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“Managing Q Fever for Improved Food Security in Afghanistan”

Since the United States initiated its campaign in Afghanistan in 2001, Afghanistan has been forced to confront a myriad of problems ranging from a volatile insurgency to the menacing paramilitary organization known as the Taliban. Unfortunately, a crucial factor in Afghanistan that was lost in the conflict was the practice of proper livestock management to prevent diseases. During times of war, people frequently flee their homes and normal areas of residence in order to seek safety. The problem with the newfound nomadic activity seen during periods of dispute is that diseases that may previously have been virtually non-existent in one region are suddenly introduced by the refugees, or the livestock that the refugees travel with, thereby creating a disease-management quandary. Dr. David Sherman, DVM, MS, DACVIM reinforces this idea in a 2010 article, in which he writes, “Attempts to maintain disease control efforts in times of war or insecurity can be daunting, and may require novel approaches.” (Sherman 283) However, while this task is daunting, this does not mean that it cannot be achieved; what it does connote is that the United States must re-evaluate how aid is supplied to Afghanistan, and that we must readdress the current epidemiological issues that the country is facing. The epidemiological issues that Afghans have been forced to confront have implications that are just as serious as food insecurity; as long as Afghanistan has disease problems in its herds, Afghanistan will be forced to rely upon the opium trade for financial stability. This in turn will allow the Taliban’s continued success within Central Asia. The United States needs to focus on building up agricultural infrastructure in Afghanistan by assisting in preventing diseases that are endemic to this country.

One of the biggest problems for Afghanistan is that the diseases that are endemic to livestock there frequently have negative economic impacts. The main disease that causes these problems is Q Fever. The negative economic impacts usually manifest themselves in abortions or livestock death. Another issue that directly impacts food security is that milk produced by an animal infected with Q Fever (a cow, sheep, or goat) will carry Q Fever and potentially infect the drinker unless the milk is pasteurized (Wallace, Hale, Utz, Olson, and Earheart 188). Sadly, the drinker cannot identify milk as “diseased” as opposed to pathogen free milk; thus, the drinker may be infected with Q Fever. This disease presents food security issues at two levels: first, because it reduces livestock profitability, giving families fewer products to sell, and consequently, less money to spend on buying food to survive; and second, by posing a health risk to the families of subsistence farmers.

When examining where and how Q Fever impacts food security in Afghanistan, we must first examine the economy of Afghanistan. Afghanistan is a country where farming is a struggle- only 12% of the land in the country is arable, and most of that land is only useful for farming dryland cereals (Davis 1). While only 12% of the country can be utilized for grain and produce farming, comparatively, a large portion of the land is useful for raising livestock. 45% of the land is ideal for raising cattle, sheep, goats, and other animals that can be used for subsistence farming or production farming (Davis 1). In fact, sheep have long been the backbone of the Afghan livestock economy, so much so that a group of Pashtun nomads known as the *Koochi* actually made a living simply herding sheep and selling sheep products like milk and wool. Cows play a role in Afghan food security; however, cattle are primarily owned by sedentary subsistence farmers. Prior to the Soviet invasion of Afghanistan in 1978, the livestock sector accounted for 40% of the Afghan export economy, mainly in the form of sheep and goat products like casings and skins (Davis 201). Unfortunately, today Afghanistan faces a plight that has brought its livestock industry to its knees. Since the Soviet invasion, the livestock industry of Afghanistan has faced numerous obstacles; the loss of veterinary infrastructure, the slaughtering of animals, and the rise of disease. The portion of the livestock industry that has been hardest hit is, without a doubt, the sheep industry. Since 1978, the sheep population in Afghanistan has declined by 60% (Davis 201). While this steep decline has been

devastating, what is more disconcerting is the decreasing chance of recovery for Afghanistan's livestock industry. Many of the Koochi, traditionally nomadic shepherds, have lost all of their sheep, and many more have severely depleted herds. In addition to the depletion issue, tribal conflict has introduced more issues into the equation. The Shi'a Hazara, a group of Afghans who traditionally have occupied the lowest social class in Afghanistan because of their Shi'a faith, have recently entered into land disputes with the rival Pashtun Koochi (Davis 201). In an attempt to find summer pastures to graze in, many of the Koochi have moved their herds into the rangelands of Afghanistan, but the indigenous vegetation found there is so sparse that overgrazing will undoubtedly result. All of these problems have only been compounded by the re-emergence of disease within Afghanistan's weakened herds. As long as Q Fever plagues Afghanistan's national herds, Afghanistan will not be able to build up its livestock industry. The classic signs of Q fever inherently prevent the development of larger herds, because it causes stillbirths and abortions (Rahimi 2324). These stillbirths and abortions reduce the profitability of an animal, because as long as a ewe continues to abort, or give birth to stillborn lambs, she will simply be using a family's money for feed expenses without presenting the family with new lambs to sell products from. These problems will not resolve themselves on their own, nor will they be easy to solve. However, if the global community, as well as the Afghan government, can re-evaluate their strategies for Afghan development, then effective changes that will improve food security will occur in Afghanistan. This can be attained in a number of ways; first, by enabling local non-governmental organizations to address the issues in a more focused, directed manner; second, by working in tandem with Afghanistan to rebuild the veterinary infrastructure of the country; and finally, by educating Afghans on how to prevent and treat Q Fever.

In his 2011 book *How to Run the World*, author Parag Khanna discusses something he calls "mega-diplomacy", which is essentially a blend of philanthropy, education, and non-governmental organizations working together for the betterment of their community or country (Dovell 1). He claims that mega-diplomacy is often more effective than state diplomacy because the latter simply is not always effective when it comes to dealing with turbulent countries. Afghanistan is one of these turbulent countries, and currently, the United States is simply trying to use state-based solutions to handle Afghanistan's problems. While the United States' intentions in using state-based solutions are good, mega-diplomacy may in fact be the better solution for the issues facing Afghanistan. In his book *The Wars of Afghanistan*, author and Afghan policy expert Peter Tomsen writes about one of the biggest obstacles for outsiders in Afghanistan: Afghans often mistrust outsiders (Tomsen 26). Much of this inherent distrust stems from the times of the Mongol raids throughout Afghanistan. During the Mongol raids, people in Afghanistan withdrew into the mountains and valleys of Afghanistan, forming isolated tribal units, and dissolving ties with outsiders. As they became more and more self-reliant, they became less and less trusting of outsiders. To the people of Afghanistan, the United States is simply another outsider, trying to take control and alter the way the Afghans live. If the United States wants to maintain effective policy in Afghanistan and help eliminate disease, we must instead delegate authority to local, non-governmental organizations that will deliver aid where it is needed. Using these to tackle public health issues in other nations has been highly effective in the past; for instance, when Rinderpest became a huge threat to the Horn of Africa, local community health workers whom the local populations were familiar with were trained to address Rinderpest, instead of introducing foreigners whom the local communities would be less likely to trust (Sherman 283). As a result of the collaborative work between localized health workers and outside educators and funding, Rinderpest has now been completely eradicated from our planet (McNeil D1). While it may not be feasible to completely eliminate Q Fever in Afghanistan, the example of Rinderpest does serve to reinforce the power of the localized NGO. In a November 28th 2010 article in *Foreign Affairs* magazine, Alejandro Flores and Alastair Smith, both political science professors at New York University, write about how the tremendous flood of foreign aid to Pakistan after its November 2010 floods only exacerbated the corruption problems that Pakistan was already experiencing, because the large, undirected flow of money simply fell into the hands of corrupt politicians without anyone noticing (Flores and Smith 1). If money can be directed specifically to NGOs that will work on educating about and preventing Q Fever in Afghanistan, then Q Fever will become less of a threat to sheep within Afghanistan. There are a few select NGOs that could realistically be utilized to achieve this goal. The first step that the United States should take is to utilize the Provincial Reconstruction

Teams (PRTs) that the United States' Coalition Forces created as part of Phase IV, or the reconstruction phase, of Operation Enduring Freedom. However, as the Afghan Research and Evaluation Unit reports in its 2011 Afghan Assistance Guide, the teams, which average about 80 people, are often comprised of civilian specialists in engineering or agriculture; very few have veterinary advisors (Wilson 59-60). More veterinarians and public health specialists need to be added to these teams, because while encouraging new methods of agriculture using civilian experts is important, it is equally crucial to maintain and build up the traditional mainstays of the Afghan agricultural economy, and veterinary assistance is the only way to properly prevent and treat Q Fever in Afghanistan's sheep. In addition to Provincial Reconstruction Teams, the Dutch Committee for Afghanistan is another NGO that has played a huge role in the reconstruction of Afghanistan, as well as allotting many resources towards public health work. The Dutch Committee for Afghanistan has also hired numerous veterinarians to help them rebuild the Afghan agricultural economy (Rezendes 1). All of these factors make the DCA one of the best candidates for improving the Afghan agricultural economy. Using these two localized solutions, it is clear that effective Q Fever management is possible in Afghanistan.

In a 2009 paper, Alan Roe writes that policymakers in Afghanistan have to recognize that rural stability is a prerequisite for sustainable growth of the rural economy (Roe 17). Roe missed something in his assessment; veterinary infrastructure is a vital prerequisite for a stable rural economy. Without access to legitimate veterinary care, the sheep farmers within Afghanistan will unintentionally leave their herds vulnerable to diseases that could lead to financial hardship. The question is, how can the United States and global community play a role in the return of veterinary infrastructure to Afghanistan? The answer is simple: the United States must provide the conduit for the education to become a veterinarian. During the 1960's and early 1970's, the United States and Russia entered into an almost comical "infrastructure race", and their playing field was Afghanistan. When Russia built highways in Afghanistan, the United States helped finance the expensive Kandahar airport. When Russia began to permeate the Afghan educational system, the United States built and staffed Kabul University, as well as encouraging partnerships between US colleges like Columbia University and University of Nebraska with Afghanistan. While the United States should not aim to compete with Russia for regional dominance in Central Asia, what it should take from this period in history is that bringing the education to Afghanistan, rather than trying to draw Afghans out of their country to receive a veterinary degree, is more effective. As aforementioned, Afghanistan is a country with an isolationist culture; therefore, getting Afghans to come to the United States will prove to be very difficult. Building more veterinary schools throughout Afghanistan is one crucial factor to help improve the veterinary infrastructure. Currently, there is only one quality veterinary school in Afghanistan- Kabul Veterinary College (Stanikzai). The United States needs to encourage the creation of new veterinary schools in Kandahar and Helmand. By having more veterinary schools, one can ensure that veterinarians are being distributed more evenly throughout Afghanistan, rather than in one centralized location. This would benefit farmers in Afghanistan, especially subsistence farmers who may not have the financial means to travel long distances to seek veterinary care. In addition, the quality of veterinary education must be improved in Afghanistan in order to implement better Q Fever management. Today, the average veterinarian in Afghanistan goes through high school; after high school, they go to veterinary school, which they attend for five years before graduating. The average veterinarian in the United States must have at least eight years of post-high school education before he or she can receive a veterinary license. The other issue, in addition to the vast discrepancies between a US and Afghan education, is that the equipment that these students have access to is often out of date; as a result, these students have no idea how to treat diseases using modern equipment, and in many cases, are unable to detect diseases. As Dr. Susan Chadima, DVM, said in a 2006 interview with the Journal of the American Veterinary Medical Association, "Electricity is generator-only, so it's seldom turned on...It was a 15-minute procedure just to turn on a microscope." (Rezendes 1) What is most disturbing about this situation is that Chadima was working in the main veterinary clinic for Kabul University's Veterinary College. It is unrealistic to expect Q Fever prevention in Afghanistan when Afghanistan's future veterinarians are being trained in this environment. The United States needs to work with Kabul's Veterinary College to improve its access to modern equipment; if the veterinary

college has improved facilities for research and education, then they can prepare the next generation of veterinarians to protect Afghanistan's herds from Q Fever.

While educating veterinarians is a crucial factor in improving Q Fever management, the biggest factor in this management is the farmer. If the farmer does not understand what the veterinarian is doing, or doesn't understand how to maintain a course of treatment or prevention, then there is a strong chance that the plan that was laid out will fail. Educating Afghan farmers, both subsistence and commercial, is key to having an effective defense against Q Fever. When examining how to educate Afghans about Q Fever, and enable them to prevent it, the answer is clear: the solution needs to be brought to them. In impoverished nations, asking people who have little money to travel long distances to learn about things they know little about is usually ineffective. Instead, education about Q Fever needs to be integrated into the culture of the Afghan villages. One way to do this is by utilizing the societal power that village mullahs have. Mullahs traditionally educate the youth within Afghan villages; asking them to educate adults about Q Fever in a relatable format that outsiders can't achieve simply takes their jobs a step further, without disrupting the tribal structure. Non-governmental organizations such as the World Health Organization should first create an educational curriculum on Q Fever prevention; second, create conferences similar to the political *loya jirgas* in Afghanistan for the mullahs to attend; and finally, do annual surveys to assess the effectiveness of this education technique. Depending on the survey results, changes can be made to the curriculum, or the curriculum can stay the same. In addition to education, it is key that the tools of prevention be provided to the people of Afghanistan. The main tool of prevention for human infection is actually not vaccination; instead, pasteurizers need to be introduced to localities within Afghanistan. Throughout the world, it is a struggle to find sanitary water for those living in poverty; as a result, many non-governmental (and governmental) organizations have created initiatives to supply these people with clean water. What needs to be held in equity with this is clean milk. Milk is a beverage that provides essential vitamins and nutrients for children in their developing years, as well as adults. Milk could easily be used as a solution to many of Afghanistan's food security problems, because while man cannot live on milk alone, milk certainly is a good starting point. Goat's milk and sheep's milk are both heavily consumed within Afghanistan. Unfortunately, as aforementioned, Q Fever survives and is transmitted through milk, unless the milk is pasteurized. This is why the United States and NGOs need to focus on delivering pasteurizers to localities throughout Afghanistan. The average pasteurization unit that holds two gallons of milk costs about \$370 ("Caprine Supply"). This is a low cost for the reward of providing a child with clean, safe milk. If these two solutions can be implemented in Afghanistan, then it can be ensured that Q Fever prevention will improve.

When we look back to the problems that Q Fever causes in sheep around the world, it's clear why it must be eradicated in Afghanistan. First and foremost, it is important to remember that Q Fever causes abortions and stillbirths in sheep- these failed pregnancies, added up over time, will burden the average Afghan family with significant financial losses. In a more disease-related aspect, Q Fever can transmit through milk, which puts the families of Afghan subsistence farmers at risk. If we want to start seeing significant changes in Afghanistan's agricultural economy, it must start here. If we begin changes at the local level, instead of trying to change the status quo from far away, these changes can be implemented, and if they are implemented, Afghanistan's food security situation faces a more promising future.

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