

Lauren Powell
Davidson Fine Arts High School
Augusta, GA
India, Factor 8: Food Spoilage

India: Using Yeti Coolers to Keep Food Cold Longer

The problem of poverty and hunger takes place all over the world. Based off of the statistics placed on the Rural Poverty Portal, more than one billion people in the world live on less than one US dollar per day, and more than 2.7 billion try their hardest to live on two US dollars per day. Having an adequate amount of food is a basic human right that everyone deserves, but every 3.6 seconds a person dies from starvation (including 6 million children under the age of five). Around the world, more than 800 million people go to bed hungry every day-- this includes 300 million children. And hunger is still the number one cause of death in the world.

One of the hardest- hit countries regarding poverty and hunger is India. A major cause of poverty in India is the limited access to productive assets and financial resources. Also, India is a patriarchal society and the man tends to be the only person who is able to bring home money, since the women in the country are not given a fair chance at obtaining an education. More than 300 million Indians are made to survive on less than 20 Rupees (less than fifty cents in American money) a day (World Bank Indicators), and poverty is deepest among those of certain social castes. Many of the poorest citizens of India live in the tropical area of the country where there are droughts and water shortages, so they are unable to produce their own agriculture. In addition to the lack of agriculture, these rural Indians tend to be the least educated and have the least job opportunities.

With such high numbers of very poor people, there are also high numbers of hungry and starving people. For a person in India with an average family size of five people, finding the money to pay for food and also a home to live in is nearly impossible. Of all the hungry people in the world, one -third of them live in India alone. In 2013, India ranked number 63 out of the world's 78 hungriest countries. And, according to the United Nations, 17% of Indians are too undernourished to lead a productive life. A whopping 25% of the world's undernourished people live in India, and it's estimated that everyday around 3,000 Indian children die from illnesses associated with being malnourished. UNICEF reports that almost 50% of Indian children are underweight. And sadly, many of India's poor may not eat anything for a day or two at a time.

The Indian government has set a ridiculously low poverty level of 27 Rupees (about 40 cents per day), and there are about 56% of Indians living below that poverty line (Rural Poverty Portal). Many of them live in mud huts with several members of the family living in one hut together. It's normal that a family of 10,- which may include a husband and his teenage wife, their children, his parents, his sisters, and a cousin or two, - would coexist in a small one room shack. Most of the time, the women do not work and the men have menial jobs (due to a lack of education) that pays them next -to -nothing. So, earning enough money to consistently feed their family of 10 every day is impossible. It is typical that not a single member of the family will eat enough to feel "full".

For the men in the family, they may work 10- to 12--hour days in a land owner's rice paddy field without any food in their stomachs. After a month, each man may have earned 2500 Rupees (about \$37 USD). This is less than minimum wage, and once the paddy sowing season is over, he will have to work elsewhere - - for example, a brick kiln where the work is very strenuous.

Here, a man could earn about 1800 Rupees per month (\$27 USD). With so little money to support so many people, the types of food this family could afford are meager, at best.

A family like this one would be lucky to be able to afford a subsistence diet of boiled rice and a curry made of discarded stalks of local vegetables. Once the young wife cooks, since there is no refrigeration, the food has to be eaten within a safe timeframe to prevent spoilage. Once the food is gone, the family may not eat for a couple of days until more money comes in.

Hunger in India isn't caused by lack of production of food. India is the second largest producer of fish, fruits, vegetables, goat and sheep meat, and many other foods world-wide. India is also the largest exporter of rice in the world. So, although the country has no problem growing wheat, harvesting fruits and vegetables, and catching fish, getting this food to its poor people throughout the country has proven to be difficult. The unavailability of food partially comes from the fact that the food is too expensive to pay for, but also comes from the fact that 30% of the country's fruits and vegetables produced there rot before even reaching the consumers. In a country such as India where there are over 1.2 billion mouths to feed daily, any lost food means that millions of people will go hungry.(World Bank Group)

Many people in India either work in the field of agriculture or profit from agriculture directly, so the success of their plants and the amount sold greatly impacts the amount of money they can take home to their family. If 30% of all the food they grow goes to waste, then that amounts to approximately \$8 billion dollars wasted per year. If we were to find a way to make sure the goods were properly refrigerated from the time they were harvested until they were eaten, then money wouldn't be wasted like it is now.

Not only is the money wasted, but food that could be going to feed a family is now being thrown away by the tons -either because of rotting or because the food doesn't "look good".The idea of people in India throwing away food that is unattractive may seem Finding a way to not only ensure people have proper ways to transport and store food but also to cut down on throwing away foods that aren't "pretty" could tremendously help the farmers and also everyone in India thrive in the area of food security. "Indians are picky about how their vegetables look. They have to look good," says Mohit Sachdeva, owner of Evergreen Vegetable and Fruit Store in Delhi's INA market." (Finding the Beauty in ugly food). It's a phenomenon that to some does not make much sense considering that India is so populous and needs as much food as possible, but it is an everyday occurrence. It doesn't happen in India alone though. According to a study completed by the Waste and Resource Action Program, we waste about 400 billion dollars world-wide because we throw away "ugly" foods. This is not sustainable.

The problem of food spoiling before it reaches the consumer is still the main topic that needs to be discussed though. One major reason for the overwhelming amount of food going bad before it reaches consumers is simply because they do not have the proper technology to keep the food cool while being transported in the trucks. Almost all of the food produced in India is controlled by the government--run Food Corporation of India. Only about 2% of food in India gets stored in a cool facility -(Manawaria) . By reducing the amount of food that spoils before reaching the consumer, the prices the people in India have to pay for their food would be lowered because there would be more to buy. This would make food more monetarily accessible to the rest of the population.

All of the rotting food brings other environmental and health problems. Rodents are attracted to the rotten food and bring diseases with them. When they bite people and other animals, they pass those diseases on to them. Also, the decomposition of rotted food produces carbon dioxide and methane gasses. Methane is much more potent than carbon dioxide as a greenhouse gas and has a negative effect on global warming and climate change.

In order to begin working toward decreasing the numbers of people who go hungry everyday in India, we must first find a way to properly transport the food so that people can actually purchase it. The truth is that a lot of the people in India do not have access to reliable electricity, making the idea of trucks with

cooling technology more difficult to create there than it would be in more advanced countries. The only way to keep the food cool for longer periods of time without using electricity would be to use a very strong and reliable cooler. Partnering with a corporate sponsor could possibly achieve this goal.

There are several companies around the world that donate items to other countries when someone buys their products. For example:

- The shoe company Toms donates one pair of shoes to a child who needs it whenever someone buys their shoes.
- Yoobi; For every school supply purchased, they donate one to a school in need
- Better World Books; -For every book purchased, they donate one to kids in Africa or Feed the Children
- The Company Store;- for every comforter purchased, they donate one to a child in need

Known for creating highly-durable and very effective and efficient coolers that can keep food cold for extremely long periods of time, Yeti Coolers could do the same for their products. By partnering with the well-known Yeti Coolers company and using their technology to insulate food trucks in India with the same material, we could greatly cut down on premature food spoilage. Yeti Coolers are insulated on all sides with thick pressure-injected polyurethane foam to make sure ice stays frozen longer. If the food trucks had this material lined on all sides and also used dry ice or even regular ice to keep the goods cold it would be very likely that the food would stay fresh while in transit. For every Yeti cooler sold, some of the money could go towards creating these trucks.

Of course, Yeti Coolers has always been a for-profit company so trying to convince them to use some of their money for philanthropic purposes may prove to be difficult. Once they are made aware of the severity of this issue in India, I'm hopeful that they will be open to helping those less fortunate and lend a hand to other countries that are in desperate need of help. Currently, one U.S. Dollar is equal to 67.20 Indian Rupee. Just \$1 million USD would make a huge impact on the Indian economy and could produce a number of insulated trucks to help transport refrigerated foods to the people who need access to them. According to Inc. Magazine, Yeti Coolers is now worth well over 400 million dollars and is steadily growing. \$1 million USD is just ¼ of one percent of the current value of Yeti Coolers. Not only would giving a small amount of their profit to a good cause barely put a dent into what they are earning, it also has several benefits for the company as well. Companies that donate to charity get tax breaks, increased sale performance due to people wanting to put their money to good use, and it also helps with publicity. If Yeti Coolers sent a portion of the money spent on every cooler over to India to help create these insulated trucks, they would see their sales increase dramatically. They could even create a separate product such as bottles or keychains and use the money raised from those items to help out India, and they would still see an increase in overall sales and in their popularity.

The problem of undernutrition in India is partially because food spoils before reaching the consumer, but there is the additional issue of food spoiling so quickly after the consumer buys it that needs to be addressed as well. Most people in America have a refrigerator in their home to preserve their food, but in India that is a luxury. By not being able to have places to keep their food so it will not spoil, it increases the chances of it going to waste. This is why using alternative refrigeration methods that could keep their food cooler for longer without using electricity is very vital. By utilizing passive cooling techniques, people all over India could find a cheap and pretty reliable way to preserve their food for longer - without using electricity or taking up much space.

One way of keeping foods from spoiling is through evaporative refrigeration. Evaporative fridges use the effects of evaporation and condensation in order to cool off the food that is inside of it. The materials they can use to make the fridge are very cheap. By just using some kind of shelf unit, burlap bags, and water they can keep their food cooler for a substantial amount of time for close to nothing out of their pockets.

Another alternative to electric refrigeration is the Zeer pot, invented by Mohammed Bah Abba in Nigeria. The Zeer pot simply consists of one clay pot within another, sand, water, and a cloth. They would place the smaller pot inside the larger pot and fill the space between them with sand and water. Then, after placing their food inside the smaller pot, they would cover both pots with a wet cloth. As the water evaporates, it takes with it the heat that would rot the food much quicker.

There are several organizations around the world that are working to decrease the problem of hunger that is present in every country. Two organizations could certainly help gather and transport the materials needed to make the evaporative fridge or the Zeer pot. The materials required are very cheap and these organizations could definitely help raise the funds needed in order to get the materials to the people.

The first organization, Action Against Hunger, fights to uncover the root causes of hunger in India and other countries where acute and chronic malnutrition are prevalent. They address issues of access, income, and production regarding food needs in those countries.

The second organization, The Hunger Project, works to help women leaders in rural communities learn leadership skills and empowers them to advocate for the needs of the citizens in those areas so that they get access to education, clean water, healthcare, and food. The Hunger Project could help facilitate educating people on how to make and use these new refrigeration methods.

By increasing the shelf life of food for people in India, their money will not be spent on food they end up not even eating. If the plan of partnering with Yeti cooler works in India, then we can take steps to start implementing this program in other countries that suffer with the same problem. This will greatly help with the undernutrition that the people face everyday and help the economy by increasing the amount of food that is able to be sold.

The government-run Food Corporation of India (FCI) also needs to take some responsibility in helping to ensure that the citizens of India are fed and have access to foods that will help keep them from starving. Since its founding in 1965, one of the objectives of the FCI has been to build up and maintain stocks of food grains and to distribute grain foods to those who live below the poverty line. However, the poverty level established by the government is so low (27 Rupee per day which is equivalent to 40 cents USD per day), that even though there are millions whose salary falls beneath that threshold, there are also millions whose salaries are above that level that are still starving due to lack of access and lack of money. The government needs to realize this and increase the poverty level limits to include the millions of working poor who don't currently qualify for the distribution of grain from the FCI. Even if they doubled the poverty limits to 54 Rupee (80 cents USD) per day, that's still extremely low, but millions of other people would now have access to the grain distribution.

Another way to try to get food out to the public is by encouraging people to buy food that is not so attractive, as mentioned earlier. In many countries around the world, people have started creating stores that sell these uglier foods at a discounted price. If India created markets that sold these uglier foods for much cheaper prices, it would ensure that more people had access and the funds to buy food and would lower the amount of people that are starving in India.

The FCI could also purchase these uglier fruits and vegetables from farmers and distributors at a discounted rate and then distribute these foods to the country's poorest citizens. This helps farmers to earn a little more money and gets the food to people who really need it. As it stands now, these foods are thrown out after they have rotted, resulting in lost lives and money.

The problem of malnutrition in India is very prevalent and has no easy fix. There are several contributing factors to why this problem is so widespread in the country, but by addressing each factor individually, maybe we can reach a point where starvation is not the number one killer in India. By providing the

citizens of India with one insulated truck at a time (built with Yeti technology); teaching them to create their own Zeer pots and how to use evaporative refrigeration; and increasing the poverty limit and revamping some of the programs within the Food Corporation of India so that more of the nation's poor would have access to grain food - I hope to work toward that goal - one family at a time and one community at a time.

Works Cited

- "About Us." *Department of Food and Public Distribution*. Government of India. Web. 23 July 2016.
- "A Day in the Life of India's Poorest." Special Report. August 2, 2013. Accessed June 14, 2016. <http://indiatoday.intoday.in/story/murshidabad-india-poverty-in-india/1/297697.html>.
- "Action Against Hunger Logo." *Food Security & Livelihoods*, 2015. Web. 27 July 2016.
- "Alternative Refrigeration - Three Methods of Passive Cooling." *Alternative Refrigeration - Three Methods of Passive Cooling*. Web. 22 July 2016.
- "Charitable Companies: 5 Benefits of Corporate Giving - Small Business Blog." *Small Business Blog*. Kabbage, 2014. Web. 21 July 2016.
- "FAQ | YETI Coolers YETI Coolers « YETI Coolers | YETI Coolers." YETI Coolers. Accessed June 14, 2016. <http://yeticoolers.com/pages/faq/>.
- "Finding the Beauty in Ugly Food - Times of India." *The Times of India*. Sharon Fernandes, 21 Feb. 2016. Web. 21 July 2016.
- Gran, Ben. "Charitable Companies: 5 Benefits of Corporate Giving - Small Business Blog." *Small Business Blog*. Kabbage, 2014. Web. 21 July 2016.
- "Hunger Facts | The Hunger Site for Facts: Bhookh.com." Hunger Facts. 2009. Accessed June 12, 2016. http://www.bhookh.com/hunger_facts.php.
- "India: Issues and Priorities for Agriculture." India: Issues and Priorities for Agriculture. May 1, 2012. Accessed June 12, 2016. <http://www.worldbank.org/en/news/feature/2012/05/17/india-agriculture-issues-priorities>.
- "India." *The Hunger Project*. Web. 21 July 2016.
- Manawaria, Sachin. "Lack of Storage, Poor Transport Facilities Plague India's Food Exports." *The Dollar Business*, 18 Aug. 2014. Web. 25 July 2016.
- "Rates Table Converter 1 Indian Rupee Rates Table." *Currency Exchange Table (Indian Rupee)*. Web. 13 June 2016.
- "Rural Poverty Portal." Rural Poverty Portal. Accessed June 12, 2016. <http://www.ruralpovertyportal.org/country/home/tags/india>.
- Saporito, Bill. "How Two Brothers Turned a \$300 Cooler Into a \$450 Million Cult Brand." *Inc.com*, Feb. 2016. Web. 26 July 2016.