further study and exploration are needed to truly evaluate education’s ability to influence waste prevention awareness and involvement.

In my final exploration of awareness and involvement in waste prevention through a socio-demographic characteristic, I dove into Kazi [profession].

PART IV: KAZI [Profession]. Profession and Practice.

In Moshi, I visit a coffee plantation. The plantation owner begins to show us the coffee-making process. He hands us small red fruits. “These are the coffee beans, ready to be harvested,” he tells us, “we hand-pick each ripe fruit ourselves.” He puts them through a pulping machine and the red layer of the coffee falls off as the beans come out of the machine and drop into a small bucket of water below. “The first layer of the red coffee bean is composted, used as fertilizer.” In the water, the lighter beans, the “bad beans,” float to the top and the “good ones” sink to the bottom. Next, the good beans must ferment for a couple days to remove the slimy layer on top. He hands me some beans and they slip and slide through my fingers. After fermentation, we dry the beans and then we hull them, which means removing the remaining dried husk layer. After the beans are husked, this second layer is used as kindle for the fire. Nothing is left out. Every part is used somewhere.

Walking in Moshi, the sidewalk is relatively clean. The streets bare, even. The strangest smells are car exhaust and the occasional banana peel. Even on the most hidden streets and random pathways, there is very little trash. We pass a dala dala [small public transport bus] on the side of the road. Inside, there is a man. In front of him, a large sack filled to the roof with plastic water bottles. A while later, we pass another woman picking up plastic Kilimanjaro bottles in the market. She carries them away. Where to? I don’t know. Another woman notices I am watching. “Probably taking those bottles to get money,” she says to me.
In America, I find that many people follow the principle of the “three R’s” because they want to. To live a more sustainable life and secure a sustainable future. Here, reduce, nor reuse, nor recycle seems to be a natural instinct. Rather, a survival instinct. People reduce waste, reuse items, and recycle when convenient or necessary to their livelihoods. Many waste materials that can be recycled are valued here for fiscal potential. While it may parallel America where you receive a couple cents per can, the cost of living in Tanzania does not. Many times, people here make less than one dollar per day. A couple cans, a couple cents. Could be the difference between an empty stomach and a full belly for the next few days. If people can save money by reusing items, they do so. If buying clothes second hand is affordable, they do so.

MOSHI URBAN

When looking at professions in Moshi, I found several broader popular profession categories. These included professions in tourism, small business (i.e. small market business [produce market or shoes and clothes], electronic repair), and agriculture.

One of the first people I talked to in the tourism industry is Shakila. She works for a safari tour company. “In the past two years, the environment was cleaner. It is not strict anymore with the government. Waste has increased. This will continue to be more if the government will not be strict.”

I ask about reduce, reuse, and recycle. “I know recycle. For example, water bottles can be recycled but I don’t do recycle. To reduce waste, by don’t use things that will cause trashes. Don’t use plastic bottles and big boxes. At home, I reuse a lot of things like baskets and I boil water, so I don’t have to buy water bottles. At work, we don’t use plastic bottles or disposable bottles, only reusable ones because we are trying to do responsible tourism. Reducing waste is best. If you reuse, there will come a time that you cannot reuse again and items will be old.”

Through Shakila’s experience, we can see how her type of profession easily enables her to use waste prevention methods. A strong relationship between type of profession and involvement in waste prevention is a trend that I noticed in both Moshi and Ushongo. Especially if utilization of waste prevention methods was necessary, convenient, or beneficial to a certain profession, methods would be employed—many times unintentionally.

Walking through Moshi, there are many small businesses. Many of them are similar. Small electronics repair shops, beauty supply stores, produce stands. I actually wonder how each one is able to turn a profit and remain open with this much competition. We walk through an area with many small market shops. Each one has the same supplies and goods: cooking oil, non-perishable foodstuffs, sodas, hair products, and so on. Inside one small stand, there is a woman named Delvina. She has lived in Moshi for twenty-five years. She says she is happy to live here. “People come and go here. People come to do business and they leave,” she explains. “People who come here don’t affect waste. They follow the law, but development really affects the environment.”

We ask her about waste prevention. “I know reuse. Things like cans or items I can wash, I can use to put drinking water,” she says. At this moment, a woman walks by carrying a large bag of empty Kilimanjaro water bottles she has collected. Delvina continues, “I don’t really know recycle but I compost. I compost with food leftovers. And I don’t know reduce.” After we explain the methods she is unaware of, she says, “Reuse is best because it’s good for me to not waste money. I can preserve things instead of tossing them out. I use these ways because it’s the only way to keep the environment healthy.” Although I didn’t ask if Delvina uses reuse specifically to benefit her profession, her case does illustrate the use of waste prevention due to economic convenience and benefit.

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76 Shakila, Interview by Author. Moshi, Tanzania, (3 November 2018).
“To reduce waste in general, people should be educated first of all. If you give them education, they will follow government law and keep the environment clean,” she comments. Education is the key. She pauses to think, then she leans over and says, “If you struggle more and more, you will have a better life.”

In Moshi, one man named William is a part of the large agriculture industry. In Tanzania, the agriculture sector contributes to approximately 30% of total GDP. William is a smallholder farmer. He tells me that Moshi has a nice environment compared to before. He says it’s not a problem to keep a good environment, but it’s still difficult to find money. As a farmer, he only produces organic waste material. He remarks, “Recycling is done at my farm. I use dry grasses to produce manure.” This is not what I would have first thought of for recycling. However, this is a way of composting. Think back to the unique ways of reusing banana peels that were discussed before, such as converting them into firewood. These ways of applying waste prevention in everyday life, and especially everyday work activities, may be unconventional or unthought of at home in the United States, however, they remain extremely important. Using these ways benefit individuals in their daily lives and professions and simultaneously benefit the environment, something these individuals may not realize.

Now, William explains, “To protect the environment at home, you have to know yourself. Create a place to keep waste until it can be collected. If we don’t put effort into protecting the environment, there is no good environment to live in.”

USHONGO VILLAGE

In Ushongo, money is everything. Money means survival. It means buying food. Building a house. Raising a family. And sometimes it is a choice between only one of these options. In Ushongo, employment is very limited. One person even reported an estimate of about 95% unemployment in the village. Since about as long as the village has been existent, the main form of employment has been the fishing industry. Mwindadi tells me that about 75% of the village men are fishermen. Next to fishing, the tourism industry is an employment opportunity available to those who are educated and able to speak English since workers must be able to communicate with guests. Furthermore, weaving coconut leaf roofs and cooking in small village Hotelini [small restaurants] are the remaining possibilities for work. A lot of times, these jobs only provide enough income to live day by day. One of the biggest challenges I found facing environmental conservation and waste prevention in Ushongo is the fact that many people didn’t even have enough resources to support their basic needs. So, how can you care about the environment when your basic needs may not be met? The answer is you can’t.

The first fisherman I meet in Ushongo is named Ally. We sit together in a small outdoor restaurant. The crisp ocean breeze surrounds us in the open room. The waves crash loudly against the shore. Ally says he lives here because this is the place he was born. He speaks good English. “I think it is nice here … We have a good village, good beach, good reef, and we get enough fish. Many people come here from around the world. That is one way we can tell that Ushongo is a nice place.”

I begin to ask him if he has any ideas about the meanings of reduce, reuse, and recycle. He scrunches his nose up, looking a bit confused, “Hapana [no]. I don’t know.” He looks to my translator, Mwindadi, for help. Once Mwindadi helps explain, Ally says, “Yes. I do some of these. Empty bottles sometimes you drink and take empty bottle to buy milk or kerosene.” He points out to the open sea, “In Zanzibar, they use paper bags, not plastic. But we don’t get government order so it’s hard to use these.

77 Delvina, Interview by Author. Moshi, Tanzania, (7 November 2018).
79 William, Interview by Author. Moshi, Tanzania, (2 November 2018).
80 Ally, Interview by Author. (14 November 2018).
[methods]. I think for myself, recycling, I could take empty bottles and sell back to market. I have seen people; they take bottles from the beach.”

Now, I ask Ally if he thinks waste is government or individual responsibility. “For me, there are some matters that are government issues. In Moshi, I think the municipal of Moshi has arranged waste management because of the amount of people. You are not allowed to throw trash. But here, we don’t have this system. We just need to educate people.” His comment about Moshi is extremely fascinating to me. His knowledge is vast even though he is quite disconnected from the city of Moshi itself.

Born and raised in Ushongo, one of the next people I talk to is Juma. We meet him in a cool, shaded area and we sit together on a large swing. He works at a local hotel just like Mwindadi. He notes he has seen many changes in the past three years. “Then, waste was everywhere. Now, people are trying to make the environment clean. I am happy with these changes. I can’t see any problems.”

In between speaking, he takes a second to sip from a plastic soda bottle he has.

Juma says he doesn’t know of reduce, reuse, recycle. As Mwindadi explains, he grabs Juma’s bottle and gestures to him. “This is reuse, for example,” Mwindadi demonstrates. Juma leans in, nods his head. He says, “I use reduce to reduce waste. At work, there’s a kind of basket we use to bring fish. Every single day we use this basket to reduce waste.” Aside from this use at work, he says, “I am not involved in environment protecting activities. I don’t know why.” He looks away from us, looks down at his phone. Here again, just as in Moshi, we see that certain types of professions correlate with involvement in waste prevention. Juma says that the basket belongs to his work. They want him to use this basket. Sometimes involvement is not necessarily personally motivated.

A very large part of the village industry is the roof-making business. Almost half of the women I meet in Ushongo do roof-making for a living. They use coconut leaves and tree bark. Mwanahawa is no different. In fact, as we talk to her, she sits, diligently weaving coconut leaves for the roofing. “My parents live here. I work with roofing. It’s nice but the ocean is coming nearer. Around five to six years ago, the environment started to change. I’m not happy about changes, especially with coastal erosion. All these years, it’s coming. We don’t know, maybe, one day the village will disappear.”

Her words make me sad but this is one of the sad realities of today. After I ask her if she knows about waste prevention, she laughs. She looks up at me from her weaving and says she doesn’t know. While Mwindadi helps explain, she listens carefully. She stops weaving for the first time. “I use reuse, especially for cooking. Bottles for cooking oil. I use these ways because I am used to them. There’s nowhere to buy a small amount [of oil]. Shopkeepers only buy big buckets. No one can buy big buckets.” She uses this method because there is no other way. There is no money for another way.

She continues, “To reduce waste, people need to stop being lazy. There’s no community group or community effort. We have to keep the environment safe. It’s just an individual decision.”

A lot of the women of Ushongo who are not making roofs are cooking in small restaurants. The same goes for Hadija. We sit with her under a thatched roof awning with a couple other females listening.

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81 Juma, Interview by Author. Ushongo, Tanzania, (17 November 2018).
82 Mwanahawa, Interview by Author. Ushongo, Tanzania, (19 November 2018).
Here, she says, “I see the ocean, and get the smell of fish—sometimes it smells bad. A long time ago, I saw a lot of coconut trees. Now, they are cutting these and it’s creating a lot of heat. Now, it’s very hot. The environment is even causing disease like malaria.”

She thinks waste is a problem here because there’s no specific place to put it. So, everyone puts it everywhere. She has a different definition of reduce and reuse than I expected, “To reduce waste is to clean somewhere and take these things and put somewhere and reuse is the same. Recycle I don’t know.” Mwindadi explains that the definition we are using is a bit different. He uses the example of Zanzibar’s plastic ban which some other people mentioned. After this, she comments, “Reuse, we use clothes. We don’t throw them away. We wait to give to another family member. We don’t recycle or compost but recycling is the best because you don’t produce everything, you just reproduce. So you can’t get more waste.”

Finally, she says, “It would be paradise if there were no waste here.”

**Discussion**

People young and old, female and male, of all education levels and professions. Everyone is connected to the environment. People’s connection to the environment is always there. However, the extent to which they feel with and act on this connection really varies. Whether or not they are aware, many people play a major part in protecting the environment. This is extremely important because, as a man named Nelvin from Moshi said, “The environment is where we live. Where we get everything. No environment, no life.”

In Tanzania, many people, across all socio-demographic characteristics, may be unaware of waste prevention methods, such as reduce, reuse, and recycle. These methods are not an integral part of Tanzanian culture as they can be in the United States or other Western cultures. In school, these methods are generally not taught until university education or not taught at all. In Moshi, nine out of thirty individuals interviewed (4 females & 5 males) were fully unaware of waste prevention, and in Ushongo, twenty-eight out of thirty individuals interviewed (15 females & 13 males) were fully unaware.

Despite this, in both Moshi and Ushongo, the highest levels of awareness did correlate with college education. Additionally, all college-educated individuals in both places were involved in waste prevention in some manner. I believe this is due to being more aware of the environmental impact and the importance of employing such practices. However, increasing levels of awareness did not necessarily correlate with an individual’s advancement from primary to secondary education. Many people in both locations who had completed secondary level education were just as unaware as those who had only completed primary education.

Furthermore, regardless of gender, age, education level, or profession, many people in both sites tended to use waste prevention methods when necessary, convenient, and/or personally or economically beneficial to him- or herself. For example, many people found that recycling was a very beneficial waste prevention method to him- or herself or the surrounding community because of the money, business, and employment benefits a recycling company could bring. An emphasis on the potential fiscal benefits of waste prevention was highlighted in Ushongo Village. Despite certain limitations of establishing a recycling plant in a small village environment like Ushongo, people maintained that the economic benefits could outweigh the costs. This differs from how the method of reduce is usually seen as best in the waste reduction hierarchy. I believe the lesser importance of reduce is also, in part, due to reduce being more difficult to

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83 Hadija, Interview by Author. Ushongo, Tanzania, (14 November 2018).
84 Nelvin, Interview by Author. (9 November 2018).
86 Note: These findings are limited due to the fact that I only interviewed a total of seven university-educated individuals (six in Moshi & one individual in Ushongo) out of my total sixty-person sample size.

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explain to many individuals regardless of socio-demographic characteristics. It was really hard to tell someone that reducing waste in terms of my definition did not simply mean burning, burying, tossing, organizing waste, or otherwise.

Because of necessity, convenience, and benefit, many people were both unknowingly and unintentionally involved in waste prevention strategies. Sometimes, it’s just a part of life.

Moreover, necessity, convenience, and benefit lead to a lot of involvement in various unique waste prevention methods that may seem unconventional in other cultures that stress waste prevention. These are ways we would not typically think about at home in the United States. These ways occur because we live very different lifestyles. People use these ways to make life better all the same.

In the end, my exploration of gender and age did not illustrate any significant trends that could suggest these two socio-demographic variables directly and individually influence levels of awareness and involvement in waste prevention. I believe this shows that there are many other factors, such as personal experience, which could have a larger impact on awareness and involvement.

However, in my exploration of profession, I did find that involvement in waste prevention is largely influenced by an individual’s type of profession. If using these methods were necessary, convenient, or beneficial to a certain profession, methods would be employed. For example, a phone technician in Moshi saved and reused old electronic and phone materials for future use to avoid future costs that would be incurred with buying new materials. Despite the correlation between involvement and profession, type of profession did not necessarily seem to influence levels of awareness of waste prevention. Nonetheless, sometimes having a higher-earning profession, such as a higher-level job in the tourism industry, related to higher levels of awareness.

**CONCLUSION**

Through completing this study, I have found that waste prevention may be a possibility for affordable and easy introduction of sustainability into developing communities, such as those I immersed myself in for this project, which may not have the resources for supporting large-scale sustainable development initiatives. “Reduce” and “reuse” strategies would be especially helpful seeing as these methods can be employed by everyday people in their individual homes at little-to-no cost. In fact, applying these methods would typically save individuals money in the long-run.

Nevertheless, there is still a long, long way to go if the implementation and use of these methods is to be successful. Think back to my very first story of Megan from Ushongo. She says, “This is actually a deep-rooted issue starting with the government since the government does not provide proper education. Environmental issues are not a concern.” To be effective in helping mitigate waste pollution and thus climate change on a larger scale, education specifically regarding each waste prevention method must be provided in all communities. This education is especially important in smaller communities such as Ushongo, in which many individuals regardless of socio-demographic variables are completely unaware of waste prevention strategies. In addition, education concerning environmental importance is needed in communities with low levels of motivation for protecting the environment. If people do not know the importance of environmental conservation, how do they know what to do?

While Megan highlighted the importance of education, this is not the only major issue impeding environmental conservation efforts. Government lack of funds and even lack of incentive to support communities’ basic needs is the root of this problem. While conducting this study I learned it can be really hard to get people talking about the environment when even their most basic needs may not be met. In Ushongo, one man said, “A better life is a good thing. But to get a better life is another thing ... If you drink
unsafe water, eat food that is not the best, you can’t think about the next ten years because you are
struggling for now.⁸⁷

If people are already living day to day to support themselves, their families, struggling to buy food and water, how are they to care about protecting the environment?

The picture painted from my experiences, the stories told to me, illustrates one of an uncertain future. These firsthand accounts make apparent the devastating effects of climate change and waste pollution in the lives of ordinary humans, but also stress the solutions human decision and effort may afford these challenges. Whether on a government or individual, global, national, or local level, people hold the greatest power for change.

My aim was not to change people’s lifestyles. I don’t think anyone can do that with one conversation. However, I hope that talking with people about waste prevention has helped introduce these sustainable alternatives for waste management that can be, and sometimes already are, a part of their lives.

Recommendations

All in all, I am so pleased I conducted my Independent Study Project on this topic. I learned so much more than I ever sought to thanks to the extreme candor of all of the people I interviewed. Although I really enjoyed this study, my recommendations for future study include: interviewing a larger population of people to better ensure a representative sample; to conduct further study on different socio-demographic variables, such as religion and income; and to conduct a comparison study on the same topic between a developing community, such as the ones I explored in Tanzania, and a more developed, Western community.

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Secondary Sources


APPENDICES

Appendix I: Interview Guides

English Interview Guide for English-Speaking Individuals in Moshi & Ushongo

I. Broad questions
   A. Name.
   B. Where are you from?
   C. How long have you lived here? Why did you move here (if so)? Why do you enjoy living here?
   D. What do you notice when you walk around the city/coast/spend time on the ocean?
      1. See, smell, hear, taste, or feel, if anything.
   E. Do you remember a time when your environment was different?
      1. What did it look like then?
      2. People, infrastructure, waste.
      3. If so, what changes have occurred since then? How do you feel about these changes?
      4. Has/how has your livelihood/lifestyle been impacted by these changes?
      5. Do you think these changes will continue in the future?

II. Profession
   A. What do you do for work?
   B. What kind of waste generation does this job produce?

III. Waste and waste management
   A. Is waste a problem here? If so, what kind of waste(s)?
   B. What kind of household waste do you notice? How much?
   D. Do you know what it means to reduce waste, reuse items, or recycle?
   E. Do you use any of these ways?
      1. Do you repurpose, or reuse any items? What kinds?
      2. Do you recycle any items? What kinds? Do you compost anything?
      3. Why do you use specific disposal methods?
   F. Did you know or see anyone using these ways?
   G. What do you think is the best way to reduce waste and protect the environment? Why?
   H. Is there any way to deal with waste in your community?
      1. If yes, is this system effective? Why?
      2. If no, does a lack of waste management system impact your life(style) & livelihood?
      3. Do you have... Access to safe drinking water, food security (quality food), and health.
   I. Do you think there are ways to reduce waste production in your household?
   J. Has the amount of waste produced here increased, decreased or remained the same over time? Why?
   K. How would you feel if the amount of waste here suddenly doubled or tripled?
   L. How would you feel if there was no waste at all?

IV. Community efforts
   A. Does the community try to collaborate for the conservation of the environment?
      1. If so, have you participated in any community movements for waste prevention? If not, why?

V. Well-being & environmental concerns
   A. How do you perceive your quality of life?
   B. Do you think you live in a healthy environment? What will your environment look like in 10 years?
   C. Would you want things to go back to the way they were in the past? Before any changes.
   D. Is the environment important to you? If so, why?
   E. Can using reduce, reuse, and recycle help protect the environment? If so, why?

VI. Miscellaneous
   A. Ushongo: Can you tell me a story about the coast, reef, or ocean?
   B. Can you tell me a story about changes in the climate?
   C. What is the level of education have you completed (primary, secondary, college, etc.)?
   D. How old are you?
Kiswahili Interview Guide for Kiswahili-Speaking Individuals in Moshi & Ushongo

I. Maswali

A. Jina.
B. Umetokea wapi?
C. Una muda gani mpaka sasa Moshi? Kwanini unapendelea kuishi Moshi? Kwanini unafurahia kuishi Moshi?
   1. Kitu unachokiona, Harafu, sikia, radha
D. Ni kitu gani unachokigundua katika maeneo ya Moshi?
   1. Kitu unachokiona, Harafu, sikia, radha
E. Unakumbuka ni muda gani mazingira yalikua tofauti
   1. Je mazingira yalikua yanaonekanje kipindi hicho?
   2. Ni mabadiliko gani yaliotokea tangu kipindi hicho?
   3. Vipi kuhusu mabadiliko ya idadi ya watu, miundombinu, Uchafu inaonekanje? Unajisikiaje kuhusu haya mabadiliko?
   4. Je vip hali ya maisha yenu imeathiriwa kwa kiasi gani kuhusiana na haya mabadiliko?
   5. Je unafikili haya mabadiliko yaraendelea wakati ujao?

II. Kazi yako

A. Unajishughulisha na nin. Ni aina gani ya uchafu mnaozalisha

III. Jinsi ya kuhifadhi uchafu

A. Je uchafu ni tatizo hapa? Ni aina gani ya uchafu?
B. Ni aina gani ya uchafu unaozalisha nyumbani?. Ni kiasi gani?
C. Mnauhifadhili vip? Kwa kuchoma, Kufukia au kutupa
D. Je unajua ni maana ya kupunguza uchafu, kutumia kitu baada ya kutumia na kusindika?
E. Je unatumiwa njia mojawapo kati ya njia hizi?
   1. Je unatumiwa kitu baada ya kutumia na kusindika? Ni kitu gani?
   2. Je unafanya usindikaji? Ni aina gani ya abidhaa au kitu unaozalisha? Je unafanya takataka kama mbolea (majani ya miti, mabaki ya mboga za majani, mbolea na kuirudisha kwenye udongo kwa ajili ya kuozesha)
   3. Kwanini unatumiwa njia maalumu ya kuhifadhi takataka
F. Je unajua au ulishwaona mtu yoyote aktumia hizi?
G. Ni njia ipi kati ya kupunguza uchafu, kutumia kitu baada ya kutumia na kusindika unakikili ni nzuri katiaka kukabiliwa na uchafu nna kuhifadhi mazingira? Elezea kwanini.
H. Je kuna njia yoyote ya kukabiliwa na uchafu katika jamii?
   1. Kama ndio je hiyo njia ina ufanisi?
   2. Kama haina ufanisi je upungufu wa kukabiliwa na uchafu unaathiri maisha yenu? Ndyio/Hapana
I. Je unafikili nini kifanyiwe ili kupunguza uchafu manyumbani, Kazi kwa ujumla?
J. Je kiasi cha uchafu kinachoalizishwa kinapunguza au kinapunguza au kipa vilevile? Kwanini?
K. Je utajisikiaje kama uchafu utakuwa ni mara mbili au mara tatu ya sasa hapa Moshi/Ushongo
L. Je utajisikiaje kama kukabiliwa hamina kabisa uchafu Moshi/Ushongo?

IV. Jitihada za jamii

A. Je jamii inajaribu kujihusisha na vikundi kwa ajili ya kutumia mazingira
   1. Je uliihawa kujihusisha na utumaji wa mazingira inisi ya kuhifadhi uchafu mahali stahiki

V. Unachukuliaje swala la mazingira

A. Je unachukuliaje ubora wa maisha
B. Unafikili unashidi kwenye mazingira safi na salama. Je unafikili mazingira yakon ndani ya miaka 10 iyajao yatakwa na muonekano gani
C. Unapendelea hali ya mazingira ibaki kama ilivyokuwa zamani kabla ya mabadiliko
D. Je mazingira ni muhimu kwako? Kwanini?
E. Je upunguzaji wa uchafu kwa njia ya kupunguza uchafu, kutumia kitu baada ya kutumia na kusindika unasaidia katika kuhifadhi mazingira?

VI. Mengineyo

A. Ushongo: unaweza kunieleza stori kuhusu pwani, miamba au bahari
B. Unaweza kunielezea kidogo stori kuhusu mabadiliko ya hali ya hewa
C. Elimu gani ulionayo (Elimu ya msingi, Secondary, Chuo)
D. Una miaka mingapi
Appendix II: Informed Consent Form

ENGLISH FORM

PARTICIPANT INFORMED CONSENT

TITLE OF STUDY: "Waste Is Not Just Waste Anymore": Deconstructing the Relationship between Sustainable Waste Prevention and Individual Socio-Demographic Characteristics The Juxtaposition of Ushongo Village and Mubi, Tanzania

STUDENT NAME: Mahalia Smith

I am a student with the SIT Wildlife Conservation and Political Ecology program. I would like to invite you to participate in an independent study I am conducting. Your participation is voluntary. Please read the information below and ask questions regarding anything you may not understand before deciding whether to participate. If you decide to participate, you will be asked to sign this form.

PURPOSE OF THE STUDY: To utilize a creative narrative approach to evaluate the importance of different individual socio-demographic variables, such as age, gender, and levels of education, in influencing levels of sustainable waste prevention practices, and therefore, larger efforts to protect our environment and future of our livelihoods.

STUDY PROCEDURES: Participation will consist of responding to questions regarding your awareness and involvement in sustainable waste prevention practices such as reducing, reusing, and recycling, and regarding your individual socio-demographic characteristics (i.e. age, gender, and education level).

POTENTIAL RISKS AND DISCOMFORTS: There are generally no foreseeable risks that could be incurred in the process of participating in this study. There are no penalties should you choose not to participate. Participation is completely voluntary.

POTENTIAL BENEFITS TO PARTICIPANTS/AND OR SOCIETY: I hope that my study enables individuals to better understand the relationship they each have to our global society and environment. I hope that individual ability to encourage change for a sustainable future is also better realized through participating in my study.

CONFIDENTIALITY: In this study, I may use the first name of each participant if consented. However, if you would like to protect your privacy, you can be represented in my study under a pseudonym (another name) or anonymously. You do not have to disclose any information or answer any questions you feel uncomfortable with.

PARTICIPATION AND WITHDRAWAL: Your participation is completely voluntary. Choosing not to participate will not result in any consequences, penalties, or loss of benefits to which you are otherwise entitled. You may withdraw consent at any time during the interview and discontinue participation. During the interview, you have the right to not answer any questions which you so choose. You may discontinue participation at any time. You are not waiving any legal claims, rights, or remedies because of your participation in this study.

If you choose to receive a summary of my results, please provide me with your email contact information.

RIGHTS OF PARTICIPATION: To uphold the ethical standards of all SIT proposals, this study has been reviewed and approved by the ISP Review Board and SIT Academic Director.

“I have read the above and I understand its contents and I agree to participate in this study. I acknowledge that I am of 18 years of age or older.”

Participant Signature___________________________________________
Date__________________________

Participant Signature___________________________________________
Date__________________________

Participant Signature___________________________________________
Date__________________________
KISWAHILI FORM

RIDHAA YA KUSHIRIKI

Kichwa cha Utafiti: “Waste is not Just Waste Anymore”: Deconstructing the Relationship between Sustainable Waste Prevention and Individual Socio-Demographic Characteristics The Juxtaposition of Ushongo Village, Tanga and Moshi, Kilimanjaro

Jina la mwanafunzi: Mahalia Smith

Mimi ni mwanafunzi na shule ya (SIT) Uhifadhi wa Wanyama porini na siasa. Ninataka kukualika kushiriki katika utafiti tunayofanya kama shule yetu. Ushiriki wako ni wa hiari. Tafadhali soma maelezo hapa chini, na kuuliza maswali kama unahitaji kama unahitaji maelezo zaidi, kabil ya kuamua kama kushiriki. Tafadhali onyesha nia yako ya kushiriki kwa kusaini fomu hii hapa chini.

Madhumuni ya utafiti huu: Kutumia njia mbadala ili kufafanua umuhimu wa watu tofauti tofauti kwa kuangalia vitu kama umri, jinsia na ngazi ya daraja la elimu yake katika kusaidia na kushawishi kupunguza wingi wa uchafu na hivyo kuweka bidii katika kuhifadhi mazingira yetu pia katika vizazi vijavyo vya maisha yetu.

Utaratibu utakao fuatwa kwenye utafiti huu: Ushiriki wako utajumuisha muitikio kuhusiana na maswali na ulewa na kujihujiisha katika uzuiaji endelevu wa uchafu kama kupunguza, kukitumia tena baada ya kutumia na kusindika vitu kama umri, jinsia na daraja la elimu.

Changamoto zozote za hatari au Usumbufu wowote na utafiti huu: Hakuna hatari inayoonekana ya kushiriki katika utafiti huu na hakuna adhabu ikiwa unachagua kutoshiriki; ushiriki wako ni hiari. Wakati wa mahojiano, una haki ya kujibu maswali yoyote au kuacha ushiriki wowote.

Faida kwa atakajihusisha na utafiti huu: Natumaini utafiti huu utawawezesha watu kuangalia vitu kama (umri, jinsia na daraja la elimu) na kukutuwa na ushiriki katika kujihujiisha katika utafiti huu.


Haki ya mshiriki: Utafiti huu umepitiwa na kuhakikisha na bodi ya ISP pamoja na uongozi wa taaluma ya SIT. Ili kuingatia viwango vya maadili ya mapendekezo yote ya Mradi wa Utafiti wa Independent Studies, utafiti huu umepitiwa na kupitishwa na Mkurugenzi wa Elimu na Bodi ya Mapitio ya Mstani. Ikiwa una maswali yoyote, wasiwasi, na malalamiko, na hawawezi kuwasiliana na wafanyakazi, tafadhali wasiliana na Felicity Kitchin, Mkurugenzi wa Elimu, kwa: felicity.kitchin@sit.edu


Saini ya Mshiriki ___________________________________________ Tarehe ___________________________

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Saini ya Mshiriki ___________________________________________ Tarehe ___________________________

Saini ya Mshiriki ___________________________________________ Tarehe ___________________________

Haki za Mshiriki – Maelezo ya mawasiliano ya SIT
Ili kuzungatia viwango vya maadili ya mapendekezo yote ya Mradi wa Utafiti wa Independent Studies, utafiti huu umepitiwa na kupitishwa na Mkurugenzi wa Elimu na Bodi ya Mapitio ya Mstani. Ikiwa una maswali yoyote, wasiwasi, na malalamiko, na hawawezi kuwasiliana na wafanyakazi, tafadhali wasiliana na Felicity Kitchin, Mkurugenzi wa Elimu, kwa: felicity.kitchin@sit.edu
Appendix III: Study Sites

MOSHI URBAN

Plate 8. Map of Moshi Urban. Published by Google Maps.

USHONGO VILLAGE