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Algeria, Factor 7: Animal Health/Farm Family

Algeria: Increase availability of vaccinations for livestock

Algeria is a country in the Northwestern region of Africa bordered by the Mediterranean Sea and the Sahara Desert. One can imagine that Algeria's soil lacks fertility because it borders the hottest desert in the world and a body of salt water. In spite of this, the Algerians have made it work and learned to live off the land raising livestock and crops. Instead of having everything handed to them, the Algerians worked hard for what they have. America has a significantly higher amount of farmland than Algeria. This allows for death in crops or herds without complicating the lives of the farmers in the United States. Algeria, however, does not have this luxury. The maintenance of animal and plant health is necessary for farmers in Algeria. Therefore, the availability of vaccinations for animals is crucial to maintain the lives of Algerian farmers. If other countries would ship vaccinations to Algeria, animal health would increase and the lives of Algerians would improve. Algeria's national government could make treaties with other countries to make a trade of Algerian products for livestock vaccinations to care for the health of animals and, in the long run, people.

Algeria belonged to the French for many years. In 1945, Algeria moved to gain its independence (Stanford). The Algerian War for independence broke out in 1957 when the National Liberation Army (ALN), the military arm of the National Liberation Front (FLN), staged guerrilla attacks on the French military and communication posts and called all Muslims to join their struggle (Stanford). For four years, the French sent almost half a million troops to Algeria to bomb villages and torture prisoners (Stanford). In 1959, Charles De Gaulle (French President) issued a promise of independence to the colony, but the following year continued to send troops to restore order (Stanford). The fight continued until Algeria won its independence in 1962 (Stanford). This is why the government has strict regulations on imports, in an effort to try and make the country more self sufficient (Stanford). Algeria's main exports are petroleum gas, crude petroleum, refined petroleum, coal tar oil, and ammonia (Algeria (DZA)). Algeria's main imports are cars, wheat, refined petroleum, delivery trucks, and packaged medicaments (Algeria (DZA)). Unfortunately, Algeria has to import 75 percent of its food needs (Algeria-Agriculture). Currently, Algeria is the fifth-largest reserves of natural gas, second-largest exporter of natural gas, and the 14th-largest reserves of oil (Stanford). The largest industry in Algeria is the production and processing of oil and gas, followed by services such as trade, transport, communications, manufacturing, mining, construction, and agriculture (Stanford). The agriculture industry only makes up six percent of the economy because only 22 percent of the population are farmers (Stanford). However, the agriculture industry is struggling due to droughts, poor irrigation, and lack of machinery, as well as government policies that favor industry over farming (Stanford).

Algerian education is similar to American education. Algerian students go through a 12 year schooling program (nine years primary schooling and three years secondary schooling) starting in September and ending in June (Thomas). Like America, Algeria has pre-primary schooling, which would be like pre-school for American students; primary schooling, which would be like elementary school through high school; and secondary schooling, which would be like college for Americans (Thomas). On average, 4.2 percent of Algerian children attend pre-primary schooling (Thomas). About 95 percent of all Algerian children enroll in primary schooling (96 percent males and 94 percent females); and 67 percent of students enroll in secondary schooling (65 percent males and 69 percent females) (Thomas). Like in America, not all students who finish primary schooling continue on to secondary schooling. Only about 79 percent of students who finish primary schooling continue on to secondary schooling (Thomas). In contrast to American public schools, Algerian public schools are regulated by the Ministry of Education

and the Ministry of Religious Affairs, which is why the study of Islam is required in the schools of Algeria (Thomas).

Algerian diet depends on which region of Algeria they reside. The Northern and Southern regions of Algeria have slightly different diets. Northern Algeria residents eat lamb and chicken stew served with potatoes, tomatoes, onions, chickpeas, olives, and dates (Food and Daily life). Northern Algeria residents also drink mint tea and turkish style black coffee (Food and Daily life). In Southern Algeria, the residents eat dates, figs, and hard cheeses (goat cheese) with unleavened breads baked over a fire (Food and Daily life). Despite the different diets the two regions have, they share some diet similarities such as having barley and wheat for practically every meal (Food and Daily life). They also use the same spices to cook with such as saffron, nutmeg, and cinnamon (Food and Daily life). Popular dishes in both regions are Couscous (served with lamb, chicken, and vegetables) and Tamina (roasted semolina with butter and honey) (Food and Daily life). More popular dishes include: Chorba (spicy soup), Dolma (mix of tomatoes and peppers), Bourek (mincemeat with onions and fried eggs rolled and fried in batter), and Laban (mixture of yogurt and water with mint leaves for flavoring) (Stanford).

Algeria has one of the best healthcare systems in Africa, though it is in need of modernization (Poverty and Healthcare). Much like America's healthcare system, Algeria has established hospitals (university hospitals), clinics, medical centers, and small health units with high employment rates (Poverty and Healthcare). Algeria is admired for how giving they are to their less fortunate citizens. They offer free medical care for children, elderly, and those individuals with low incomes (Poverty and Healthcare). This healthcare system has to take care of all of Algeria's citizens. On average there are 5.65 individuals living in a household (The World Fact Book). A household normally consist of grandparents; their married and unmarried sons; their unmarried, divorced, or widowed daughters with their children; and other related male adults (The World Fact Book).

Algeria's land is split into parts: farmland, grazing land, and land for agriculture sector use. About 3.45 percent of Algeria's land is used for farming (Crops). On average 63 percent of all farms grow wheat and barley (Crops). Other major crops Algerians raise are grapes, citrus fruits, vegetables, olives, tomatoes, potatoes, tobacco, and dates (Crops). Grazing land in Algeria makes up 13.22 percent of its land (Crops). Animals typically raised in Algeria are cattle, sheep, goats, and sometimes camels (Nedjraoui). In Algeria, sheep are the main livestock raised featuring at 80 percent of all farms, next is cattle at 53 percent, followed by goats at 13 percent (Nedjraoui). The agriculture sector uses up to 17 percent of Algeria's land (Crops). The agriculture sector has set up fisheries, forestry, and deforestation (Hauske). There are two definite groups in Algeria: Muslims and Non-Muslims. Muslims own approximately 630,732 farms averaging 38.2 acres (Robinson). Non-Muslims had fewer farms than the Muslims, however their farms had more acreage than Muslim farms (Robinson). Non-Muslims farms averaged at 22,037 farms with about 448 acres per farm (Robinson).

Algeria, like every other country, has its conflicts. Algeria's climate causes difficulties of progression in agriculture. Algeria's land is dry and rough due to limited rainfall and high winds (McManus). On a regular basis severe earthquakes occur as well as floods and mudslides in the winter (McManus). With the Sahara desert taking up 80 percent of Algeria's land, fertility is a key issue (McManus). The most fertile land is on the coastal line of the Mediterranean Sea (McManus). The Sahara region temperatures can reach 120 degree fahrenheit and down to freezing at night (McManus). This fluctuation in temperatures does not aid crop growth, especially when some parts of the desert region go without rain for 20 years (McManus). Agriculture is affected by these climate issues because the agriculture sector relies on rainwater for irrigation (Algeria-Agriculture). If there is little rainfall, then production levels are greatly affected (Algeria-Agriculture).

Algeria's climate issues are not the only issue causing the country problems. Employment wages, as well as access to food markets and adequate nutrition, cause conflicts with-in the country too. With minimum wages set at \$138 per month, a decent standard of living is not possible (Thomas). Health and safety regulations are required by law, though the enforcement of such is irregular (Thomas). Without safety and health precautions, work conditions are not safe, so employment rates would most likely be low. When accessing food markets the road conditions are not necessarily the best. On the hill zone, the roads are most adequate (Thomas). However, when considering mountainous and rural area road conditions, they are very poor (Thomas). Adequate nutrition is very difficult to have without assurance that the food one consumes is healthy or not. Algeria has a shortage of vaccinations, though the vaccinations they do have are too expensive for most Algerian citizens to purchase (Le Gall). Therefore, vaccinations are not routinely given due to the high cost.

If access to vaccinations increased in Algeria, then food availability and quality would increase. Approximately 200 million Algerians live off livestock production of some sort (Le Gall). The poor populations, which makes up 50 percent of the sub-saharan African population, are exposed to the several diseases their animals carry (Le Gall). Animal diseases affect livestock assets of farmers and poor countries, limiting market-access opportunities for animals and animal products and restrict possibilities for intensifying livestock farming (Le Gall). Preventions for these diseases are scarce and expensive in Algeria but are necessary in maintaining life (Le Gall). Global and collective recommendations have been made. Global methods include incentive framework, institutions, investments, while collective methods include collecting for national, regional, and internationally locations (Le Gall). The national structure (Official Veterinary Services, jointly with the private and sector and associations) needs to convince their Finance Ministry of the importance of investing in animal disease control and prevention (Le Gall). At the regional level, the country's Official Veterinary Services must work together within the framework of the OIE (Oficina Internacional de Epizootias), intergovernmental organization responsible for improving animal health worldwide, if they want to attract the interest of funding agencies (Le Gall). If the national and regional level applications are well constructed, then the funding agencies must collaborate more with themselves and with international organizations to develop a clear and convincing agenda (Le Gall). It has been suggested that a significant health component should be developed with the OIE as part of the African Livestock platform (ALive programme) (Le Gall). The ALive platform represents another step forward in the involvement of the OIE in promoting animal health for both the reduction of poverty and for the facilitation of regional and international trade of animals and animal products produced in developing countries (The OIE's Strong Involvement in launching the African Livestock platform).

If more vaccinations were available in Algeria, then its citizens would not have to worry if the meal they prepared will cause them harm. A healthy, vaccinated animal is safer than one which is unhealthy and unvaccinated. More availability to vaccinations would help the livestock business in Algeria because no one wants to buy a sick animal. If more animals were healthy, then farmers could sell their livestock for higher prices because the animal would be better quality. Prices of vaccinations would be the conflict. After adding the original cost to sell Algeria the vaccinations and the shipping cost, the vaccines would be so expensive that most Algerian citizens would not be able to purchase them. If trading goods to cover the cost of shipping could be arranged, that would help cut the cost of the vaccinations greatly and make them more affordable for the citizens. Algeria could consider trading with Switzerland. Its main exports consist of packaged medicaments and human or animal blood (Switzerland). If Algeria's government could trade Switzerland some of Algeria's oil, gas, petroleum, etc. for Switzerland's animal blood and packaged medicaments then vaccines and other livestock medical needs would be more readily available. Another good reason to chose Switzerland is because it is closer to Algeria geographically than the United States. However, if a trade with Switzerland cannot be reached then Algeria could contact the United States, who exports packaged medicaments as well (United States). The United States imports crude petroleum and refined petroleum (United States). Algeria could offer the United States crude petroleum and refined

petroleum in return for packaged medicaments. A downfall to trading with the United States is that it would take a while for the supplies to arrive in Algeria since the two countries are an ocean apart.

In 2008, from August to September, three surveys were conducted: Bluetongue Virus (BTV) Survey, Epizootic Hemorrhagic Disease Virus (EHDV) Survey, and African Horse Sickness Virus (AHSV) Survey (Madani). The animals tested were cattle, sheep, goats, camels, horses, and mules with ages ranging from six to 12 months of age (Madani). About 1,341 samples were taken from 149 herds of cattle, 359 samples were taken from 65 flocks of sheep, 71 samples were taken from 27 herds of goats, and 92 samples were taken from 26 herds of camels (Madani). In the BTV Survey, 29 percent of the cattle sampled, 14 percent of the sheep sampled, 21 percent of the goats sampled, and 21 percent of the camels sampled all had BTV pathogens in their body (Madani). That is about 389 of the 1,341 cattle tested, 50 of the 359 sheep tested, 15 of the 71 goats tested, and about 20 of the 92 camels tested (Madani). With camels being used to travel across the desert, this makes the spreading of BTV across the Sahara Desert more liable (Madani). In the AHSV Survey, none of the 145 mules and six horses that were tested showed antibodies against the virus (Madani). When considering the results of the surveys, it is common to ask “why don’t we treat the livestock for it?” Well in Algeria, vaccinations for BTV and AHSV are illegal because if that animal dies there is no way to tell if the animal died by natural infection or by contamination of the vaccine (Madani). In the EHDV survey, 9 percent of the cattle sampled had antibodies for EHDV (Madani). The majority of EHDV cases were found in central and southern Algeria (Madani). An EHDV outbreak can have a major economic effect through loss of milk production and increases in animal deaths (Madani). One way to prevent BTV from occurring is to vaccinate animals before the symptoms arise (Bluetongue). The same goes for AHSV (Chiam). On August 1, 2014, the European Union (EU) shipped 1.1 million Foot and Mouth Disease (FMD) vaccinations to Algeria (Byrne). This was the biggest outbreak of FMD in Algeria in 15 years (Byrne). Animals were tested in the Algeria’s Central Veterinary Laboratory for FMD and if the results came back positive, then the animals were slaughtered (Byrne).

The Algerian national government could make treaties with other countries, such as Switzerland and the United States, to trade livestock vaccinations for other goods to cover the cost of shipping. The communities and individuals could do their part by taking their livestock to the veterinary clinic, or having the vet come to the farm to take blood samples and test for FMD, EHDV, BTV, AHSV, and other illnesses. Then, farmers would purchase the designated vaccines and inject them into their livestock to help keep them healthy. By making sure livestock are up-to-date on vaccinations the owners can produce healthy and better quality livestock. Organizations, such as vet clinics, could contribute by making livestock vaccinations, and themselves, more available to the public. The veterinary clinics are located along the coastal line of the Mediterranean Sea (Rebello). This location is quite an inconvenience for the farmers, that live in the central and southern part of Algeria. In order to prevent another disease outbreak, such as the FMD, BTV, EHDV, and AHSV, Algerians could quarantine their animals when they first notice the animal behaving differently, not eating or drinking, and showing symptoms of familiar diseases. Algerians can then contact the vet to get the animal inspected and hopefully get the sickness stopped before it worsens in that animal and spreads to the rest of the herd. Knowing that animals are up-to-date on their vaccinations provides assurance that the meal consumed is safe and healthy.

When considering this proposition, one would have to put themselves in Algeria’s situation. Who wants to eat contaminated meat? Who wants to lose all their livestock to a disease outbreak? Algerians do not. This is why vaccinations are so important. The health of a million or more individuals and animals are at stake. If Algeria’s national government would contact other countries and negotiate some sort of trade to gain livestock vaccinations, it would solve most of Algeria’s problems. Yes, the government is trying to make its country more self-sufficient, but the government needs to know that asking for help in a time of need is completely acceptable. That is also a part of being self-sufficient, knowing when help is needed and asking for it. Since Algeria is not prepared for another outbreak this would cause many problems.

Livestock are very important to Algerians because of how many people live off of them. Whether it be harvesting cattle for a meal that evening or milking their goats to make cheese, Algerians rely on their livestock wholly. When so many rely on the same resource, that resource must be of the best quality. With most of Algeria's population being poor, its citizens cannot afford the retail cost of vaccinations if the retail cost includes shipping and the original price of the vaccine.

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