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Brazil, Factor 4: Animal Health

### **Brazil: Maintaining animal health**

Raising cattle for market is something that is relatable to many people from South Dakota, and they raise cattle mainly as a source of income, not as a sustainable way to feed the family. Every once and awhile they many choose one or two steers out of their herd to butcher for their family but for the most part, the entire herd turns a profit at market for benefit of the family so they can continue to raise cattle. Brail, is not the same as South Dakota in cattle production. Brazil, produces large cattle populations, though a lot of that population goes to feeding the people of Brazil some will be exported to create cash flow for Brazil's economy. This is a problem, food insecurity rates around the globe are growing and it does not help that such a large percent of the world's cattle population is mainly concentrated in one country, though it is not completely Brazil's fault. Due to outbreaks of diseases and the inability to eradicate those disease some countries will not trade with Brazil. Half the problem that causes food insecurities is not lack of resources but lack of proper distribution of resources. I looked into this problem Brazil is facing and I found some interesting things Brazil struggled with a major disease outbreak back in 2007 and they are still feeling the repercussions of that today. Today Brazil also faces problems with the growing population of people and not resources, how they administer vacations and manage bio-security in animal herds, and the investment into advancing medicine all affect how Brazil's cattle population grows.

Let us look into a basic family in Brazil. Half of Brazil's population lives in poverty or below the economic standards of their own government (Bender 56). In each household, there is commonly two or three children, and is most likely a multigenerational household, meaning that grandparents, sometimes even great grandparents live in the same household as their kids and grandkids. A Brazilian's diet is very plain and consists of a small meal of coffee and bread in the morning. Lunch is their largest meal of the day, consisting of rice, beans, and some sort of meat like chicken, beef, or seafood. Then a night meal which is a light portion consisting of the same type of food as lunch (Bender 66). The overall nutrition of Brazil is extremely poor, and over 70 percent of Brazil's population lives with malnourishment, and at least 50 percent of the population is poor. Due to both of these factors large crowds of people loot supermarkets and for some, that is their only access to food (Bender 56). Education and income are also major factors that play into everyday life of a Brazilian, the less income your family makes the less chance as a kid you have to obtain an education and as a result, Brazil has a 75 percent literacy rate (Bender 10, 56). To earn a living wage as a family all the members of the family, including kids must either work or beg on the streets and sometimes even with everyone trying to contribute, what a family earns does not even amount to a living wage (Bender 56). Overall something needs to be done to improve the living standards and conditions in Brazil, with a large focus on access to adequate food, water, education and an income that can sustain living.

Brazil's population is increasing steadily although their productions of resources are unable to grow at the same pace. "Large crops are wheat, rice and corn, but Brazil does not produce

enough of these to meet its needs” (Bender 86). The same thing is happening with Brazil’s cattle production, Brazil is a major beef producer but a lot of it becomes consumed within the country. “93 million, one-fourth of all the world’s cattle are raised in Brazil” (Bender 86). This is starting to become a problem, with the increase in world population, also the increase in food insecurities, a quarter of the world’s beef should not be concentrated in mainly one country. Another problem Brazil faces is that two percent of the population owns 60 percent of the farm and grazing land, and 70 percent of rural farm families are landless (Bender 85). This unequal distribution of land leads to people not having access to what they need. Across the entire country of Brazil there is some very unequal distributions of population, some regions like north eastern Brazil have very little population due to the climate. Then there is the other extreme that migration to urban areas is very high in hopes of finding jobs and better living conditions. Which is not always the case, due to all the people employment opportunity is lacking. The unequal distribution of Brazil’s population may change over time as access to new and improved infrastructure increases and new technology to help people survive in the desert like, drought ridden areas, but it will be a slow moving process.

There are many different ways to raise and upkeep a herd of animals, and one of the main things is to pay close attention to biosecurity habits and procedures. Brazil’s biosecurity measures or lack of may have resulted in part of the problem that is causing a decrease in Brazil’s cattle exportation. Brazilian’s cattle herds have increased mortality and lower production yields due to influx of disease and other harmful pathogens. Biosecurity is defined as “procedures intended to protect humans and/or animals against disease or other harmful biological agents” (Gillespie/Flanders 79). In Brazil’s case, practices like sharing water tanks between herds or using equipment in more than one field and not washing it in between or not washing and or changing clothes and shoes in between different pens and pastures along with other things of this nature could be making Brazil more susceptible to major outbreaks of harmful diseases. For biosecurity measures to be fully effective everyone has a major role. The owners of the herd have to be dutiful in making sure that each pasture, herd, or group of animals have their own water tanks and feed bunks. Also to be sure and wash vehicles and equipment before moving them from one pen to the next on their place. With simple steps like these the health and safety of each individual herd in Brazil would have the chance to skyrocket making the cattle industry making it easier to raise cattle in Brazil. Not only do proper biosecurity measures need to be in place, another easy and effective way to ensure the protection of a herd is to administer vaccinations. Not all diseases have a vaccination for them and some diseases have multiple strains that could be vaccinated against. So vaccinating against every disease known is not possible or financially feasible vaccinated against a few of the more common diseases makes it that much easier to keep a herd healthy. If biosecurity practices and using vaccines against common disease and put into place, then there would be a better chance for more cash flow into Brazil economy, which in turn has the chance to create more jobs, resulting in better income for some families and more access to food and education, allowing the next generation to have more social mobility and grow out of poverty. Events like this are only able to happen when safe and effective biosecurity practices are paired alongside the use of proper vaccinations, when these practices are not put into place widespread outbreaks of a disease can happen hurting cattle production and the economy even more.

In the past Brazil had an outbreak of hoof and mouth disease, a report issued in 2007 by the FAO states that “The number of outbreaks of Foot and Mouth Disease in this region has decreased during the last two years and the overall situation of Foot and Mouth Disease has improved” (“Foot-and-Mouth Disease”). This shows that Brazil has put some time and technology into developing vaccinations and safe practices to prevent the spread of diseases, but their work may not be finished. As the article goes on to state that “the Foot and Mouth Disease virus appears to persist in some animal populations in the Amazon region of Brazil, Brazilians have not secured these areas, which still allow outbreaks in the zones that take the name a “free zone with vaccination” (“Foot-and-Mouth Disease”). This shows that Brazil while they have advance in their medicine practices far enough that some regions are call free zones; they need to continue on the zones that are unable to take that title. During 2005, there were 25 reported cases of serotype O most common in South America. There are four different strains of Foot and Mouth Disease; and two of them have reported cases in South America (“Foot-and-Mouth Disease”). While vaccines for Foot and Mouth Disease are available, each strain of the virus has to have its own vaccine so it can be hard to vaccinate against. Also there is a lot of controversy over making vaccines to protect against Foot and Mouth Disease, reason being is that to create the vaccine a live strain of the disease has to be used. Which means lives strains of this volatile disease are being kept in a research center somewhere. This raises a lot of questions and concerns, what if someone was careless and a strain or part of a strain was on their clothing when they left that research center and then all of a sudden there is another major outbreak of Foot and Mouth Disease (APHIS Factsheet). This outbreak and lack of containment shows that Brazil is still advancing in distribution and production of medicine.

Transmission of an infectious agent requires it to escape its host, which in Foot and Mouth Disease this happens when the blisters break open releasing a huge number of viruses. After this blisters break is the most dangerous part, which is when and how the disease spreads from animal to animal (Kirkbride page 62, 63). Foot and Mouth Disease is so hard to spot right away because the blister that are the tell-tale sign of this disease break open rather fast so if you don't catch them right away, you will not notice till the infected animal starts displaying other symptoms and the whole herd has been exposed. To completely eradicate a disease three criteria must be met; we must have complete knowledge and control of all sources of infection, we must have adequate techniques for identifying infected animals and we must have authority and personnel to control livestock movement if one of these is unable to be met, it is impractical to try and eradicate an infection (Kirkbride page 77). Brazil is nearly to this point to be able to try and completely eradicate Foot and Mouth Disease which is an amazing accomplishment compared to looking back at 2007.

Foot and Mouth Disease is virus that can be highly contagious, and it affects animals like cows, pigs, sheep, deer and other cloven hooved animals. Foot and Mouth Disease is not recognized as a zoonotic disease but humans can carry or transfer this disease by their clothing. This disease cannot be contracted by humans, but it is still a worldwide concern. Foot and Mouth Disease can be recognized by the blisters on and around the mouth and hooves of the affected animal, these blisters cause immense pain which can lead to other displayed symptoms in the animal such as lameness, high fevers, a drop in milk production for dairy cattle, loss of appetite, and reluctance to move or stand. Foot and Mouth Disease is not always fatal, though when an animal survives it is weak and unable to produce like before. Foot and Mouth Disease is a volatile

airborne virus that can show signs anywhere from two to fourteen days after the animal is infected. This disease can be spread from animal to animal in a number of ways such as; animals being in a contaminated building or truck, if the animal comes into contact with a person wearing infected clothing, expose to contaminated feed stuffs or water, or are inseminated by an infected animal. The fact that this disease can be spread by a number of ways very quickly is what makes it such a hard thing to control. This is where biosecurity comes into play, always washing equipment and changing clothes when working with one herd to the next (APHIS Factsheet). Eradicating this disease is the hardest part about it. The only way to be 100 percent sure that it is no longer in your herd is to quarantine or enforce separation of infected and exposed animals from susceptible animals to prevent transmissions of a contagious agent, and to get rid of anything like feed bunks or water troughs that they had been using (Kirkbride page 71). There is no easy fix to a Foot and Mouth Disease outbreak, the best option is trying to contain the disease in one herd or section of the herd, though it is not the easiest option there is nor is it very economically feasible the best thing to do when Foot and Mouth Disease gets into a herd, is to cull all of the affected and any other carriers of the disease. Other than that the easiest thing to do is to watch the animals closely and make sure that at the first sign of the disease you report it and do all that you can to help eradicate the disease.

Due to all the problems Brazil has had in past years with Foot and Mouth Disease many countries are cautious about importing products from Brazil as to try and keep their own countries free of this disease. The United States is one of these countries, in the past the US was only allowing frozen beef products to be imported from Brazil. The USDA has just recently announced that they are working with Brazil on a science based rule making about changing the limits on beef trade (USDA Newsroom). This means Brazil has made leaps and bounds on overcoming the outbreak of Foot and Mouth Disease, the US starting to accept trade from Brazil again could open up doors for other countries who shut down beef trade with Brazil. In turn that would help the overall standing of Brazil's economy and start to help even out the unequal distribution of resources across the globe. Frozen bovine meat is Brazil's fifteenth top import and it makes up 1.5 percent of their annual gross income. Brazil is the top country that exports frozen bovine meat and their top five importers are Russia, the United States, Japan, Vietnam and South Korea (Trade in Brazil). Brazil is trying to work with other countries around the globe to increase the places that they can export their bovine meat products to.

Agriculture extension services make a big difference when it comes to fixing problems in the agriculture industry so I took a look into what Brazil has to offer when it comes down to it. In the 1980's the federal Government of Brazil cut funding for rural extension, and many of their state agencies closed down. Now the World Bank has started working on launching the Second Agricultural Extension Project which will help to strengthen the Brazilian Technical Assistance and Rural Extension Agency (EMBRATER), expansion of extension services, as well as strengthening the farmer/extension research links. They hope to improve the income and living standards of farm families in Brazil by working on all of these improvements. The World Bank also states that they are trying to increase living standards by encouraging and supporting the growing number of women who are participating in agriculture production (Ag Extension Project 02). EMBRATER is an agricultural extension service that helps the smaller family farms over the large more predominate farms in Brazil. They work with the farmers in hopes of creating social awareness of what these farms do for the country of Brazil, not only that but this

organization helps small family farms express themselves and their family traditions publicly to create a link between them and their consumers. Also they help provide the link to authorities and other extension worker to show what the needs of the community are and what problems they faces just to help feed the world (Training for agriculture and rural development).

Organizations like theses have had a huge impact on Brazil and its production agriculture. The work has begun though it is nowhere near done, to be able to feed the predicted population of ten billion by the year 2050 more organizations and extension services need to be readily available for the everyday farm family.

No one ever said raising cattle or any sort of livestock was easy, and no one ever will, it is twenty four hours a day, seven days a week and gives very little vacation time. Diseases like Foot and Mouth Disease make this job that much harder, the farmers and ranchers have to constantly watch over their herds to make sure they stay healthy and that at the end of the cycle, they are going to be able to butcher those animals and eat them or sell them for a profit, if not their job was all in vain. Brazil has both small family farms and large industrial farms, but each are just as important, and both have to take the same safety measures such as administrating vaccines and using good biosecurity practices. Since the outbreak of Foot and Mouth Disease in 2007 Brazil has started to bounce back and is still continuing to work on what needs to be done. Brazil is not perfect, but they are working to create more “free zones” which will make all the difference in how much cattle they are exporting. Brazil still faces problems with distributions of resources, administration of vaccines, safe and effective biosecurity practices and all of these have an impact on the production and exportation of Brazil’s cattle population. Methods of raising cattle may vary around the globe, but there is one thing that does not, and that is the cattle themselves. Brazil is not the only country to struggle with a disease outbreak, that hurt not only the population of the animals but also had an impact on the economy as well, other countries can take a page out of Brazil’s book and learn from what happened there to help prevent more outbreaks from happening across the globe. The only thing better than administering medicine to save a sick calf is using vaccinations and biosecurity practices to try and prevent the necessity of the medicine down the road.

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