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Yemen, Factor 11: Malnutrition

Yemen: Country in Ruins

The Republic of Yemen is an Arab country in Western Asia with an estimated population of 27,392,779. The climate in Yemen is typically hot and humid near the west coast, temperate in the western mountains due to seasonal monsoons, and extremely hot and dry in the desert to the north. The terrain of the country is made up of narrow coastal plains backed by flat-topped hills and rugged mountains alongside some deserts (Central Intelligence Agency 2017). Yemen is said to be one of the poorest countries on the Arabian Peninsula, and is close to achieving the world's highest malnutrition rate in children, not to mention having the biggest outbreak of cholera on record ever according to the World Health Organization. The country is currently undergoing a civil war between the Houthi-Saleh movement and the Yemeni government due to the political transition that was supposed to bring about stability. Tensions in Yemen have resulted in loss of quality in the well-being and daily lives of its inhabitants as conflicts break out throughout the country between the two parties.

Yemeni Living

The people of Yemen are having difficulties with maintaining a stable means of living ever since the unification of the country in 1990. The Yemeni people generally live in small villages and towns where the average household typically consists of an extended family. Traditional agricultural practices are difficult due to soil loss from erosion, low rainfall, and the narcotic khat which sucks soil dry of valuable nutrients and water. Khat is often chewed by men as a kind of social practice, but rapidly deprives soil of nutrients, making the soil unusable for food crops (Butters 2009). Bags of khat are sold for five dollars a bag, which are consumed by the everyday man as a euphoriant, making it an expensive habit to have. Not only is khat used to elevate the mood of its users, but also is used to lower the need for food and sleep (WebMD). Khat isn't commonly exported since it's easily perishable but is grown in large quantities which limits space for other crops. The average Yemeni will eat barley, wheat, corn, bananas, mangoes, papayas, lamb, and chicken traditionally with Yemeni flat bread as a balanced meal (Wenner & Burrowes 2016). Chicken, goat, and lamb are typically eaten more since the price of beef is higher. Additionally, fish are eaten as a part of their diet, but dairy products like cheese, butter and yogurt aren't as common. Nonetheless, buttermilk is enjoyed almost daily in villages where it's available (Etheredge 2011). Today, there are about 1.6 million children that have yet to obtain access receiving to an education, despite a reported 17% increase in school enrollment from 2004 to 2013 (UNICEF 2016). Hundreds of schools have been repurposed as shelters or for military purposes, and many have closed.

Agriculture and Topography

The total area of arable land is only 1,142,000 hectares which translates to 2,821,943.456 acres (About 4409 sq. miles). 53% of that arable land is rainfed while the other 47% is irrigated to grow crops like sorghum, maize, millet, wheat, and barley (Alabsi 2001). Other crops produced include coffee, sesame, cotton, tobacco, and khat. Livestock raised as a part of farming practices include sheep, goats, cattle, and camels which are fed fodder created from sorghum, naturally occurring grasses, and lucerne (aka alfalfa). Camels are kept in the coastal and desert areas where they rely on salty and thorny trees and shrubs as

their feed; Donkeys on the other hand are kept in rural areas where they roam free to graze and are used for transportation of commodities like water, crops, and fuel (Alabsi 2001).

The topography of the area ranges from coastal plains to more mountainous regions. Soils in the coastal plains are comprised of alluvium fans (which are loamy, meaning that they have a relatively equal amount of sand, clay, and silt mixed together, making it good land for agricultural use) and coarse inter-wadis (areas that are typically dry except for during rainy seasons which make the soil fertile). Western slopes have bare rocks and very shallow soil near the mountain's peak. The lower slopes have various loams where agricultural practices would be ideal. The highlands have similar conditions to the lower slopes of mountainous areas in that they have loamy areas except are more leveled and contain more clay. The lands that are irrigated use mechanized pumping of groundwater. Water is available through springs, shallow wells, deep boreholes, and from traditional cisterns used to collect water.

Set-backs

Healthcare in the country is what many would call a disaster with healthcare workers struggling to provide basic services. Heavy bombardments and airstrikes combined with constant fighting throughout the country limits a citizen's ability to receive proper medical assistance and places a heavy strain on any medical facilities still functioning. People who can't seek proper immediate attention or don't have the funds to do this are usually malnourished. The overall population of Yemen is 27.4 million people and 60% of the population (17 million people) is food insecure (World Food Programme 2017). Approximately 3.3 million children and pregnant or nursing women are severely malnourished (World Food Programme 2017).

With constant conflicts occurring in Yemen, there has been a decline in oil and natural gas exports which contributed towards 45% of the government's revenue in 2014, causing raised food prices and reduced incomes. Abdrabbuh Mansur Hadi is the current president of Yemen ever since Ali Abdullah Saleh, the previous president, was forced to hand his position over to Hadi in 2011 due to protests (BBC 2017). The Houthi-Saleh movement took advantage of Hadi coming into office, taking control of the northern heartland of the Saada province and neighboring areas. Hadi used 4 billion dollars on the war effort in the central banks that would have otherwise been used to fund medical care and food (Thomson Reuters 2016). Fighting that can break out anywhere prevents deliveries that would be made to medical personnel and hinders their ability to perform their daily activities.

War crimes committed by the Houthi-Saleh forces include the use of banned antipersonnel mines and even some antivehicle mines in Yemen. These mines have caused countless civilian casualties and threaten the safety of Yemeni citizens displaced by the fighting (HRW 2017). According to Steve Goose, director of the Arms Division at Human Rights Watch, the "Houthi-Saleh forces have been flouting the landmine ban at the expense of Yemeni civilians." The country of Yemen had prohibited the use of antipersonnel mines almost two decades ago. Even though no real casualty count has been made available, the National Organization for Defending Rights and Freedoms has documented cases in which over eighty people were killed with 136 wounded or maimed in Marib and al-Jawf governorates (HRW 2017). The Houthi-Saleh forces aren't the only party to use landmines in Yemen, the Al-Qaeda in the Arabian Peninsula have been said to use such landmines.

Famine and Disease

Malnutrition in the country will worsen if conflict there continues. People unable to have access to a clean water supply and food will die of starvation or from contracting a communicable disease like cholera, trachoma, and typhoid fever. Cholera is a diarrheal disease that causes violent diarrhea, vomiting, and dehydration so intensive that it can send a person into shock and can kill a person within hours if left untreated. Severe cases can cause more fluids to be lost, leading to a spread of bacteria (Shaikh-Lesko

2017). People are unable to receive medical care due to heavy strains on facilities or lack of money to pay for their services. Such diseases are treatable through rehydration, IV fluids, and antibiotics. Less than half of the country's medical facilities are functioning, leading to them being forced to use tents in hopes of meeting the increasing demand of medical services. The hospitals are packed to the point where people are sitting in the corridors and medical professionals having some beds with two sick kids in them (Khairat 2017). Medicine at hospitals are expensive because nutritional supplements and medicine for diseases are acquired from other countries due to a scarcity. The International Committee of the Red Cross (ICRC) has come out with a warning that by the end of 2017 that more than 600,000 Yemeni could have cholera (Khairat 2017). The ICRC has concluded that the cholera pandemic ravaging the country is man-made since it was a byproduct of political issues. Nearly 1,400 people have died from cholera as of late April (Shaikh-Lesko 2017) and about 10,000 people have died since the Houthi rebels have taken over Sana'a, the capital of Yemen in 2014. The World Health Organization suspects that 5,000 new cholera cases will be registered in Yemen as the rainy season starts and is said to have the potential to increase the transmission of diseases (Jazeera 2017).

Current Water Situation

Thousands have contracted acute diarrhea/cholera due to consumption of contaminated foods or water. Water has been contaminated due to poor sanitation, lack of sewage treatment plans, the over-use of pesticides and fertilizer, along with the discharges from factories which are to blame. Leaks from piping from households' toiletry enter the water supply, causing it to be contaminated (IRIN 2016). The streets in cities have trash lying about because of poor sanitation caused by sanitation workers who have been unpaid for months on end. The buildup of trash infiltrates the water supply when rain occurs and residue from the garbage becomes soaked into the ground. Another factor affecting the water supply would be excretions due to a lack of plumbing for about a quarter of the population which was even before the start of the war (Shaikh-Lesko 2017). Waterborne diseases will continue to plague the country of Yemen if nothing is done to counteract these issues. The Red Cross was said to be sending the "largest ever global delivery of the cholera vaccine to Yemen" but later cancels the shipment because of their fears. The Red Cross believed that the delivery would fail to help contain the outbreak of cholera and would result in discouraging any further campaign to help the war-ridden country (Devex 2017).

Solutions to Issues

Improving the availability of clean food and water would prove to be a huge step towards a clean and healthier country. There would be a lower mortality rate since 7 to 10 million people are in desperate need of help from others to provide them the essentials (FEWS NET 2017). The main concern would most likely be securing a way for supplies to reach the local communities, and the method would be by protecting the ability of private traders to import foods. The worse scenario would be that the traders are unable to receive their payment, causing food availability to go on the decline, leading to potentially a higher mortality rate because supplies can't get to the people. Treatment needs to be provided to people as fast as possible to lower the spread of cholera. The ability to transport necessities like food and medicine is dependent on the matter of whether it can be brought in safely without becoming caught in the ongoing conflict.

Cheikh Ahmed, a diplomat and politician who is currently serving as a United States Special Envoy, intends on inviting the two parties in Yemen to restart discussions as soon as possible. Ahmed's proposal involves the continuation of the flow of commercial and humanitarian supplies through the Red Sea port where fear of conflict exists and thus ending the diversion of customs revenue and taxes. The funds retrieved could be used to pay government workers that haven't been paid in month and that would bring important government services back (Jazeera 2017) like sanitation services for example. To bring aid to the people of Yemen, access to the country itself needs to be established and then humanitarian support can be provided to ease the pain of the people of Yemen.

The World Food Programme is an organization that has partners and donors who work to bring food to malnourished people globally. In Yemen, the organization distributes food to the people monthly and has provided help to over 6 million people in 2015 and plan to help 7 million in 2017. If the organization and its partners can get more funding for their programs, more food can be brought to the Yemeni people. A great way to appeal to others if not by the goodness in their hearts, would be to say that Yemen sits on the Bab al-Mandab strait, a narrow waterway linking the Red Sea with the Gulf of Aden, a waterway that many of the world's oil shipments pass through (BBC 2017). Countries would feel more inclined to help if the economical aspect of the issue is appealed to them. Water organization like Generosity.org, Pure Water for the World, and Water for Good can be contacted to form a partnership of some sort to work towards the same cause. Clean water could be brought to Yemen through the water organizations for the people's wellbeing and for farming.

Other Methods

An alternative method to solving malnutrition in Yemen would be to bring farming techniques and equipment to Yemen instead of simply giving them food to live on. The emphasis on the concepts of raising small mammals, like chickens and goats along with the introduction of aquaponics would be beneficial for the Yemeni people to learn about since they don't require large resource allocation. Aquaponics is where fish and plants are grown together in a symbiotic relationship with microbes; waste from fish is used as a fertilizer for the plants while the plants act as a natural filter for the water the fish to live in (The Aquaponic Source). The amount of water needed for farming is a tenth compared to traditional farming. Aquaponics can produce quality greens and protein in a sustainable fashion.

Poultry farming can also be a sustainable business for the Yemeni people. Chicken incubation can be done by having chickens and setting up incubators and brooders. Chickens produce, on average, an egg every other day. Eggs collected can be placed into an incubator where the embryo will form over time and eventually hatch in three weeks (Barth 2016). The ideas may be costly to start but will be helpful to the people in overall, for the products created can be sold. Raising more goats can be profitable also considering on how they can be raised for both milk and meat. The country itself already has agriculture as a large sector, but farming practices can be improved through implication of new ideas. The communities can be persuaded to start many small-scale clean-up projects that can evolve to larger projects and then small wells can be built in areas where contamination isn't as prevalent. With the clean water, it can be used for drinking and agricultural purpose which is the whole point of the entire ordeal.

Overall Summary

Families in Yemen are usually unemployed and struggling to feed their families or possibly have fallen ill to a water-borne disease. While providing food satisfies an immediate need, teaching, and providing for small scale sustainable practices could bolster self-reliance and stimulate local economy much like agriculture has done on a global level. A business revolving around the maintenance and production of food can be established. A small-scale project can be just getting people to start putting farming practices into actions. Over time as people become accustomed to the newer way of farming, it can be used as a means of income that can be used for other projects. Having clean-up projects could help against water contamination which would help fight against the pandemic of cholera and open new options towards helping the country in overall. After dealing with the issue of water contamination, medicine can be brought into the country and have a real effect on the people. The country itself is facing many political disputes, which limits number of actions that can be taken to counteract malnutrition in the country. However, it is possible that if smaller local economies grow stronger, that issues of unrest among the people will stabilize with a focus on sustainable agriculture.

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