Aishani Shukla
Waubonsie Valley High School
Aurora, IL
Yemen, Factor 11: Malnutrition

Yemen: Community-centered Education and Resource Distribution to Combat Malnutrition

A country plagued immensely by famine, rampant with horrendous diseases, and ravaged by the ongoing conflict that continues to relentlessly demolish its people and resources, The Republic of Yemen has often been deemed an unfortunate nation already "at the point of no return", and retains its title as one of the Arab World's poorest members. The World Bank approximates that 17 million Yemenis, or a startling 60% of the country's total population, face food shortages as of 2017. This crisis of food insecurity in Yemen remains largely exacerbated by a general lack of education concerning nutritional needs, an absence of sound local infrastructures to deal with destitute conditions, and lack of immediacy in emergency responses to the situation among many other factors. The situation has escalated to the point where "a child dies every 10 minutes.. from preventable causes"(UNICEF), and conditions in the once thriving nation are at the point of a dire humanitarian crisis. Hence, it is imperative that action to combat the acute malnutrition present in Yemen be taken promptly and efficiently before millions more Yemeni men, women, and children succumb to savage poverty and bleak food shortages.

According to the FAO, "agricultural activities are the prime occupations of about half of the population… (and) of the work force of 3,100,000, 58% are involved in agriculture" in Yemen. These statistics point to a nation highly reliant on the generosity of its habitually diminished landscape. The struggles routinely endured by Yemeni Farmers are decidedly due to the fact that Yemen contains only 3% arable land (Safa 1), and cultivation of even this meager landmass is curbed by sparse rainfalls. Significant productivity gains are also difficult to achieve in Yemen. With a land tenure structure chiefly dominated by smaller farms, typical plots of land are a mere 2.47 acres, with farm sizes rarely exceeding 17.35 acres. As in many other compact nations, however, small farm sizes act as valuable assets to typical Yemeni families by creating jobs for numerous members of the family who work the land, as well as providing much needed food and resources for the kin (Caton 127). The land scarcity has prompted Yemenis to look towards cultivation of crops that yield high outputs in scant growing conditions. Most fertile land lies in North Yemen. Quat, a flowering plant utilized as a stimulant, takes up close to 15% of agricultural land and is a dominant Yemeni cash crop grown in nearly all arable regions of Yemen. ("Khat Cultivation Fuels Food Crisis in Yemen"). Other profitable crops include cereals such as sorghum, barley, millet, and wheat. Yemeni farmers primarily utilize traditional terrace farming to optimize available resources. This agricultural practice employs the steep slopes of the nation to assist in irrigation.

Prototypical Yemeni families comprise of roughly 7 members. As is the situation in most third world countries, Yemen entertains a disparate gap amongst men and women; although the majority of men (70%) are literate, only 30% of Yemeni women are able to read (CIA). Culture primarily dictates home life, fostering a value system centered on women getting married early and remaining at home to take care of their children. As a result, many Yemeni women are incapacitated in their abilities to live self-reliantly and fully depend on their husbands for food, healthcare, and educational opportunities for their children.

The ongoing famine in Yemen has unreservedly altered families' mealtime customs. Whereas subsistence farm families habitually indulged in lavish meals such as mandi, a palatable dish made with basmati rice, spices, and meat, and the popular malawah bread, most cannot afford these foods today because of the prevailing food insecurity. Currently, quintessential Yemeni farm families consume cereals like sorghum, barley, and wheat on a daily basis, and can only intermittently introduce meats, vegetables, and dairy into their diets. The poor state of many families is aggravated by a health care system on the brink of collapse and incapable of meeting the needs of Yemenis, especially those in rural areas. Although the Yemeni

constitution guarantees universal health care to its citizens, the government spends only 5.6% of its aggregate budget on health, and 95.2% of healthcare money comes from the pockets of Yemenis themselves.

Obtaining sufficient food and water supplies and becoming self-reliant are goals persistently impeded for Yemenis by barricades such as a dearth of water, lack of knowledge concerning agricultural practices, government corruption, and the current conflict in numerous regions of Yemen.

Yemen's location on a semi-arid and dry section of the Arabian Peninsula means that the nation does not contain any rivers, and must trust in rainfall and groundwater to meet the needs of the people. In fact, Yemen's population lives on only 88 cubic meters of water per person per year ("Yemen's Looming Water Crisis"). Groundwater resources are only recharged sporadically by wadis, which largely remain dry with exception to bouts of high and heavy rainfall. Salt water intrusion also exploits many aquifers in Yemen. This water scarcity leads to grueling conditions for Yemeni farmers; they struggle to implement agricultural techniques on already barren land plots, and as a result, are incapable of enhancing paltry crop yields. Moreover, most farmers are uninformed on the virtues of sustainable farming and harness resources wastefully. As the Foreign Affairs Magazine noted, numerous farmers are devoted to traditional practices like flood irrigation, which relies on the uncontrolled distribution of water over soil, and refuse to switch to more efficient techniques. When asked about his thoughts on drip irrigation, a Yemeni farmer declared that 'flood irrigation is more honorable' than its counterpart despite the fact that drip irrigation is 35% more productive. The cultivation of quat has also displaced thousands of hectares of vital crops like vegetables, coffee, and fruits, and accounts for 40% of water drawn from the Sanaa basin.

The Yemen Civil War commenced in 2015, when a drastic rise in political instability led to a brutal conflict between supporters of the Yemeni Government and those of the Houthi Rebels. Since then, escalations in the situation have led to mass civilian casualties and displacement of locals in both rural and urban areas. The war has acted as a singularly destructive force in the nation. Major cities such as Taiz, Sana'a, and Aden continue to see worsening conditions under control by the Houthi-Saleh faction; air strikes and bombs demolish local infrastructure and transportation mechanisms such as roadways and bridges. This, in turn, slows transportation of food and water and blocks Yemenis residing in these areas from accessing imperatively needed supplies. Likewise, jihadi groups are prone to controlling access to resources in areas where they have authority by setting up harsh checkpoints and charging traffic, preventing citizens from acquiring enough grain and water.

Work in Yemen centers around traditional skills such as agriculture, fishing, and herding, and around 71% of occupations in the country relate to these expertise. However, the income of most rural households stems from the labor of urban Yemeni men, as rural farmers are increasingly becoming unable to grow crops in deteriorating conditions; occasional heavy flash flooding but an otherwise constant drought have ensured a poor environment for crop cultivation. Hence, Yemenis living in small villages are forced to pay high prices for the importation of food staples like wheat and rice to the remote locations where they reside. Yemenis also face sizable disadvantages in the realm of education, especially those living in smaller, isolated areas. It is tougher for children living in faraway rural villages to gain access to a proper education, and most young people leaving their rural hometowns for jobs in larger cities are not equipped with the knowledge necessary for a job. Yet another barrier standing in the way of steady jobs and income for the working class in Yemen is government corruption. Patronage networks and corruption became popular under the former Yemeni regime, and these behaviors still run rampant today in both the public and private sector. Corrupt blocks of power have jurisdiction over resources due to a weak government, which has inevitably caused the decline and even termination of essential sectors containing many health and education jobs ("Fighting the Culture of Corruption in Yemen").

UNICEF estimates that over 400,000 children are at risk of starvation in Yemen, in what is now an all-time high of severe acute malnourishment. Markedly underfed areas of the nation, like Sa'ada, have a stunting rate of 80% amongst children due to poor nutritional habits which have had heavy and hard hitting consequences. Malnutrition both physically and mentally affects those who consistently are deficient in protein, carbohydrates, vitamins, and minerals. In addition, studies have linked chronic malnourishment to immensely lowered productivity. Strauss and Thomas strongly contend that there is a direct correlation between body mass index (BMI) and productivity, and explain that maximum working ability increases when one's BMI, a measure of energy intake, also rises; an elevated BMI essentially indicates greater physical strength, which is highly functional in tasks of manual labor frequently necessary in agricultural work. The World Bank reinforces that the physical productivity of both children and adults significantly decreases as their BMI drops below 18.5. The implications of these statistics are daunting in a viciously malnourished nation like Yemen, where physical work and arduous labor is the daily way of life yet 40% of Yemeni children under the age of 5 are underweight and at risk of stunting. Additional studies by the World Bank reveal that a mere 1% loss of adult height as a result of childhood stunting is associated with a 1.4% loss in productivity. Typical poverty-stricken rural Yemeni families have average monthly salaries of only $200, which is not ample to buy even the most paramount food staples, like bread and grain. A meager food intake combined with long hours of physical labor for these rural farm families is inescapably tied to malnutrition, which then provokes productivity losses because of their poor physical condition. This unforgiving cycle of poverty and malnutrition endlessly repeats and has conspicuously worsened over the past few years. Whereas 2003 saw a food insecurity rate of only 22% in Yemen, this number has inflated over the years to reach a record high of 51% in 2016. The crisis has had particularly deleterious effects on young children, who need proper amounts of nutrients to fully grow and develop, and pregnant women, who have greater chances of maternal morbidity or poor pregnancy outcomes without a sufficient diet. Yemen's deeply patriarchal society also puts women at a disadvantage when it comes to gaining access to food by dictating imposing rules on their behavior and actions. Females eat last and least when food in the household is scarce, and are generally forbidden from exiting their houses without the permission of their husbands; the result is a sizable gap between food quality consumed by men and women. While men have a greater amount of mobility and can choose to eat at local restaurants or shops, women are confined to their houses and compelled to eat whatever leftovers their husbands bring home. In exceedingly poor households, it is not uncommon for young girls to be sold in exchange for food and water. Combating the issue of malnutrition in Yemen would not only relieve the burdens of the rural poor and women disproportionately affected by it, but also boost the weak Yemeni economy and improve the status of the nation. "Good nutrition is a basic building block of human capital, and as such, contributes to economic development" (World Bank). Indeed, malnourished children put larger strains on government healthcare and education budgets by requiring higher volumes of health services, care, and schooling. Investing in the nutritional needs of Yemenis also has the potential to reduce mortality rates and yield intergenerational benefits, since there are diminished prospects of well-fed females giving birth to nutrient deficient infants.

A nation with a rapidly expanding population, Yemen faces the noteworthy challenge of feeding over 27 million citizens with its limited resources. Given that over 50% of the country consists of children under 18, the United Nations expects the population to nearly double by 2050. Despite the volatile conflict it is currently in, influxes of refugees and migrants from bordering countries such as Ethiopia and Somalia have continued to arrive to Yemen. Although most of these immigrants have the desire to move through the country to reach Saudi Arabia, those who do not succeed add to its growing population. As Yemen begins to sustain more and more people, producing enough crops for its citizens will become increasingly burdensome. With already limited stocks of groundwater and arable land, its resources will be put under immense strain, and malnutrition within the country will certainly elevate due to lack of food. Water scarcity is yet another factor envisioned as a catalyst for malnutrition rates in Yemen; 50% of the population struggles to find clean water for drinking or agriculture. Drought kills off many off the crops that could otherwise provide nourishment for starving citizens. Muhammad Hamoud Amer, a farmer who

lost most of his peach trees to the severe drought, laments that “every year we have to drill deeper and deeper to get water.” Thousands of Yemenis similar to Amer suffer at the hands of water scarcity, which directly impacts agricultural yields and threatens their livelihoods.

Combating malnutrition in Yemen requires a comprehensive solution which takes many factors into account. Nutrition education, especially to pregnant mothers and children, is crucial. However, it is even more critical that humanitarian access be enhanced throughout the country so that citizens in poor rural areas can have access to food and treatment programs. Utilizing Ready-To-Use Therapeutic Foods to feed Yemenis can be highly beneficial in this regard because of their nutrient rich natures, and micronutrient supplementation is essential in proper child development.

A variety of projects in the past few decades have attempted to battle malnutrition in Yemen. For example, the *Emergency Food Assistance to the Food Insecure and Conflict Affected People* project funded by the World Food Program in 2015 sought to eradicate malnutrition through means such as emergency therapeutic feedings at urban schools and food voucher programs. While these ideas were sound in theory, they did not specifically target those disproportionately affected by malnutrition: the rural poor. Governorates akin to Abyan and Amran are the most at risk of severe acute malnutrition but are located in remote areas and hard to reach with emergency supplies and health services. The Health and Population Project in Yemen is an ongoing project that has the capacity to improve both nutrition education and delivery of vitamin and mineral dense foods in these regions. By working in accordance with public health staff like doctors and nurses, the plan ensures that Yemeni citizens who need to be hospitalized for severe acute malnutrition can be cared for through outreach and mobile teams. In rural areas that are difficult to access, the project utilizes Community Based Organizations, which are teams of locally centered helpers that aid in providing needed health services to other community members. This approach has proven to be extremely effective in inaccessible regions of a nation. Additional measures include working with local suppliers and vendors to guarantee steady inflows of food packages in all areas where the plan is being implemented. Therapeutic foods such as the Plumpy’nut, which is fortified with protein, carbohydrates, fats, and minerals, could ease malnutrition greatly in rural areas with low food yields. This project contributes to sustainability in a variety of ways. By working with and investing in local nutrition service delivery systems and health structures, national implementation capacity is strengthened and preserved. The enhancement of local infrastructure is another key benefit of the project at hand. Evidence has shown that community based workers are able to provide nutritional education and intervention even after project funding terminates. An example of nutritional education to be carried out includes increasing awareness amongst school aged children and their families on the importance of steady dietary intakes through weekly campaigns, community centric activities, and integration of information into the school curriculum of the children. Creating awareness amongst pregnant and lactating women about the necessity of a healthy diet before giving birth and daily breastfeeding once their child is born will also curb the number of children with low birth rates and nutrient deficiencies. Through nutrition counseling at local facilities and the reinforcement of a national awareness campaign, this goal is achievable. WHO and UNICEF serve as key players in the plan, and both call upon their respective networks of contractors, providers, and international/local nongovernmental organizations to deliver essential nutritional and health services. These two organizations must regularly visit sites to monitor progress and consolidate data. NGOs must also serve a key role by setting up mobile teams to work with the nutritional needs of Yemenis. The project is funded by the World Bank, which also has the responsibility of making progress checks on its provisions. Although the national Yemeni government has limited funding capacities, the plan will only work if the government attempts to maintain public services and pay outstanding salaries to its workforce of public officials. It is the job of families in the areas where this plan is implemented to commit to learning more about dietary needs and proper nutrition in their local communities by attending the seminars and classes being taught.

Combating the crisis in Yemen and transforming a war torn, malnourished nation into a healthy and happy one will be a challenge. Ranked as the 11th most food insecure country in the world, drastic measures will need to be taken to combat the worsening conditions of Yemenis, especially in poverty-stricken rural areas. Engaging in a variety of activities such as providing nutritional information to women and children, forming local teams to meet the needs of communities, and sending much needed therapeutic supplies of food to Yemen will certainly aid in not only the advancement of the country, but also of its people.

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