Eradicating Poverty Through Education
DDE1301

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EXECUTIVE SUMMARY

In 2007, the Maasai Joy Children's Centre was established in the Ekenywa Village of the Arumeru District of Arusha, Tanzania. The school was created by a native of the village, Edward Ernest Kutingala, who funds the school using generous donations and profits received from leading tourist groups on expeditions up Mount Kilimanjaro. Since 2007, the school has grown into three buildings and plans to continue expanding. The country of Tanzania requires its citizens to enroll in and complete primary school beginning at the age of 7. The mission of the Maasai Joy Children's Centre is to provide quality education and character development for orphaned and economically disadvantaged Maasai children. Already ranked as the fifteenth best primary school in Tanzania, Maasai Joy still faces many challenges.

The Maasai people have a nomadic tradition and most live in poverty. Their homes, when they have them, are mud-straw huts and their lives revolve around farming what they need to survive. As a result, the Maasai people do not place a high value on educating their youth they would rather have them work the fields. Many of the native children are orphaned or face health concerns like malnutrition and HIV, which take precedence over their desire to learn. This lack of interest that the natives share towards schooling prevents the students from pursuing higher education,.

The Maasai Joy Children's Centre is struggling to reach all their goal due to insufficient funding. The school receives donations and profits from Ernest Kutingala's expeditions, the amount is very small and the benefactors are disorganized. The school is also in desperate need of supplies; they need everything from books, to paper, and even trash cans. There just isn't enough money coming into the school to provide everything the children need, including teachers and adequate class space for all the children they want to educate. If the Maasai Joy had access to the funding they so critically need, they would be able to better educate the children which will hopefully result in a slow and steady quality of life increase.

The big goal behind our IQP is the same as MJCC (Maasai Joy Children's Centre), to help break the cycle of poverty through education. We planned to do this by helping Maasai Joy become self-sustainable. This was accomplished over the past three terms by uniting the benefactors of the school, expanding the school's social network presence, creating a budget for the school, suggesting improvement ideas to Ernest Kutingala, and holding a fundraising event on campus. The benefactors of the Maasai Joy were organized into two networks. The first group is considered a board of directors; it includes regular donors whom Ernest sees fit to not only contribute money, but ideas for the school as well. The second is open to the general public, united through social media such as Facebook and Twitter as well as a group email list. The philanthropic event was targeted to the students and friends of WPI. While our IQP group may not be able to solve all of the problems that the Maasai Joy Children's Centre faces, we wanted to take steps in the right direction and begin to create a symbiotic relationship between WPI and MJCC hopefully setting a precedent for future groups to follow and continue the

progress.

Introduction

Our IQP's goal is to help eradicate poverty though the use of education. Therefore by educating impoverished youth hopefully they move on to good schools and eventually a good career and break the cycle of poverty their family has been stuck in. More specifically we are helping the Maasai Joy Children's Centre which is an English-medium primary school that is located in the Ekenywa Village of the Arumeru District of Arusha, Tanzania. It was started by Edward Ernest Kutingala a native from the village. He started the school with the profits he made from his tourism business, giving tours of Mt. Kilimanjaro and from some generous donations from clients he met doing these tours. His goal is to provide quality education and character development for the orphaned and economically disadvantaged Maasai children and through this education they are able to improve the living standard for them and their families.
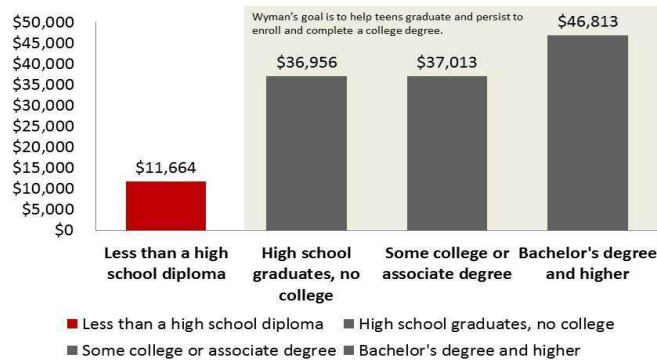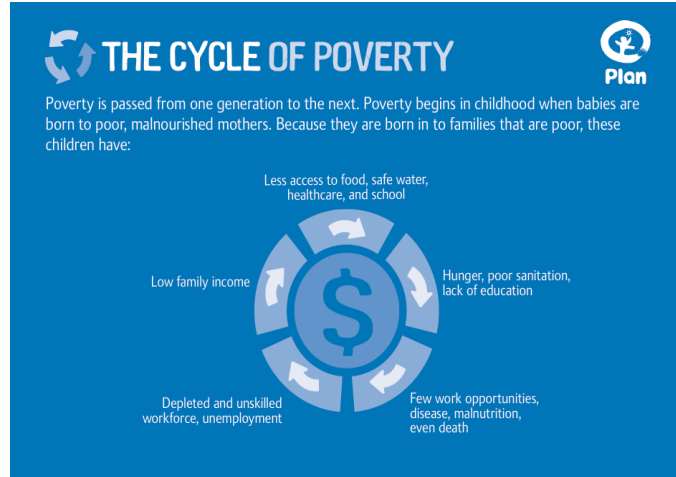

This graph shows how the less education you receive the less money you will make.

This graph shows that poverty is a repeating cycle. One way for the cycle to be broken is by receiving an education and getting better job offers

The main goal of our project is to help the Maasai Joy Children's Centre become financially stable so they can better reach their goals of expanding their faculties, offering more services, and of course continuing to offer an affordable quality education

We worked on 5 goals in an attempt to help MJCC:

1. **Finding the best way to expand and organize MJCC communication network, with the use of social media and other tools.**
   i. Connect all the social media/e-mails together in hope of expanding the network of supporters
      1. Create a Twitter and Instagram
      2. Create a Google account and make e-mail alias's
      3. Give control of everything to Ernest
   ii. Organize into two different groups the general group of supporters and a smaller more select group of advisors
      1. Put names into the "Board" alias
      2. Create a Google Sites page to better facilitate communication and sharing/organization of documents between Ernest and the advisors

2. **Creating a budget for MJCC**
   i. Find out the cost for the school
      1. Compile and organize the numbers into a spreadsheet
   ii. Find out the incomes
      1. Compile and organize the numbers into a spreadsheet
   iii. Find out major goals
      1. Figure out much each project will cost
   iv. Have everything compiled so MJCC can use it to budget more efficiently

3. **Figuring out ways for MJCC to better fund themselves**
   i. Come up with ideas for financial opportunities via tourism and volunteer groups
      1. Immersion experiences
      2. Get more groups besides Karie's to visit, possibly WPI students
   ii. Come up with fundraising opportunities
   1. Shipping school supplies

        2. Fundraising dinner in the future

    iii. Bring Martin Burt's idea of a self-sustaining school to MJCC

        1. Show them that it can be done

        2. Get Ernest thinking about integrating profit producing activities into the curriculum

4. Creating materials that Maasai Joy can use as a template to better promote themselves

    i. Make a Maasai Joy Business Plan

    ii. Make a marketing presentation for Maasai Joy to show to investors

    iii. Create spreadsheets they can expand on and add to year to year

5. Begin to develop a symbiotic relationship between WPI and Maasai Joy

    i. Come up with ways for the relationship to continue

        1. WPI volunteer trip

        2. Future IQP's

            a. Designing Building

            b. New teaching techniques

            c. Develop farming advances

Maasai Joy built their first school building in 2007 and from there has grown into a three room school staffed by three teachers. Ideally any student who wanted to, could go and receive a quality education, Maasai Joy does the best they can to accommodate all willing students. Many of the village's families can't afford to send their children to school so Maasai Joy started a sponsorship program. This is a good start but there are still more children who cannot attend school because of, lack of room at the school and the financial hardships the student's family faces. The biggest problem at hand is that the school needs more funding for supplies, expansion of the school and their inability to accept all children who would like to go to school but don't have the money to make it happen. Our goal is to help make the Maasai Joy Children's Centre a self-sustainable school. The first step in helping Maasai Joy is to familiarize ourselves with the school, its needs and its current revenue streams, a general understanding of the school, how it operates and what the surrounding area is like will allow us to come up with ways to help them. The Maasai Joy Children's Centre's situation is so different and foreign from anything our group has experienced and so it is important to gather firsthand accounts as well as research schools in similar situations that have been successful.

"One of the most important things I learned was appreciating what we have back home and what were able to do on a daily basis. I want to keep that in mind as much as I can and not take certain things we have for granted" - Tomaso DeMartino

This quote is from a URI student who went over and taught at Maasai Joy, it highlights how little the people have.
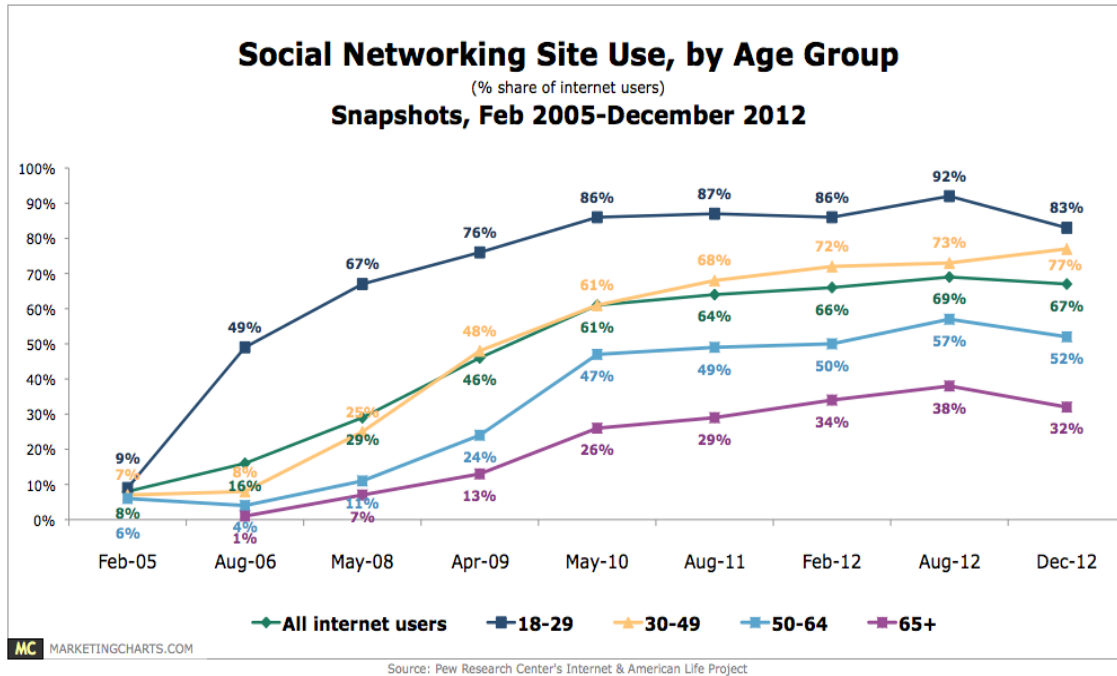
Maasai Joy is not the only school who is trying to survive in an improvised area with very limited supplies. This problem occurs in other countries as well…
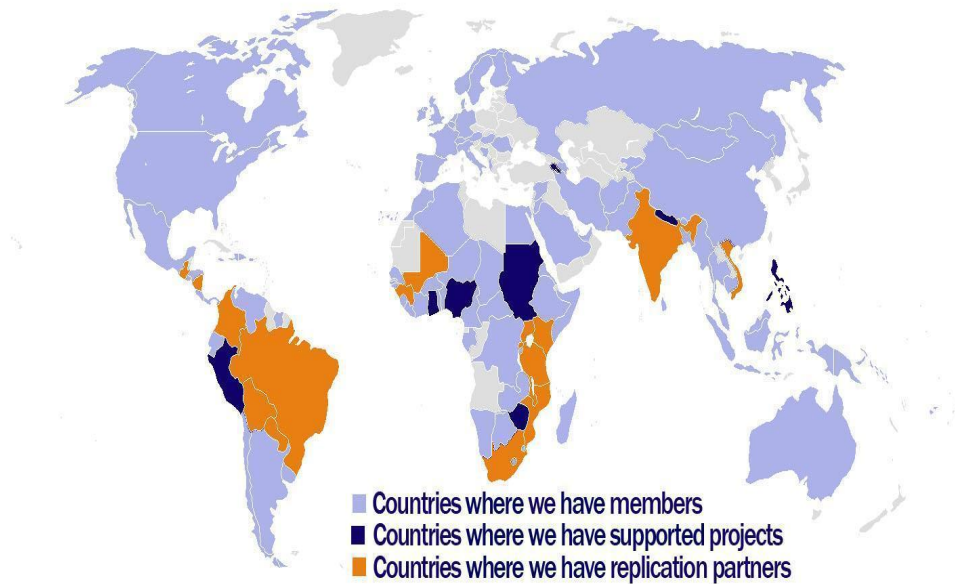
This is a map of all the different countries where the Teach a Man to Fish organization is active. Clearly this is a global problem that people have been trying to fix

After we gathered background information and came to a better understanding of the Ekenywa Village of Tanzania. The next step was coming up with ways in which we can help the MJCC become financially stable. We looked at their current cash flows (where the money comes from and how much) and came up with a budget that can allow Maasai Joy reach their goals.

Besides looking at only the financial needs of the school, we also took a look at other business aspects such as better promoting of the school to gather more investors. Maasai Joy Children's Centre network of supporters was clearly underutilized and we felt by giving Ernest more tools he could take better advantage of them. We figured by giving Ernest a way to connect with a select group of advisors, it would help him work through problems he has faster. Ernest has a wide network of supporters and a worthy by which he could promote by the use of social media. The advantages of social media gives anyone the potential of increasing their organization's target audience exponentially.

Social Networking Site Use, by Age Group
(% share of internet users)
Snapshots, Feb 2005-December 2012

*4

This graph shows how much of a specific age group uses social media monthly, it is clear that a large portion of the population is on social media. By utilizing social media an individual greatly increases the number of people who see a user's post.

To make money you first need to spend money and Maasai Joy just simply does not have the money required to fund the projects that will lead to finical stability. By helping Maasai Joy get more donations it will give them some of the capital needed to run and improve the school. By making Maasai Joy financially stable they will be able to provide a quality education to the students and hopefully this education along with the other services they provide will break the cycle of poverty the region is stuck in.

Background

The chapter talks about the area of Arusha, Tanzania and the villagers encompassing the Ekenywa region, the mindset of people who live there along with the developmental struggles they face and how assistance can be provided to help them become self-sustainable. Beginning with the geography of the land, we can view nationwide rain totals and what limited resources that can be utilized throughout the country. Afterwards, we look into the state of current education and a means to increase the number of students at schools to attain knowledge used in many life applications. Afterwards, we move to our partner school that will set an example for the country, the Maasai Joy Children's Centre to further

children education for more people and break the cycle of poverty and any negative mindset towards their goal. The ending goal of this chapter is to explain the harsh situations linked with lack of education in Arusha, the need for students to resolve those issues and how we can start to help the community to prosper.

2.1 Geography and Conditions

The Map of Tanzania

Tanzania is located in East Africa surrounded by Mozambique, Kenya and the Indian Ocean. With the highest point being the tip of Mount Kilimanjaro at 19340 feet, it is the highest point in Africa. The village of Ekenywa lies in Northern Arusha where Kilimanjaro and Maasai Joy are nearby. The country has varying elevations and climate which can make it difficult for people to prosper. The climate of areas can be tropical near the coast or temperate towards the highlands. Also, one can categorize the terrain areas into 3 which are the coastal plains, central plateau and the northern and southern highlands. The main use of the land is spread among various jobs, but the concentration is used for farmland. Many agricultural techniques have shaped the country over the years and almost 2000 square feet of land has been irrigated. Since much of the land has been used for farming purposes, there is a small area of industrial work occurring. Since 15 percent of the land is used for agriculture, many people can be assumed to be farmers.

As time passes, several issues dealing with fertile soil arises. ("Land Degradation in Tanzania") Much of land is continuously farmed on without any end and it entails a decline on crops on many occasions. Farming practices in the past included deforestation to increase the amount of land to farm on. It is still apparent that fire as a land-management tool is used in many areas, but the negative impacts lead to land erosion which farmers cannot use. Adding to the problem is the overgrazing situation in some villages. Farmland does equate to more animal grazing and how villagers view livestock as a sign

of wealth. For social reasons, many try to increase the size of their herd and it limits the land used for crops and they aren't aware of the harm caused by this. The country also only has on average of 96 cubic kilometers of renewable water per year and most of the source goes into agriculture. Not only do the people need to deal with limited water for their own use, they also need to be wary of the seasons which can be separated into the dry or wet. The yield of their crops is heavily impacted by the season and it will impact the country. Arusha has a wide range of villages surrounding the main city and they are affected by both seasons which correlate to their economic situation.

Average Number of Rainy Days												Years on Record: 32
	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Days	51	5	6	9	---	9	2	1	1	1	2	7	8

This chart shows how much fresh water per month Tanzania can be expected to get from rainfall

2.2 Labor and Economy

Tanzania is a global economy on the rise, but it still has a ways to go. The labor force is rather large with approximately 80% of the total population involved.

Sex	Age		Employment rate
Male & female	Total	15+	79 %
	Youth	15-24	69 %
	Adult	25+	84 %
Male	Total	15+	81 %
	Youth	15-24	69 %
	Adult	25+	87 %
Female	Total	15+	77 %
	Youth	15-24	69 %
	Adult	25+	82 %

This equates to about 23.5 million workers, which as you can see from the graph below is a huge increase from 2004 when there was less than 19 million workers active in the economy, this alone is an indicator of how much the economy has grown.

Just because most of the people are working doesn't mean that the standard of living is high, the majority of the working Tanzanians are considered working poor, 85% working for under $2 a day. This is due to the sectors that most people are employed in, the vast majority being farmers or other labors. This is because it is the only life they have ever know and have no education to move onto better fields of employment

Sectoral employment

| Employment (2006)3 & GDP share (2010)[23] Sector & Sex distribution – (Graph without Agriculture)			
Sector	Male employment	Female employment	GDP share per sector
Mining and quarrying	901	134	3.7 %
Manufacturing	272,872	161,335	9.9 %
Electricity, gas and water	13,507	3,498	2.3 %
Construction	171,995	6,686	8.8 %
Trade, restaurants and hotels	837,881	758,909	16 %
Transport and communication	231,116	13,111	8 %
Finance, real estate and business services	76,578	18,709	10 %
Public administration and services	528,725	734,651	8.8 %
Other services	N/A	N/A	4.7 %
Agriculture	5,880,789	6,832,446	28 %

The above graph shows how many people work in each sector and how much of the total GDP it makes up.

|	
Total Exports (2012 est.) : $ 5.03 billion	
Total Imports (2012 est.): $ 9.72 billion	

Imports and Exports are not only important to a country because it allows you to get goods you can produce yourself. The balance of trade (exports-imports) has an effect on the value of the nation's currency, Tanzania has a -4.69 deficit in the export/import ratio, and this means they import 4.69 billion dollars more then they export. When a country has a deficit like Tanzania it devalues their currency and hurts them in the global economy. Their top exports and export partners are Gold, Precious Metal Ore, Raw Tobacco, Coffee, and Fish Fillets; Switzerland, South Africa, China, Germany and Japan respectively. While their top imports and import partners are Refined Petroleum , Gold, Wheat, Raw Tobacco, and Gas Turbines; India , South Africa , United Arab Emirates, Switzerland, and China respectively.

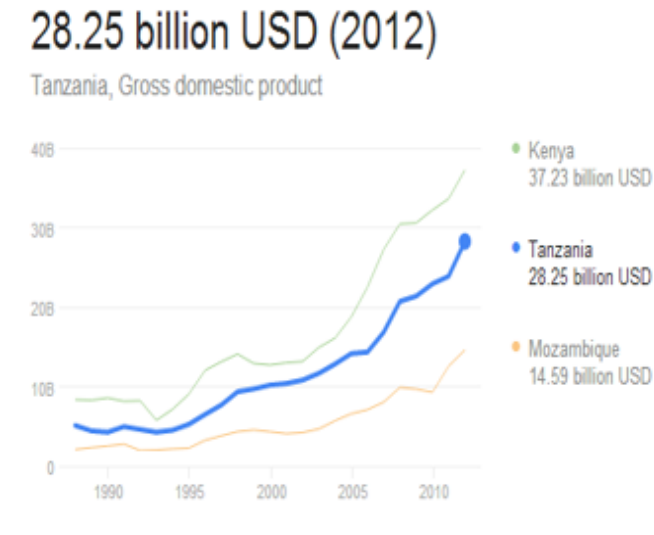**The below chart represent the percentages that each product represents**
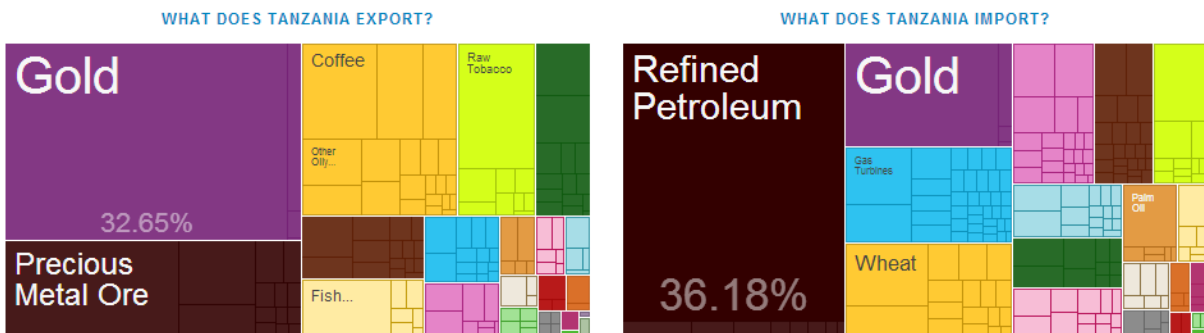
The below chart represents the percentage each country imports or exports
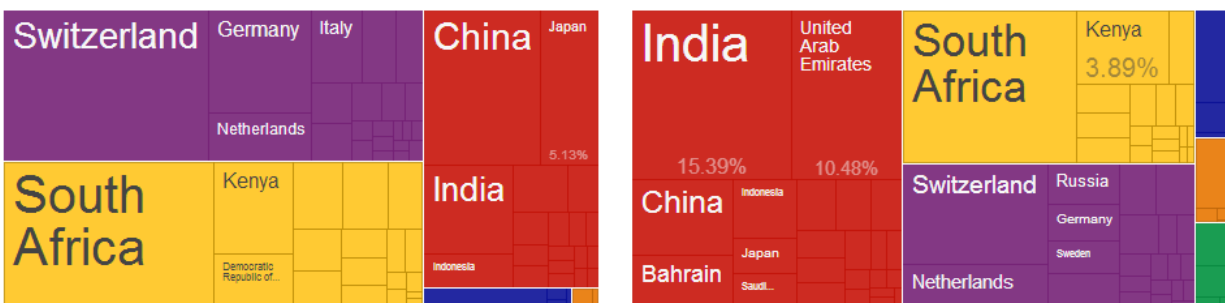
Tanzania has a GPD of 28.25 billion dollar GDP, compared to other countries in the region this

is in the middle to upper middle range and has been increasing at a steady rate for about a decade now. The chart below shows a comparison between two of the countries in the area, Kenya and Mozambique over the last 20 year.

28.25 billion USD (2012)
Tanzania, Gross domestic product

- Kenya — 37.23 billion USD
- Tanzania — 28.25 billion USD
- Mozambique — 14.59 billion USD

You can see that many countries in this region GDP's are on the rise, also if you look at the line it appears to be part of the exponential growth curve, the beginning of the growth stage. This is very good news for countries in Africa because it means that they are growing and the economies are developing.

$ 1,600 028/198 (027/156)	Chad
$ 1,600 029/199 (039/174)	Kenya
$ 1,500 030/200 (038/173)	Benin
$ 1,500 031/201 (042/178)	Zambia
$ 1,400 032/202 (050/188)	Tanzania
$ 1,300 033/204 (026/155)	Uganda
$ 1,200 034/206 (035/170)	Burkina Faso
$ 1,200 035/208 (040/176)	Mali
$ 1,100 036/209 (032/164)	Rwanda
$ 1,100 037/210 (048/184)	Guinea-Bissau

The above chart shows what the per capita GDP of countries in Africa, it is gotten by dividing the GDP by the total population. Looking at the per capita income is a good well to see if the economy is progressing but does not represent the gap between the rich and the poor, with over 85% of the

countries work force being considered poor and including the unemployed or those too young to work much of the country makes less than this. In Africa the per capita GDP ranges from $36,000 to $300 with all but the top 7 falling under $10,000. Tanzania is in the middle to lower middle range.

Unemployment in Tanzania3		
	Age	Rate
Unemployment Age 15+ (2006)	Total	4.3 %
	Male	2.8 %
	Female	5.8 %
Youth Unemployment Age 15-24 (2006)	Total	8.8 %
	Male	7.4 %
	Female	10.1 %

The graph above shows what percentage of the working age population is unemployed

The unemployment rate is rather low but if you take into account how much of the working population is poor farmers you realize being unemployed isn't much worse. A major problem they have in Tanzania is the unemployment of the youth (children ages 15-24) not because it is high but because it is so low. Many of the youth are employed but in the agricultural sector (75%), without any formal contracts or benefits. They work at these jobs because it is the only work they can get and because their parents are already working for such low paying jobs the need to start working out ways education or finding the "right job'. 15-24 year olds are also the most likely to be unemployed in urban areas. The poor quality of jobs held by Tanzanian youth are to a large extent determined by their low level of education attainments. Of the approximately 900,000 youths (15 - 24-years) that entered the labor market 14 % did not complete primary school, 44 % finished their primary but did not start secondary 38 % went to secondary but did not finish school.

2.3 Education

Apart from the climate of Tanzania, a major concern for the low income and unemployment is mainly due to the education of the children. Education looked through the whole country varies due to many children not being able to continue past their primary education. As primary school is strongly enforced for young children, there seems to be no problem at that point as the 95 percentile of children usually enroll. It is when children finish their primary school that nothing else is enforced and not necessary. Because of costs, most do not enroll into further education and where they stand in national testing. ("Education in Tanzania | Newton Tanzania Collaborative.") Students take a national test in primary school and their score if passing will correlate which secondary school they attend due to the government choosing the school for the student. Some students will have no choice but to drop due to

the distance from their homes to their new school as some students in primary school can have 2 hour walks. Recently in 2009, about 50% of students graduated with their primary school certificate, but only 7.7% of the student population enrolled to secondary school. Very few trained teachers teach at the secondary level and class size can vary from 45 up to 55 students.

Typically Sized Primary Classroom

Unlike primary school where classes are taught in Swahili which is a main language of the area, secondary school is all taught in English. There have been debates of which language in each level of school should be taken in, but as it stands, the majority of people have agreed on keeping English for secondary school. The secondary classes taught are diverse ranging from history to fine arts. Many useful skills can be learned from the secondary school alone, but the various barriers inhibit the children. Recent numbers have shown that university enrollment is less than 0.5% of the student population. If the numbers grow, the country can be in better standing for good jobs and a bigger economy. There are many negatives to not receiving a full education. The struggles of poverty have been tied with a lack of education for many people around the world and it lead to serious consequences. With education growth dwindling as the grade levels go higher, it shows that people must find livings outside the scope of what they can learn. About 2.8 million children from ages 5-14 work on hard labor rather than learning for higher earnings. Most of this child working population involves farm work and their parents depend on every last bit of aid in order to make ends meet. Health and safety issues arise since less higher education is prevalent in Tanzania and a relationship can be made with health and secondary school. In a study case, young pregnancy rate for non-educated children was 70% and comparatively with children who had a secondary education had 30% less rate. (Fact Sheet: Education in Tanzania) With the little income each family has, it helps with raising the children that already exists. Along with the same study, another study for AIDS awareness was conducted. 80% of secondary students were aware unlike the 30% of non-educated children.

2.4 Maasai Joy Children's Centre and the Mindset Towards Education

ERADICATING POVERTY THROUGH EDUCATION

       The Ekenywa Village in Arusha faces many of the common problems faced by the country. The climate and poverty prevents any expansion from occurring. Education in the area is diminished and sparse. Many days can be tough for families and the sole factor to improving general living is through education. The knowledge of future generations will help the community overall and the Maasai Joy Children's Centre with Ernest does their part to help the cause. Ernest's main goal is to eliminate any poverty with the strength of education. His efforts have allowed his school to be able to provide help to the families of attending students. As the school director of the school, he works hard to make sure his students succeed and in addition, he works as a guide for Mount Kilimanjaro to give even more. Although his work has brought many children to his school, more time and energy is needed to improve the overall quality of life in the area. Ernest's actions are the foundation for ridding the poverty line in his area and it will be a giant step towards helping the rest of the country.

       Until his plans are fully executed, the village must find ways to maintain their lifestyle. The main issue for Ernest and the village is that the children are denied education at young ages even though education facilities are available nearby. Ernest's root causes come from the lack of income each household receives. As of recent years primary education has been free (United Republic of Tanzania) and families still struggle for money to buy uniforms and exam fees. Agriculture is the only means of obtaining any financial gains. The village relies on small holder farming that depends on the rain and small tools including hand hoes. Potential students are always working on the fields to ensure that their family can get by and education is discarded. Even if a family is in stable condition, the duties of the children tend to lean toward farm work. Due to existing money issues, farmers have little to no accessibility to improved methods of yielding better crops that other regions have implemented. Improved seeds, fertilizer and pesticides are luxury farming items to the village. Adding on to the lack of tools, the land of the area is not suitable enough for farming and cattle raising which is the second best method for earning money. The land is simply not fertile enough to accommodate large amounts of crops and food for livestock. Low yields of maize, only 3-5 100 kilogram bags per acre have are recorded for most of the farms. If you compare this to the US average of 155.3 bushels or 3944.6 kilograms you see how low these numbers really are. Since cattle and goat trading are necessary for most families to survive, the land quality is diminishing from the growing numbers of livestock. Boys and girls sometimes provide household labor for others in exchange for food and support. Ernest has tried his best providing as much free education for the area from various donations and funds he has acquired so his students would be able to stay for the full duration.

       The living conditions in the village have led some parents to believe that education is not important and a barrier was formed, barring students away from school. Village parents believe as long

as a family can survive on their daily routine, education will not be necessary for their children. The mentality blocks the potential each child has and what they could do to better their lives. Even if some children are able to go to school, many girls and boys drop out due to that certain mindset. Schools are not putting effort to keep the students from leaving and continuing on as well, especially in their younger years. According to Ernest, the government owned schools are teaching with poor standards. Teachers have very inadequate training and skill to provide quality education especially in English which is needed for tertiary education since subjects that include engineering and medicine is taught in that language. Morale is low among the teachers since their salaries are minimal and the motivation provided by the government does not help.

The illiteracy among children in the area has been growing due to the consequential disregard for education. Poverty rates have been increasing widespread throughout the community. Famine spells have been frequent due to the poor markets and low yielding crops. Since children have steadily been dropping from school, they do not know the diseases they could contract. It has been noticed that diseases including malaria have been increasing leading to many deaths.
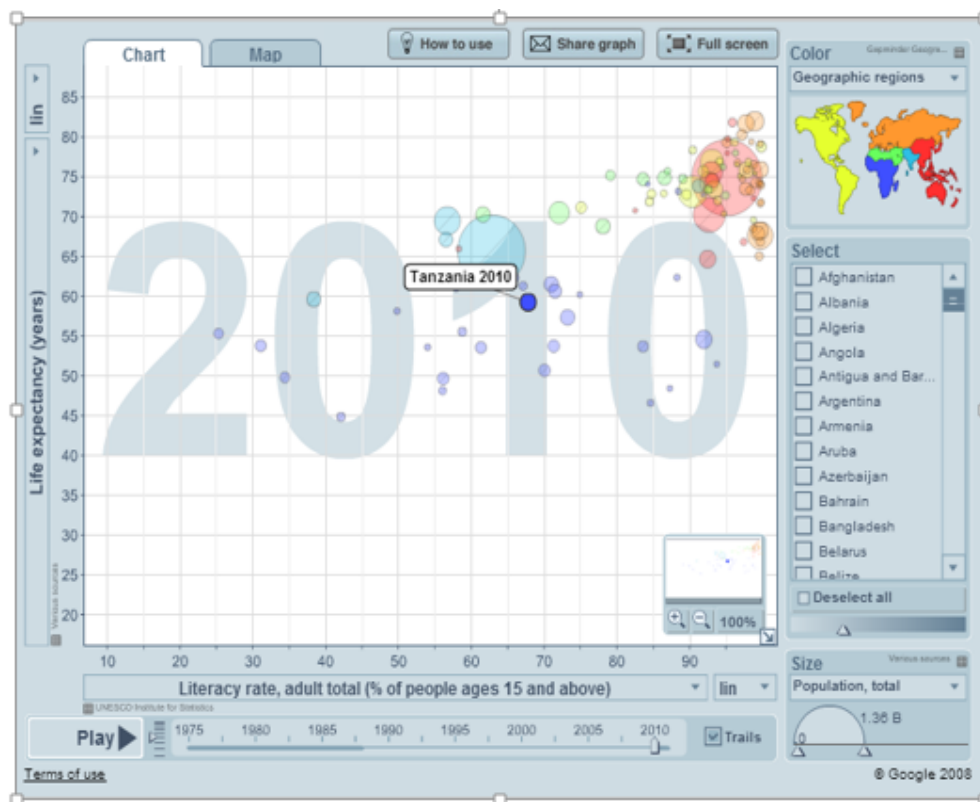
This graph shows literacy rate, a judgment of education vs. life expectancy. The lower the literacy rate the lower the life expectancy and as you see Tanzania is toward the bottom for both.

Many parents themselves are exposed to the diseases from their lesser knowledge of contracting them. The burden of caring for a family as a child is often the case with many parents too weak to work. (Growth through learning) Young women are often impacted the most because the

culture expects her to marry early. Young men are also expected to know they are older they would be the future provider of their family and they tend to get an early start towards that goal and higher learning. The Maasai culture also have special rituals and ceremonies to "become a man" for young men around 14 years of age. (Maasai association) Around that time is when a child's primary education would be finished, but training occurs much earlier up to that point. The time training widens the gap between living and school and many young men drop to pursue becoming a warrior. Some rituals require unsanitary tools that cut the body and with the small knowledge of disease, the warriors become too sick to continue on. Even if the warrior were to manage, the healing process takes months before the final rituals. The amount of time tossed aside can decimate a family. Without education, the youth is subjected to child labor or family caretaking and the chances of an improvement in life are cut. Ernest and the Maasai Joy Children's Centre is devoted to prevent such harsh situations from happening.

2.5 Fundación Paraguaya in Depth

Fundación Paraguaya is an organization founded in 1985, which promotes entrepreneurs through loans and training in Paraguay with similar conditions to Ekenywa. It works across the country, with a 136 city span and 17 central locations. WPI's Social Entrepreneur Martin Burt founded the organization to better the lives of the parents and children of the area. Being wholly non-profit, Fundación Paraguaya does not give shares to its associates. When making a surplus from operations, it is used to capitalize the loan programs in rural areas and to sustain the Agriculture School in Chaco and empower the Junior Achievement Program in its strategy to span a wider area past the major cities.

Fundación Paraguaya de Cooperación y Desarrollo was created in order to collect a group of business people and social leaders frustrated with the dictator's incompetence to deal with major problems regarding severe poverty and his show of no support for those who wished to fix the problems. The first goal was to improve business skills of microentrepreneurs, so then the rest of the people would soon be able to begin their own businesses, benefitting themselves and everyone around them. The correlation of skill and credit was significant which low values stunted the growth of the businesses. By obtaining a relatively small loan in a short amount of time could make the difference between gaining a profitable business opportunity and losing it.

Microcredit was a topic that few people had knowledge upon. A chance meeting with Acción Internacional, a company which at the time was creating microfinance programs in other areas of Latin America, allowed for a strong partnership that has grown stronger in the past two decades.

The end of the dictatorship allowed Paraguay to open up to the world and for Fundación Paraguaya, it allowed for more possibilities they could work with. It also emphasized the need for a working force with more knowledge of how business works, and how to compete in a fast growing global market. Their program of entrepreneurship education began in 1995, and with help from Junior Achievement International, they aimed to give students understanding on how the economy works, thus creating the future of entrepreneurs. One of the largest obstacles for Paraguay was to convey the benefits of economic development to the countryside areas. Action could not be taken even though more than half the population earned their living off the land. In 2002, Fundación Paraguaya was gifted with an Agriculture School that revolutionized a new radical development model: the Self-Sufficient Organic Farm School where students are taught all important details of balancing money with crops. The potential for self-financing schools is large due to the high demand for Agriculture Education that cannot stand alone with only government funds.

For the Maasai Joy Children's Centre, a similar project can grow from this. Ernest has a multitude of large projects in mind to expand his school and educating his children. At current standings, his school can take in around 100 students and to add to that number, he would need several new classroom buildings. One self-sustaining project is his chicken layers project. An initial fund would be spent on hundreds of baby chickens and for each student to raise and care for them until they are old hens. The eggs amounted from the project will allow for more meals for the students and it will teach the value of the chickens to them as many parents cannot afford to provide breakfast to their families. The project would cycle for 6 month spans and it would provide some income to the school as a gradual increase in eggs would be sellable to markets. The process of microentrepreneuring can apply to MJCC and work efficiently as Fundación Paraguaya. Ernest can come closer to his goals with these self-sufficient plans and it can cut down on the poverty in the areal while increasing the number of students for greater education.

Methodology

When aiming to help the Maasai Joy Children's Centre our first objective was to develop our knowledge of the school. By using the Maasai Joy website and Facebook page, the school's mission statement and overall background information was established. The founder of the Pre and Primary English Medium School stated, "My hope is to break the cycle of poverty through education." Kutingala, E. Thanks to our IQP Advisor (David Easson), we were able to get in direct contact with the founder of Maasai Joy, Ernest Kutingala. David Easson also introduced us to other individuals involved with Children's Centre. The first was Karie Orendorff, a professor from the University of Rhode Island, who visited the MJCC with a group of students in 2012 and plans to return with another group this coming summer. Michael Easson, David's son, also spent a few weeks at the school volunteering. Another figure who gave us a different perspective of our project was, Martin Burt, the founder of Fundacion Paraguaya. Information gathered from these three sources enabled our group to come up with these project goals: Find ways to better connect the MJCC's large network of supporters, create a budget for the school, find possible sources of income and take the first step towards a symbiotic relationship between the school and Worcester Polytechnic Institute.

3.1 Weekly Meetings

In order to stay on track and keep our group advisor on board with the project, we met with David Easson just about once every week. Our first couple meetings revolved around understanding the problems Maasai Joy was facing and coming up with possible solutions. These ideas and preliminary research on Tanzania and self sustainable schools led us into developing most of our project goals. From then on, week by week our group would assign tasks for each member and then present our progress to David Easson. He would comment on our work, give suggestions and from his feedback, we would all think of more objectives that we could take on during the next several weeks. As our

project progressed, so did our ideas and goals. Coming together as an entirety ensured that everyone was on the same page and allowed us to always be productive.

3.2 Background

The Maasai Joy Children's Centre is the school we worked with out of the many primary schools in Tanzania. The problems faced by the children, adults, including, teachers and parents, as well as the school itself, may be something seen nationwide in Tanzania. In order to understand the challenges within MJCC, a general background of Tanzania must be established. Through online research coming mainly from government websites, information relating to the landscape, geography, climate and economy was assembled. The websites of different organizations that focus on improving education and empowering people, were used to gather information on the culture of this nation. Aside from the websites, by interviewing Ernest Kutingala and others who have visited the MJCC revealed a more specific, in-depth understanding of the people and their culture as well as the difficulties within the Maasai area.

3.3 Interviews

Throughout the project, the main sources of information on the Maasai culture and solutions for aiding the Maasai Joy Children's Centre came from unstructured interviews. The first step was to get in touch with people who have had firsthand experience with the villages of the Arusha city or the MJCC. Our first interview was with Michael Easson, a young man who volunteered for six hours a day for three weeks at Maasai Joy Children's Centre in June of 2012. When we asked him what the school's biggest problem was, he mentioned their lack of income and the need for more school buildings. Michael also gave us a lot of information on the school's daily routine and a description of his visit to a Maasai villages on his last week. He explained how each family has about three acres of land and lives in 3-4 different mud cottages. The kids who attended the school were his only means of communication with the family he went to visit. From this home he visited, the walk to school was around 45 minutes. Michael had the chance to also go into the City of Arusha where he encountered many locals who were very persistent in trying to barter with tourists. This unstructured interview gave us a more personal perspective towards the school and culture. Michael also led us into our first networking idea which was to connect the large number of supporters the Maasai Joy Children's Center already has.

Mud cottages from Michael Easson's visit to a village

After speaking with Michael, our group came up with multiple questions for Ernest. Due to the seven hour time difference and busy schedules, our group was unable to coordinate a time in which we could have a Skype interview with Ernest. Instead, we decided to send him an email with the questions we planned on asking him. Our first question was; "What is the core problem at the school and the village?" Ernest's reply was; children being denied access to high quality, early-childhood education and primary education. Ernest explained how, the poverty among households (most households depend on subsistence farming), parental ignorance and the teacher's limited training and skills are the root causes of this problem. Another big problem he mentioned was the school's lack of funds to cover teacher's salaries and meet expenses like electricity, water and housing. One source of revenue Ernest spoke of was how:

"Maasai Joy started the Travel Charitable Company under the Umbrella of MJCC (Kibo Expeditions). Each traveler signed with Kibo Expeditions contributes 50 US dollars towards MJCC. In case there are more than 10 clients requesting the services of Kibo Expeditions this raised the contributions to 100 US dollars."

Our last question referred to the school's budgeting system, how much it takes for the school to run and where this money is coming from. Ernest gave us an estimate of 24,000 US dollars for a full year and mentioned how the funds were raised by supporters, friends, volunteers and MJCC founders. This wasn't enough information for us to fully understand the school's flow of money so we asked Ernest to send us some more information regarding the school's income and expenses.

Our group arranged a Skype interview with Karie Orendorf and two of her students -Ryan Kluk and Ben Uphem- that traveled with her to Tanzania and the MJCC. Speaking with them gave us great insight on a day in Tanzania, as well as helped us further our understanding of the culture and school we would be helping. When asked about the school's religious background, they mentioned the daily prayers (MJCC is a Christian School) but also stated that any child, is accepted into the school regardless of their religious background. Karie also said that nothing in the village seemed to relate nor support a religion besides the one church they came across in that area. They also went into detail about how culturally different the Arusha area is from the 'American Norm' by explaining what they understood of the patriarchy. When we asked about the school's challenges, they brought up the complete lack of school supplies. Karie mentioned that the school had only one chalk board eraser when they first got there, so kids would run from one classroom into another to grab the eraser when the teacher needed it. Luckily, when Karie and her students arrived, they brought about seven, fifty pound bags of school supplies to donate to the school. Along with this donation, her and the students also built shelves to properly store the school supplies. Thanks to Karie, Ryan and Ben, our group then decided to have a school supply drive at WPI for, the MJCC.

The Shelving and Supplies donated by the University of Rhode Island

In Late February of 2014, a Great Minds, Speaker Series took place at Worcester Polytechnic Institute and Martin Burt was one of the speakers. As the founder of Fundacion Paraguaya, he spoke about how linking microfinance and technology helped eradicate poverty in Paraguay. Starting from one school in Paraguay and driving them towards self-sustainability, he quickly branched out and began helping schools all over the world. His speech covered a handful of the issues that most schools he works with have due to lack of funds. After his speech, David Easson was able to get in touch with him and a couple days later we were able to meet with him individually. Once we updated him with our project details and some of Ernest's plans, his first question was, how was the school generating

money? After explaining to Martin how the unpredictable donations from sponsors and Ernest's tour guide income are the school's sources of income, he advised us to come up with a budget for the school. This budget will allow supporters to see where their money is going and hopefully find ways for these donors to be more consistent. A clear budget for the school will allow Ernest to plan ahead financially and be able to complete goals such as expanding the school.

3.4 PowerPoint Presentation

On February 6th, 2014, a weekly group meeting with our advisor took place, during which, David Easson proposed that we present our current progress to Karie Orendorf. The presentation would be in PowerPoint form and would display all the work completed up to that point along with a description of future work. On Wednesday March 5th, 2014, we had the opportunity to meet with Karie Orendorf and Ryan Kluk at the WPI Life Sciences and Bioengineering Center. During our presentation, we went through our goals for the project, the networking advances already made, the budgets created and the results of our school supply drive. At the end of our presentation, Karie commented on how we could more clearly display our yearly budget and project budget when using PowerPoint. She also explained to us her difficulties in learning how to make use of social media through her phone. -At this stage of our project, we had already created a Twitter and Instagram account for the MJCC. These accounts were made in hopes to promote the school and find new supporters and volunteers. - She mentioned that other people and Ernest could have the same problem. Karie proposed that we make a PowerPoint walk through explaining step by step how to use the Twitter and Instagram mobile applications. This was a great idea and so we began to work on one shortly after our meeting. The presentation made for Karie and Ryan would be used as an outline for our final PowerPoint later in the project.

3.5 Networking Ideas

Maasai Joy Children's Center has a large amount of supporters, donors, volunteers and friends. Our group thought it would be extremely beneficial to link together MJCC's supporters with Ernest beyond the existing connection via Facebook. The first idea we thought of was creating a Google email alias so that Ernest can quickly send out any type of message or document to these supporters. Another networking idea we came up with was, using other social media such as Twitter and Instagram, to further promote the school, find more volunteers and potentially business partners.

During our interview with Michael Easson, he informed us that he was the creator of the MJCC Facebook page. Michael mentioned that Ernest was able to connect and stay in touch with more of the travelers and volunteers he had met because of the Facebook page. Ernest also uses the Facebook page to post pictures, events, monthly and semester reports as well as public thank you letters to individual donors and supporters. Although the Facebook is set up, we want the page to become more active on posts and updates so that others can easily follow the school's progress. When sharing ideas

of how to improve Ernest's networking methods with Michael, we told him about our plan to create a Google email alias that would connect supporters. Discussing this with Michael led us to realize that there should be two email groups. One would be an "Advisory Board" and the other would be the remaining supporters. After proposing the two Google email aliases, Ernest handpicked the current members of the Advisory Board and they are now one email away. The rest of his supporters were grouped into another email alias. These two email aliases allow Ernest to share his monthly newsletters and other important updates with the convenience of only having to put in two email addresses. This was our first step towards helping networking become easier for Ernest.

After some time and more discussions of different ways to better network, we realized that these aliases are helpful, but were not an ideal setup for document editing or receiving feedback. After creating email addresses using Google, our first thought was to incorporate another Google tool called Google Docs. This other tool would allow Ernest and his Advisors to edit a document uploaded to the Google Docs at the same time. The only downfall to this tool is that it can be very unorganized. In hopes to find the best tool, our group reached out to, Paola Pedraza, a Project Manager for Google, located in the New York City region.

While explaining our project goals and our need of having a document which can be edited by a large board of advisors, Ms. Pedraza mentioned another google tool called Google Sites. She explained how this tool is a website that can be used to organize, edit and comment on documents posted by the manager of the site. Ms. Pedraza highly recommended using a Google Sites page rather than a Google Docs due to its higher level of organization and the ability to form a blog or discussion board on whatever document is posted. This allows for members of the site to comment back and forth on whatever subject is at hand before submitting their own revised work. After doing more research on what features the Google Sites page provides, the Maasai Joy Children's Center advisory page was created. The website is easy to use for managers and advisors, and has important links to various pages such as the Budget Page, Organization and Staff Page, and a PR and News Page. The website was made private so that Ernest and his Advisory Board could work together to assemble any important document that needs multiple reviewing.

Tools such as Facebook, Twitter and Instagram are great social media that can be used to promote and raise awareness for any type of organization. Our group made Twitter and Instagram accounts for the school in hopes that it will reach out to the public and find more supporters, volunteers and maybe business partners. The use of social media continues to grow with the help of smartphones allowing such easy access to the web. Now Ernest will be able to take full advantage of his smartphone and continue promoting the MJCC. Thanks to Karie's suggestion; our group wrote a letter to Ernest explaining just how beneficial these social media accounts could be, if used to their greatest potential. Along with the letter, we created a PowerPoint document with step by step instructions on how to use Instagram and Twitter so that Ernest can quickly learn how to operate such great tools. The more people hear about the MJCC, the more people will want to help.

3.6 School Supply Drive

In means to directly help the Maasai Joy Children's Center, our group held a school supply drive at the WPI Rubin Campus Center. Our goal was to have the supply drive last two weeks but due to existing reservations, we were only able to have it for one week straight. Luckily we reserved table number 3 for the week of February 24th from 10AM to 12PM. This table was preferred due to it being in the middle of the campus center. After reserving our table, we began to promote the supply drive to friends by word of mouth. Shortly after, we made a flyer and poster for the event and sent out an email to Campus-events@wpi.edu advertising the school supply drive. The flyer was posted on bulletin boards around school and the poster was hung over our table while table sitting. Another method of promoting the supply drive was by posting on the MJCC's Twitter and Instagram accounts which we asked our friends to follow and retweet. The hardest part during table sitting was getting people to come towards the table, most people would say that they didn't have money and then quickly walk away. After seeing how most people reacted when they were asked for donations, we decided to also ask people to go on Twitter and Instagram and follow the accounts we made for the MJCC. At the end of the week, the amount of school supplies collected wasn't what we expected, but we did raise awareness of the school and acquired more followers on our social media accounts.

The Flyer made by our group

Conclusion and Suggestions

In order for The Maasai Joy Children's Centre to accomplish its goal of breaking the cycle of

poverty in their region through education, the school will need better funding to support their growth and maintain their operations. The school is extremely underfunded and can hardly afford to provide necessary educational supplies to its students, let alone afford to expand their size to allow more students an education. Our group focused on creating strategies and setting goals that would aid in the school's financial stability. Through working on reaching these goals we helped Maasai Joy but there is still more to do and we only had a limited time, so we would like to leave some suggestion for MJCC and future groups to think about.

Our first goal dealt with improving MJCC communication network, communication between the school and its benefactors is paramount. The first thing that we realized the school needed was a better way organize its current benefactors as well as attract more individuals to help its cause. To better organize the supporters we broke them into two groups, the general group of supporters and a more select advisory board. We created a Google account to make two e-mail aliases, one for each group of supporters so Ernest would have a way to contact them. Also with the same Google account we made a Google site page so Ernest and his advisors would be able to share and work on documents in a secure location, it also will keep everything stored and organized in one place. The school had a Facebook but were not utilizing social media as well as they could have been, so we made a Twitter and Instagram account (linked with the Google account) and a PowerPoint to teach Ernest not only how to use them but use them to effectively promote Maasai Joy. We made all of this for Ernest so he can be better organized, communicate more clearly and faster, and reach a larger audience via the social media. We suggested that Ernest immerses himself in the technology because they more you use it the more sense it makes to you and the more effective you can be with it.

Maasai Joy's biggest stumbling block is not having enough funding to reach their goals. One way we can help them is to help them with the money they DO have. The different income and expense sheets were unorganized and confusing to understand when Ernest first sent them to us. We took what he sent us and organized into easy to read Excel sheets. He also sent us a list of different projects he wanted to complete, and the projected costs we also put this in an Excel spreadsheet. By organizing the info it makes it easier to look at and see where the money comes from and where it goes, this will make it easier for Ernest to budget out the year and save for the projects he wants to complete. We did not have all the numbers required to make the complete balance sheet but we have given Ernest and MJCC the tools, a template to follow in making one. If they use our templates and send it to the advisors via Google Sites for corrections Maasai Joy can keep a running budget year to year which will help them spend their money wiser then they have in the past.

Maasai Joy has limited supplies and resources, they cannot simply go to the nearest Walmart and buy paper, pens, and pencils for their students. They lack many school supplies that we all consider essential, and it is because they are expensive. Once again it comes back to finding ways for MJCC to find ways to better fund themselves. We saw their lack of supplies and after we heard that Karie brought them some her last trip we figured it would make sense if we collected supplies of our own. We had a supply drive and contacted businesses in the area in total we collected a large box of school supplies to send over. But simply collecting supplies and sending them over is not enough to help MJCC fund themselves, they need more sources of income. We believe that it would be beneficial for Maasai Joy to build faculties for tourist interested in an immersion trip, Ernest has experience in the service industry so this would not be difficult for him to plan, set up and advertise. It would also give older students the chance to get work experience in the industry, kind of like the Co-Op program Martin Burt

instituted at one of his schools with a hotel. Martin Burt is the founder of Foundation Paraguay, which helps school become self-sustaining by combining education and real life work experience, if Ernest and MJCC looks at his model for doing this I believe that they can institute a similar program. Another way for Maasai Joy to maximize their resource is to advertise when volunteer groups come via social media to show that it is a rewarding and helpful experience for both them and the groups that come and visit. Hopefully this brings more groups to the school to help them with a variety of projects

Currently MJCC receives no government grants or other kinds of funding from outside organization. They are Appling to groups like Lift Up Africa to help them get more donations and supporters but their presentations need work, they are disorganized and hard to understand at first glance. Our group made a marketing presentation and business plan they can show to potential investors that are more clearly organized and look better. If MJCC uses these as templates and updates them as needed hopefully they will be more attractive to investors and begin to get the large investment they need to expand.

I final goal was to begin to build a symbiotic relationship between Maasai Joy Children's Center and WPI. We began the work with our IQP trying to find ways for them to better advertise themselves and increase their funds but there is more work that can be done. Hopefully in the upcoming years more IQP's and MQP's continue to help them any way they can from business students creating a full business plan to mechanical engineers building water pumps for crops. In the future it would be ideal if it could become a WPI project site but there needs to be certain resources in place for that to become a reality. One is housing if MJCC builds faculties for immersion and volunteer groups they could have a dual purpose of housing students there for an MQP or IQP.

Appendices

- School Supply Drive Flyer, Poster and Pics of collected materials
- Business Plan PowerPoint
- Marketing Presentation PowerPoint
- Social Media Instruction PowerPoint
- End of B-Term Presentation PowerPoint

Eradicating Poverty Through Education

School Supply Drive!

CANDY!

Join us in supporting the:

MAASAI JOY CHILDREN'S CENTRE

ERADICATING POVERTY THROUGH EDUCATION

MAASAI JOY PRE & PRIMARY ENGLISH MEDIUM SCHOOL
P.O Box 10107 Arusha - Tanzania. Tel: +255 767 378252, +255 787 378252
Email: info@maasaijoytz.org/info@maasaijoy.org.
Website: www.maasaijoytz.org

by donating extra school supplies and notebooks to help those children in need! All donations are appreciated and there will be **CANDY** for those who help!

WHEN: The week of Feb 24th from 10AM-12PM

WHERE: WPI Rubin Campus Center

Check out the Facebook, Twitter and Instagram!
https://www.facebook.com/MaasaiJoyChildrensCentre
@MaasaiJoyCC
Instagram - MaasaiJoyCC

MAASAI JOY CHILDREN'S CENTRE

SCHOOL SUPPLY DRIVE
MON-FRI 10AM-NOON
FEB. 24-27

Pens · Pencils · Erasers
Notebooks · Binders
Lined Paper · Folders
Markers · Crayons · Rulers

Small Contributions
Make BIG Differences

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