

Ouma Amadou
Rock Bridge Senior High School
Columbia, MO
India, Factor 11

India: Food is more than just Calories; it's life.

For the past twelve years, each summer, in Columbia, MO, Douglass Park's Lunch in the Park program offers a free, healthy lunch during the week for children under the age of 18. Lunch in the Park is a program funded by a partnership between the U.S. Department of Agriculture, the Columbia/Boone County Department of Public Health and Human Services, and the Voluntary Action Center of Boone County. Lunch in the Park's location feeds children who during the school year are fed through either free lunch or reduced lunch aid. In addition to meals, students have the opportunity to meet local Girl Scouts, benefit from Daniel Boone Regional Library's Bookmobile, and even see a plethora of demonstrations from bugs to recycling. (Martin) The lunch includes a sandwich, fruit, chips, and milk. In 2010, seven-year old Jayln King described her meal as, "It's good, tasty, delicious, and great." (Braden) On the other hand, a similar program in rural India does not garner the same type of appraisal. At a state-run nursery in rural Rajasthan, in 2011, 35 year old Pamlesh Yadav complains of India's free lunch program, "Look at this muck," holding up a tin-plate of bilious-yellow grains, a mixture of wheat, rice and mung beans. "It literally sticks in the throat. The children won't eat it, so we take it home and feed it to the cows." Mrs. Yadav is not in any position to turn down a free meal. Her entire family, including herself, all suffers from malnourishment. Mrs. Yadav even is anemic; She survives on potato curry and wheat chapatis. ("Economist ") This free lunch program is part of India's Integrated Child Development Services Scheme (ICDS). ICDS is the largest child-nutrition program in the world. Since India's independence and the Green Revolution, India has attempted to combat its lack of nutrition and rampant malnourishment. India is not on track for Millennium Development Goal One: End Poverty and Hunger. However, it is not too late to bring India back on track. India needs to focus on providing better food to its citizens and fixing its government programs dealing with nutrition in order to create the optimal efficiency. India would benefit from multiple government agencies dealing with nutrition rather than one large, overextended program like the ICDS. Food is more than just calories. Food is life, and without food, Indians will continue to die each year from malnourishment.

About 72% of India's nearly 1.1 billion citizens live in rural areas. ("World Bank") Although services are the major source of income for India, over half of its citizens belong to the agriculture workforce. Due to this large gap, many rural farmers are not able to obtain enough funds in order to live above the poverty line. Many families live on only a one US dollar a day. ("USDA ") Rural families depend on traditional agriculture and rain-fed agriculture for their farms. Many rural families grow traditional crops such as high-yield wheat, rice, and cotton. Nuclear families work the farm together and typically the males will attempt to sell their produce at the market. A majority of the time, most families only sell a small portion of their crops. Even though rural families spend all their time growing food, they still remain malnourished and neglected.

The Green Revolution during the 1960's and 1970's in the Punjab region encouraged Indian farmers to switch their methods to American style farming. This new system called for a large-scale irrigation system to use lots of water. Over the years, Punjab farmers and even other rural Indian families have discovered they no longer have access to enough water to stabilize their farmers. Their soil is depleted and many farmers have resorted to loans thus leading to debt. (Zwerdling) This debt prevents farmers from having enough money to feed their family and causes them to resort to food that is high in calories, but low in necessary nutrients. To continue this cycle of destitution, rural families have limited access to proper healthcare and education.

Rural families' main access to healthcare and education comes from *anganwadi* (nursery) centers, which typically provides aid to women and young children. The lack of appropriate infrastructure and services in rural areas also further diminishes agricultural productivity. The infrastructure issue is made larger because rural families do not have the energy to increase agricultural productivity without guidance. Rural families eat foods that are very high in calories, such as wheat, rice, and beans, but low in the necessary nutrients to sustain life. (This type of hunger is known as micronutrient malnourishment or hidden hunger. It's a hunger created by a lack of micronutrients in the diet.) Without the necessary nutrients, there is no way that India has the capability to rise above its agricultural woes. Its work force needs to be healthy and strong in order to tend to crops. Today's agriculture work force in India is emaciated and weak. Proper healthcare, nutrition, and diet are the first steps to obtaining food security.

1 in 3 of the world's malnourished children live in India. ("Unicef ") At this point India will definitely miss the most important Millennium Development Goals: halving malnutrition by 2015. ("Economist ") In addition, the prevalence of under-weight children in India is nearly double than that of sub-Saharan Africa and much of the hunger is concentrated in certain rural areas of India. ("World Bank") Although India has made great economic growth in the past 10-15 years, India still is not combatting malnourishment. This situation is extremely severe. The current correlation between India's economic growth and malnourishment is completely ludicrous. It would greatly benefit the Indian government to lessen the extent of malnourishment. Malnutrition is directly tied to productivity. The World Bank says that in low-income Asian nations physical impairments caused by malnutrition take away 3% of GDP. ("Economist ") India will never reach its full potential if it allows malnutrition to continue to kill its citizens.

Malnourishment is still greatly affecting the Indian population. It is a social ill that continues to spread and appears that it will not lessen up. Anemia affects 74 percent of children under the age of three, more than 90 percent of adolescent girls and 50 percent of women. Iodine deficiency, which reduces learning capacity by up to 13 percent, is widespread because fewer than half of all households use iodized salt. Vitamin A deficiency, which causes blindness and increases morbidity and mortality among preschoolers, is another health problem. (unicef) Humans need these nutrients to survive, but these statistics illustrate that the health trend in India needs large improvement.

In 2008, India's first ever India State Hunger illustrated that hunger was in its most severe levels. ("International Food Policy Research Institute ") Even today, hunger still continues to be at its most severe levels. Moreover, the Millennium Development Goal Monitor illustrates there this is hope for India. At this point for Millennium Development Goal One, India is rated as having the possibility of achieving this goal if changes are made. However, there has been no change in India. Programs dealing with malnutrition remain at the status-quo level. Rural families all across India still suffer and India wastes nearly 400 million dollars annually by giving its citizens cheap food rather than food packed with the appropriate amount of nutrients and calories. ("Economist ")

If there is possibly a negative impact of lessening the amount of malnourished individuals in India, the benefit definitely outweighs the cost. Once citizens are able to obtain the necessary amount of nutrients, the necessary amount of calories, and the necessary amount of time to alleviate the effects of malnutrition, India will gain a large work force once again. Productivity will increase because individuals are healthy enough to sustain a career, or invest in the government, or even maintain a familial crop. Rural families will have the opportunity to rise above the poverty line. It is absolutely necessary to improve the levels of malnutrition in India.

India contains the second largest population in the world. As time continues, the population will only increase. Population increase is normal, but at the current levels of malnutrition in India, a large

population increase will create an everlasting system of malnourishment. Before India has another large population increase, the levels of malnutrition needed to be controlled. However, if there is an immediate intervention in the problem, then population increase will not drastically create a negative course of action. The new citizens of India will have the opportunity to live in a society where they are protected from the past horrors of malnutrition and consistently have a right to food.

Moreover, along with population increase, urbanization could create the opposite end of malnutrition: obesity. More people are moving into cities and adopting sedentary lifestyles. These individuals, who in rural areas would be malnourished, in the city they became obese due to the abundance of fatty, high caloric food. 48% of urban Indians are overweight. ("india facts.in ") There is a thin line between overweight and obesity. This means that the government needs to invest not only in the needs of the malnourished rural Indians, but also, the obese urban Indians. Future food policies need to address both spectrums of weight-related health and ensure that in the future rural and urban Indians are able to have the same type of healthy diet.

The most important way to address obesity and malnourishment in India is to re-vamp and reorganize India's Integrated Child Development Services Scheme (ICDS). Indian economist, Amartya Sen, once said, "What really matters with food is not the overall supply, but individual access." ("Economist ") Currently, the ICDS program has a supply but does not provide well for individual access.

The ICDS was launched in 1975. It is the world's biggest early childhood nutrition program. The program provides an *anganwadi* center with one teacher and an assistant for every 1,000 people. Each center is responsible for providing nutritional care to pregnant women and all children up to six, (Indian children start school at age six). These centers also provide daily childcare and education along with being tasked with the job as well as keeping a dozen or so registrars containing information ranging from children's weights to financial accounts. With this large burden of work, *anganwadi* workers over time begin to focus on the group they see everyday. This group is typically children over the age of two. After the age of two, mothers begin to take advantage of free childcare and meals from the *anganwadi* centers. This program currently turns a blind-eye to children under two and pregnant mothers, when in reality that is the group that needs the most attention. The first 1000 days of life are the most important and the first 1000 days begins with pregnancy.

Anganwadi centers currently do not have the resources to aid pregnant women and children under age two. Along with the lack of resources, there is not a semblance of quality and availability between ICDS centers across India. The margin of difference between each individual ICDS center is too large. Typically, the most impoverished states and the ones with the highest rates of malnutrition, correlate to the lowest number of centers. In reality, the most impoverished states need the most centers and the most amounts of resources. This is a huge problem but it can be fixed.

India's government needs to expand the efforts of the ICDS program. In order to do this, India needs to increase the number of centers in states with the largest number of malnourishment, but also divide centers by age group in local areas. For example, Brazil's *Fome Zero (Zero Hunger)* has 90 separate programs run by 19 ministries. It contains everything from conditional cash-transfer scheme, called Bolsa Familia, to irrigation projects and help for smallholders. Currently, the levels of hunger in Brazil have decreased and will continue to do so. ("Economist ") India does not have to adopt the same plan as Brazil's *Fome Zero*, but they do need to follow of the model of expanding more agencies to deal with singular tasks instead of having a few people do multiple tasks.

At first the ICDS should create two different centers; one center that focuses on pregnant women and children under two, while the other focuses on children from ages two to six. In each center, there should

be staple food items, like wheat and rice, but also fruits and vegetables, and meat in areas where the community eats it. These centers need to obtain vegetables with fortified nutrients from HarvestPlus. Also, the centers need to invest in making healthy food appealing. People crave tasty food. Each center should have a set of employees that only cook meals. The cooks need to provide a wide variety of nutrients, especially vitamin A, iron, zinc, and iodine in all prepared meals.

After the separation of ages with the *anganwadi* centers, the next step should be investing in nutritional education so that rural families can understand the importance of investing into a healthy diet. These seminars should bring in local health experts from the government to educate men and women. These seminars should be sex-separated so that women can fully have the right to information regarding their health. Men will also have the chance to understand information regarding their diet. It will put power into the hands of the people. Next, the ICDS centers should begin a transition from focusing on the rural poor and malnourishment to transitioning to obesity prevention in urban locations. The *anganwadi* centers would do the same type of work but focus on obesity prevention. Eventually the levels of malnourishment in India should begin to decrease, but fixing the ICDS is not the only way to combat this problem and ensure food security.

The government of India needs to shift resources into the ICDS program in order to fund its renovation. In April of 2012, the country of India spent somewhere around 500 million dollars to test launch the Agni-V missile as a means to showcase their military prowess. It would cost more than 40 Agni-V missiles a year just to ensure food for all Indians. (Linnekin) The government of India should lessen their focus on developing nuclear missiles and fund money allocated for defense into an allocation for revamping the ICDS system. In addition, individuals such as Sonia Gandhi, chairwoman of the ruling UPA, who backs the Right to Food Bill, (a bill that would ensure food for all Indians which was drafted by the National Advisory Council), should use the current ICDS system as a means to ensure food for all. Sonia Gandhi should use her sway among other politicians to ensure that each year there is money in the national budget to renovate the ICDS. Currently, the Right to Food Bill does not address on how to reform current public distribution systems, but if the politicians such as Sonia Gandhi use their power to transition funds into the reformation of the ICDS program, they can alleviate hunger in India. They will be able to prove that a Right to Food Bill can combat hunger. Until funds are transitioned from India's defense into the ICDS, India will remain a stark contradiction: wealth drowned by great poverty.

By improving the ICDS system, the India government then needs to invest in "biofortified" foods. "Biofortified" foods are crops that contain extra vitamins. The first 1000 days of life are important and if pregnant women, babies, and children have access to biofortified foods they can prevent micronutrient malnutrition. The India government needs to allow HarvestPlus, a program that wants to reduce hidden hunger and provide micronutrients to billions of people directly through staple foods, plant more biofortified crops throughout their country. HarvestPlus focuses on three critical micronutrients that the World Health Organization has determined as most limiting in diets: iron, zinc, and vitamin A. These three nutrients are three of the four nutrients that the citizens of India need. The last one, iodine, can easily be added into the diets of Indians, through iodized salt.

Since 2004, HarvestPlus has emerged as a global leader in creating biofortified crops and now works with more than 200 agricultural and nutrition scientists around the world. According to Harvest Plus, India is rated high for global prevalence of micronutrient deficiencies. India will greatly benefit from their efforts. Currently, HarvestPlus plans to release a biofortified wheat crop infused with zinc in 2013 in India. At this point, this is a very localized effort, but if Indian agricultural universities continue to work with HarvestPlus, more crops can be grown throughout the Indian nation. Eventually, there should be enough of a supply of biofortified foods that the levels of micronutrient malnourishment will decrease. Most importantly, biofortification is cost-effective. A one-time investment in a biofortified crop means that it will generate new varieties for farmers to grow for years to come.

As time continues the biofortification gene will continue to be in staple crops ensuring that citizens will gain the necessary nutrients. The initial cost is relatively inexpensive and the 2008 Copenhagen Consensus listed biofortification as one of its top five solutions to global challenges because of its cost-effectiveness. In addition, Harvest Plus released information that seventy-five US dollars can buy Vitamin A supplementation for one year only to 37.5 million pre-school children in Bangladesh, India, and Pakistan. Seventy-five US dollars can buy iron fortification for one year for 375 million persons, which are about 30% of the population in Bangladesh, India, and Pakistan. Lastly, the estimated cost for biofortification that involves developing and disseminating iron and zinc dense rice and wheat varieties for South Asia, which would be available year after year, is 75 dollars. HarvestPlus' work is relatively inexpensive and allows for great results.

If India takes upon the necessary tasks of improving the ICDS program and allowing for the development of more HarvestPlus' crops, India will be able to make headway, on not just one, but three of the Millennium Development Goals. India will be able to make sufficient development on eradicating hunger and poverty, lessening the severity of maternal death, and lessening the severity of child mortality. Once India develops strong systems that provide nutritious food to its citizens, over time, families will have more food and be able to sustain a healthy life.

India is not able to make all these advancements by itself, but the nation of India does need to take a bulk of responsibility for its self. The national government should work closely with local communities in order to ensure that each *anganwadi* center has the necessary tools and an appropriate amount of workers. Furthermore, in local communities, there should be an elected leader that represents the community as a whole in conveying messages regarding health, nutrition, and the quality of food. From there, the national government and agricultural universities should work closely with HarvestPlus in order to identify the areas to grow HarvestPlus' biofortified crops. This will ensure that HarvestPlus is collaborating with individuals who understand not only the complexity of agriculture in Indian, but also the complexity of the Indian people. Additionally, organizations such as the United Nations and FAO should continue to track India's efforts towards the Millennium Development Goals.

Malnutrition is just not a problem for the government in India. It is problem for all Indian citizens. Everyone plays a role in combatting this serious problem. In the past, in rural areas of India, there used to be a panchayat system of village councils. These councils would include a certain number of volunteers that were elected to represent the local people's interests. Concerned citizens need to recreate this system once again. There is obviously a strong miscommunication between the national government and the citizenry. The only way to solve this miscommunication is to create a strong link between the two groups. These local elected leaders need to communicate if their region is being weakened by malnutrition, while the government needs to communicate what their plans are to help this problem. Moreover, non-governmental organizations in India should attempt to fill the gaps left by the government during the transitioning period with renovations to the ICDS. For example, it will take a few years for the ICDS to gain enough momentum to change the severity of malnutrition; the government will need Indian non-governmental organizations to help their local states so that progress will not be lost. It will take all Indian citizens to help end malnutrition in India. Everyone has a role in ending this problem.

"Look at this muck," holding up a tin-plate of bilious-yellow grains, a mixture of wheat, rice and mung beans. "It literally sticks in the throat. The children won't eat it, so we take it home and feed it to the cows." In today's India, the malnourished refuse to accept free food because of lack of appeal. As George Orwell once said, "When you are underfed, harassed, bored, and miserable, you don't *want* to eat dull wholesome food. You want to eat something a little bit *tasty*." Tastiness can be achieved in India along with lessening the severity of malnutrition. India needs to reorganize the Integrated Child Development Services Scheme (ICDS). This organization needs to be divided by age group in order to give the

adequate amount of attention to each individual in need. The ICDS needs to give the most attention to pregnant women and children under the age of two. These groups provide the future for India and if they are attacked by malnutrition, India's future turns bleak. Once the ICDS gives the appropriate amount of attention to children under two and pregnant women, India's future will shine brightly once again. Moreover, the free food needs to have more than just calories. It needs to have the nutrients to combat hidden hunger. This can be achieved through the HarvestPlus crops. The Indian government needs to ensure that HarvestPlus continues to plant their crops throughout the nation. These HarvestPlus crops should continue to plant biofortified staple crops such as wheat and rice. Over generations, these crops will continue to spread the nutrient-gene throughout the same type of plants. Nutrients are essential to sustaining life. In addition, food given through the ICDS program needs flavor. India should be ashamed that individuals are disgusted by these meals. Hunger will only end when the Indian government respects the palate of its citizens. Even poor people want options. It will not take more time, more effort, or even more money to foster a well-fed society. It takes more appreciation, more respect, and more thoughtfulness. Eventually, rural Indians who receive free mid-day meals will describe their meals like young Jayln King, "It's good, tasty, delicious, and great." Eventually 1 out of 3 malnourished children will not live in India. Eventually rural Indians will not suffer from hidden hunger. Eventually agricultural productivity and food security will increase. Eventually India will recognize that food is more than just calories; it's life.

Works Cited

- "About HarvestPlus." *Harvest Plus.*, 2009. Web. 30 Jul 2012.
<<http://www.harvestplus.org/content/about-harvestplus>>.
- "Agriculture- India: Priorities for Agriculture and Rural Development ." *The World Bank.*, 2011. Web. 30 Jul 2012. <http://go.worldbank.org/8EFXZBL3Y0>.
- "Banyan The Indian exception." *The Economist* . The Economist , 31 Mar 2011. Web. 28 Jul 2012.
<<http://www.economist.com/node/18485871>>.
- Bhowmick, Nilanjana. "India's food crisis has many ingredients ." *The Guardian* . N.p., 19 Jul 2011. Web. 4 Sep 2012. <<http://www.guardian.co.uk/global/development/povertymatters/2011/jul/19/india-food-crisis?CMP=email>>.
- Braden, Jonathan . "Program offers kids a free, nutritious meal." *Columbia Daily Tribune* . N.p., 14 Jun 2010. Web. 31 Jul 2012. <<http://www.columbiatribune.com/news/2010/jun/14/summertime-sit-down/>>.
- Farmers In Debt ." *NPR*. N.p., 14 Apr 2009. Web. 30 Jul 2012.
<<http://www.npr.org/templates/story/story.php?storyId=102944731>>.
- "India Faces Urgent Hunger Situation ." *International Food Policy Research Institute* . N.p., n.d. Web. 30 July 2012. <<http://www.ifpri.org/pressrelease/india-faces-urgent-hunger-situation?print>>.
- "India – Agricultural Economy and Policy Report." *USDA* ., Web. 29 Jul 2012.
<[http://www.fas.usda.gov/country/india/indian agricultural economy and policy paper.pdf](http://www.fas.usda.gov/country/india/indian_agricultural_economy_and_policy_paper.pdf) >.
- "India-Crops ." *Harvest Plus.*, 2009. Web. 29 Jul 2012. <<http://www.harvestplus.org/content/crops>>.
- "India ." *MDG Monitor*. United Nations Development Programme , 2007. Web. 1 Aug 2012.
<http://www.mdgmonitor.org/country_progress.cfm?c=IND&cd=356>.
- Linnekin, Baylen. "India's Misguided Push for Food Security." *reason.com.*,12 Apr 2012. Web. 3 Sep 2012. <<http://reason.com/archives/2012/04/21/will-indias-right-to-food-actually-put-f>>.
- Martin, Catherine . "Lunch in the Park weathers wet start ." *Columbia Daily Tribune* ., 11 Jun 2012. Web. 1 Aug 2012. <<http://www.columbiatribune.com/news/2012/jun/11/lunch-in-the-park-weather-wet-start/>>.
- "Nutrition Quality not Quantity ." *The Economist* . The Economist , 24 Mar 2011. Web. 28 Jul 2012.
<<http://www.economist.com/node/18440801>>.
- "Poverty and food The nutrition puzzle." *The Economist* . The Economist , 18 Feb 2012. Web. 27 Jul 2012. <<http://www.economist.com/node/21547771>>.
- "Progress towards Millennium Development Goal 1: Hunger." *Food and Agriculture Organization of the United Nations* . N.p., 2010. Web. 29 Jul 2012.
<http://www.fao.org/fileadmin/templates/es/Hunger_Portal/MDG_Progress_Map.pdf>.

"South Asia-India: Malnutrition Report ." *The World Bank*. N.p., 2011. Web. 27 Jul 2012.
<<http://go.worldbank.org/TUTLNHSPH0>>.

"UNICEF India-The children-Nutrition." *Unicef* ., Web. 28 Jul 2012.
<http://www.unicef.org/india/children_2356.htm>.

"What Urban Indians are Eating? ." *india facts.in* ., 2012. Web. 28 Jul 2012.
<<http://indiafacts.in/health/what-urban-indians-are-eating/>>.