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### **Water Scarcity and its Role in Food Security in Countries in Southwest Asia**

Southwest Asia--Bahrain, Cyprus, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, Turkey, United Arab Emirates, and Yemen-- has become synonymous with violence of all types in news headlines around the world. Political strife and disputes among various religious sects seem at the first glance to be the most pressing problems in that area of the world. They are not. Something more dangerous is hidden beneath the surface. When one looks out into the desert, looking for the answer, all he or she sees is the mirage of political strife and religious persecution. One is too occupied with this ever-present problem to notice the source of those effects. The climate present in Southwest Asia occurs in other places around the world, but the unique combination of a few key factors in that region is causing many problems not seen in other parts of the world. Few take the time to notice the extreme climate in Southwest Asia. Deserts, with little or no rainfall, cause extreme living conditions. The scarcity of water that is characteristic of the entire region of Southwestern Asia affects the production of crops, which ultimately leads to decreased food security and a heightened state of malnutrition in Southwest Asia, and even the political problems mentioned before.

The hypothetical Southwestern Asian family consists of Mohammed, the husband, and his wife Faria. They and their four or five children live in a rural community out in the arid desert, a climate that receives little or no rainfall annually. Because they live too far away from any industrialized center, their children attend the small community school. In the past few years, education in Southwest Asia has improved drastically. According to UNICEF (United Nations Children's Fund), eighty-five percent of all primary-school-aged children in Southwest Asia and North Africa attend school. This number however drops to just fifty-eight percent of all secondary-aged children. This staggering decrease can in part be attributed to the responsibilities older children have around the house, such as helping to maintain the crops, which is the family's only means of survival ("Education"). In order feed his family while making a profit, Mohammed grows mostly corn, wheat, millet, and barely using traditional farming techniques handed down from generation to generation.

Many farming families like the one mentioned above have been forced to adapt to living and surviving in the extreme conditions with which they have been presented. Only seven percent of land in Southwest Asia is even arable due to the harsh, desert-like climate found throughout Southwest Asia (World). Only a small portion of these countries even receives more than a few inches of rainfall every year. The limited amount of land and rainfall necessitate the use of irrigation techniques in order to be able to grow crops. Farmers in less developed nations, such as those found in Southwest Asia, still use what is known as the "flooding" technique to irrigate crops. Flooding is a method that pumps a large amount of water to the crops and then allows that water to flow freely among the crops. This procedure however is relatively ineffective in watering the crops because the water is not contained to just the area being farmed. The water is able to seep elsewhere, wasting huge quantities of an extremely scarce resource. Sadly, farmers in Southwest Asia are unable to utilize a more efficient method because they do not have the information or technology required to implement other more useful techniques.

Poor water irrigation techniques are combined with the prolific use of groundwater. Instead of relying on the scarce and sporadic rainfall indicative of Southwest Asia, agricultural communities have been content to depend on a more reliable means of supporting their crops. They dig deep wells into the earth and rob the soil of the little water that it does hold. This new trend has a disastrous effect on the environment. This disruption leads to even more drought in these regions, exacerbating the problem. In Yemen, for example, severe droughts have resulted in an increased reliance on groundwater. The problem

is so unchecked that the country currently uses one billion more liters of water than it naturally replenishes each year (“Alarm”). It is estimated that eighty percent, or seventeen of Yemen’s twenty-one million people, are affected by the shortages of water. Water scarcity and the stress it is causing is becoming a huge problem not just in one isolated case, but in an entire region of the world.

As a result of the continuing aggravation of agricultural factors in Southwest Asia, crop numbers are nowhere near their maximum yield potential. Unsuitable land, poor irrigation techniques, and a growing reliance on groundwater instead of rainfall, have put a massive strain on the food supply of these countries. The amount produced in each country every year is not nearly enough to feed the population. Officials in Southwest Asia believe they have remedied this problem by simply importing a huge percentage of their food supply from other countries. A staggering seventy-five percent of Yemen’s food needs are obtained through the importation of supplies from other countries (“Soaring”). This astounding number not only highlights the inability of countries in Southwest Asia to be self-sufficient, but the reliance and unwavering faith that these countries place upon their trading partners. Officials in these countries have made their people extremely susceptible to the whims of other nations by trusting an integral part of their survival to countries that could potentially be hostile to them. With the shift in international politics that is currently occurring, the governments of these countries should be concerned about how to make their countries self-sufficient because of the stoppage of food imports could have a disastrous effect on the unprepared. In the world today, the issue of food is no longer just a business deal, but a geopolitical issue. This fact must also be taken into consideration when attempting to find a swift and lasting solution to the problem of water scarcity in Southwest Asia.

The potentially adverse effects of a climate problem seem to be never-ending. Not only does th water scarcity in Southwest Asia cause reliance on other countries for food, but the importation of that food, through transportation fees and taxes, has greatly increased the price people must pay to eat. As a result, it is estimated that six percent of the population has recently, within the last few months, fallen below the poverty line, all due to their inability to afford the food and water essential to their survival (“Soaring”). This inability to obtain these basic requirements of life will only continue to spread to more and more people living in Southwest Asia, until the problem reaches the size of an epidemic. While the future looks grim, the present is still worrisome. In Yemen, 15.7 percent of the population lives on less than one dollar a day, while almost half, 45.2 percent, live on less than two dollars a day (“Soaring”). This shocking statistic highlights the extreme poverty present in this area of the world. Unlike in industrialized countries, such as the United States, where poverty boundaries are relatively the same and the number of people in poverty is such a small percentage of the population, these numbers are huge. When so much of the population is in poverty, it makes it even more difficult for that percentage to decrease because when everyone suffers, no one is able to receive federal aid. The misunderstanding of the real problem only aggravates the problem and directs effort to remedy the situation in the wrong direction. This misplaced sense of fixing the problem is due to the many people that believe that the simple solution is to import more food from other countries. The availability of the food is not the issue at hand. Rather, the problem arises because a large number of people do not have access to the food; they do not have the money to be able to purchase food because the agricultural that they rely on does not allow them to profit. Through their old irrigation methods, they can barely afford to grow enough food to provide for themselves. The inability to afford food is aggravated by the huge disparity between those classified as in poverty, and those that can afford the high food prices with little or no thought about how it will affect their earnings. The non-existence of a middle class in Southwest Asia makes it impossible for people to be able to pull themselves out of poverty and into a comfortable life.

In addition to the extreme number of people existing in poverty, according to the CIA World Factbook, approximately 12.3 percent of people in Southwest Asia are also unemployed. It is important to keep in mind that this number was obtained using the most conservative estimates on the issue, often the official statistics reported by the governments of these countries (World). In most cases, these statistics do not reflect reality. Some non-profit institutions have estimated unemployment in Southwest Asia to be as

high as thirty percent, if not higher. With this in mind, it can be safely surmised that those who have a job that pays even relatively well, does not have any problem maintaining at least a sustainable lifestyle. However, everyone without work is automatically issued a sentence of poverty, and with it the likelihood of hunger and malnutrition. Creating more opportunities to work would be a viable short term solution to the problems that Southwest Asia is facing. However, no jobs are being created to deal with the large number of those who are not being paid. Normally, a country would create jobs in its strongest sector, but most countries in Southwest Asia rely on agriculture and are therefore unable, due to water scarcity and an inability to cultivate more land, to produce new jobs. With the population skyrocketing and the number of jobs plummeting, the situation in the Southwest Asia is dire. But what looks so unpromising is the fact that these problems seem to continue on in a circle. No one direct cause exists. Therefore, the situation can not be remedied by the implementation of a solution to just one of the problems in the circle. This knowledge makes it extremely difficult to be able to alter the spiral that is slowly but surely progressing downward.

While the reality of the situation is currently extremely grim, experts predict more of the same in the years to come. They predict that the negative statistics associated with the problem-malnutrition, the unemployment rate, the percentage of people in poverty-will all continue to show rapid decline in that they will grow astronomically. This is due to the fact that the Southwest Asia, quite unlike any other region in the world, is experiencing a huge population boom due to the increase of technology and industry in their countries in the past few decades. While Europe actually show a shrinking of the population, and most other areas are not growing more than one percent annually, the region boasts an average three percent growth rate, which is higher than any other area in the world, even though a few isolated countries, like Burundi in Central Africa, show the same amount of population growth (World).

No understatement is being made when it is said that the situation in these countries is a dire one that needs to be addressed as soon as possible in order to avert what seems like the only possibility now, the possibility of a mass descent into poverty and unsustainable living conditions that will slowly lead people of this region to die. Not much will be able to be done if and when this region reaches that point of utter instability because other countries lack the resources and sometimes, the motivation, to induce change, especially during an emergency situation that would require immediate response of a mass amount of food, enough to feed the millions residing in the region.

Therefore, something must be done now in order to prevent that situation from ever happening. A possible solution would be the increased productivity of small-scale subsistence family farmers. This would benefit the region in two distinct ways. An increase in food grown in the country itself would first of all decrease dependence on foreign food. This idea has all sorts of implications attached to it, including more money for the government to spend on other initiatives, such as unemployment aid. Other effects of this would be a drastic lowering in food prices because of the disappearance of import and export taxes. At the same time, as long as food prices are kept at a reasonable level, farmers producing a fair amount of crops would see a dramatic increase in their income, leading to better lifestyles. In addition, because the increased productivity of small subsistence farmers would have to be accomplished mostly through the mass implementation of more advanced watering and irrigation techniques, and perhaps the widespread use of pesticides, food security would greatly increase within Southwest Asia. This solution combats the unemployment issue because saving water would theoretically allow more land to be available for farming, which will in turn increase the demand for farmers and create new jobs. In addition, poverty would be reduced not only by the lowering of food prices, but also by the increase in wages being received by a lot of these families. All in all, better quality of food will be available for less, leading to an improvement in the quality of life for millions of people.

But in order for these lofty goals to even come close to being accomplished, a plan will have to be created in order to maximize the water resources available in Southwest Asia. This will have to be

accomplished through the widespread implementation of new technology. The first problem that will be encountered is the money issue. While most of these countries are oil-rich and therefore have substantial gross domestic products, most of the money will have to either be donated or raised. However, the money issue is not the issue that is most concerning in bringing about those resolution. As stated previously, water is extremely scarce in the region, with the Jordan River and its tributaries almost exclusively supplying water to five countries in the surrounding area- Lebanon, Syria, Jordan, Israel, and Palestine (Milstein 1). This leads to competition amongst the countries for the right to that valuable water. Therefore, organizations such as the United Nations, specifically its subsidiary FAO (Food and Agricultural Organization), and UNICEF need to collaborate and organize conferences between the countries in Southwest Asia so that they may come to an agreement regarding the water situation. The involvement of a large, peace-keeping organization such as the UN is vital to the success of this initiative, particularly because of the conflicts that have occurred over the water in the past, especially between Palestine and Israel.

When people look at the region they refer to as the “Middle East”, all most of them can see is the mirage that they are presented with-- the political strife, revolution, upheaval, and a series of religious wars that has dragged on for a few decades. They do not see the women and children suffering from malnutrition, the poor being misrepresented or even unrepresented by the countries’ government. They never notice how bare the land is and how few crops really are able to grow. They see none of this. But attention must be drawn to the crisis in Southwest Asia. Even though it is much more gradual than the events happening in Darfur, for example, this region of the world cannot be ignored. A compromise must be made between feuding countries in Southwest Asia and outside aid in terms of money and knowledge on how to build more efficient irrigation system must be provided. And these things must occur rather soon. Otherwise, not only will food security and malnutrition continue to deteriorate in Southwest Asia, but as World Bank Vice Ismail Serageldin observes: “many of the wars of this[twentieth] century were about oil, but the wars of the next century will be about water” (Smith).

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