

Haley Onken
Glidden-Ralston High
School Glidden, IA, USA
India, Animal Health

India: The Effects of Animal Health on Food Security

Did you know India is the second most populated country in the world? There are nearly 1.34 billion people that densely populate India (India - Rural Population). With that many people living so close together, the spread of disease is like a wildfire. Many of these diseases originate in livestock or other animals in the area and then are transmitted to the humans that inhabit that area as well. India's dense population and the living conditions create many challenges that impact the overall animal and human health, which the world needs to improve or solve.

As previously stated, there are nearly 1.34 billion people living in India (India - Rural Population). That is a lot of mouths to feed. A typical family in India consists of around four to five people. Families tend to eat roti, rice, dal, chutney, beans and other legumes, and meats like chicken and fish (Arcgis.com). 65.97 percent of the population lives in rural areas, while the other 34.03 percent lives in the urban areas of India (India - Rural Population). If people live in the urbanized areas of India, they tend to live in small villages, or small buildings, that are made of various materials. The average family does not normally have homes equipped with plumbing. Almost half of the families in India do not have toilets (The Wall Street Journal). Most of them have some electricity. The water quality in India is not the safest either.

Undoubtedly, those who do not live in the urbanized areas of India live in rural areas. Some of those people live on farms. There are approximately 215.6 million acres of cultivated land in India (Business-Standard). Compared to America's 2.3 billion acres of cultivated land, their 215.6 million acres are not much. The average farmer in India will own about three acres of land that they will use to grow their crops. In the United States, the average farmer will own around 444 acres of land to grow crops on. On their land, the Indian farmers tend to grow food grains, cash crops, plantation crops, and horticulture crops (GKToday).

One of the main religions in India is Hinduism (PBS). One may wonder how their religion can have any effect on the animal health in the country. It is because Hindus believe that the cow is sacred, therefore they do not butcher the animal for food (PBS). They allow these cows to roam free! They have herds of cattle wandering the cities of India. There are over 40,000 cows in India that wander the streets (PBS). It has gotten to a point where people have hired cow catchers to catch the cattle and release them into the wild once again (PBS). The way they treat cattle affects the animal health and the food crisis in many ways. One way it affects health is that there are thousands of cows roaming free. They could carry

diseases and spread them from one town to the next, as well as from one farm to the next. The herd could find itself on a farm pasture and they could eat the farmer's feed for their livestock. By eating down the feed for the livestock, the herd is taking away from those animals the people of India butcher or use for food.

India has the third biggest roadway system in the world, which gives all the people access to the local markets, public health care, and education (Verdict Traffic). The public health care in India is free, but the health care is not well developed (Journal of Perinatology). They are not as advanced in medicine as other countries. Education is also free in India. There are four levels of education, the first being the lower-primary (Gnu.org). Lower-primary education is for those who are from ages six to ten (Gnu.org). After lower-primary, you would move on to upper-primary, which is for those who are 11-12 years old (Gnu.org). Next is the high secondary which is for 13-15 year olds (Gnu.org). Lastly, there is the higher-secondary for 17-18 year olds (Gnu.org). Having free health care and education makes it easier on families financially. Most people in India are only paid around \$2.58 USD per hour (TalentCulture). That is below our minimum wage in the United States by \$4.42. It is hard enough to buy food, but to pay for health care and education would be impossible.

Without a doubt, animal health in India has a major impact on food security and those who reside in the country. The meat they eat and the animals that are near them can affect the food security and the people's health. Animal diseases are known to spread to humans, so poor animal health will lead to poor human health. That is a challenge that these people face every day. With 50 percent of the animal population in India being some form of livestock, 40 percent being poultry, and the other 10 percent being pets and other animals, there is a great portion of the animal population in India that are around humans every day (Benison Media). Almost 90 percent of the animal population is livestock and 27 percent of the livestock in the country show signs of being infected with some form of bacterial food-borne diseases (Benison Media). That means 27 percent of the livestock they raise in India are becoming sick because of food contamination. That is a huge amount of animals that are wasting away. The more animals that die of diseases, the less meat that will be safe to eat out on the market. The less meat out in the markets, the less the people will have to feed their families. This leads to the people being underweight, malnourished, and having deformities ("The Role of Agriculture in Women's Nutrition: Empirical Evidence from India."). Pregnant women that do not get enough to eat or eat contaminated food, are more likely to bear children with deformities ("The Role of Agriculture in Women's Nutrition: Empirical Evidence from India."). Just as stated earlier, poor animal health leads to poor human health.

India actually has the highest zoonotic disease burden (*Acta Tropica*, U.S. National Library of Medicine). Livestock in India are prone to diseases because of the huge populations of animals with a small amount of land to live on, as well as a lack of awareness among the farmers. The density of the human and animal populations are a big cause of the spread of these diseases. There is also a lack of nutrition for these animals which leads to the 27 percent of livestock being infected with the bacterial food-borne diseases due to food contamination. The lack of education regarding proper animal care and nutrition among farmers affects the livestock's health because they do not know how to properly take care of their livestock and keep them healthy or how to treat them when they are sick. These farmers face

other challenges like the inadequate vaccine delivery system, the increased susceptibility among the livestock, and antimicrobial resistance to the vaccines and medicines (*Acta Tropica*, U.S. National Library of Medicine). Being a livestock farmer in India is very challenging without the medical knowledge they need to keep their livestock healthy.

I believe the biggest problem in India's food security is the lack of knowledge of the veterinary medical field. The best way to solve this problem would be to develop the veterinary medical field and develop the medical institutions, as well as develop regulations that the farmers would have to follow. Doing this would increase the research, prevention, and treatments of animal diseases. It would help to gain more professionals in the field to help keep the animals healthy and strong. These professionals could also teach the farmers and educate them on proper nutrition and care for their livestock. The regulations would help keep farmers from producing livestock with poor health and keep the human population safe from animal spread diseases. All of this would benefit the human population greatly and improve the human health in India. The only downfalls to developing the veterinary medical field would be the cost of maintenance and the actual development of the field and operations, as well as the research. This could all be very expensive, but in my opinion, it would be worth the good it would do for the overall animal health.

India does have a lack of veterinary professionals and that could potentially be a problem. To spread awareness and education, they could start an organization that sends veterinarians from the USA or other countries to India to help get the developing treatment centers on their feet and to help educate the citizens about animal health. Spreading the awareness of animal health could cause more citizens to want to learn about and maybe even pursue that line of work. The more people that learn about animal health, the better. Even the ordinary people of India can spread awareness by following the veterinary guidelines that would be put in place to make sure their livestock is being taken care of correctly.

Furthermore, if they were to develop the veterinary field, the veterinarians could work with wildlife preservation organizations that are already in place in India. Organizations like these could correspond and work together to better the knowledge of the communities and farmers in the area. They could work together to fight for the health and care for these animals.

Another solution to the animal health in India is animal husbandry, which they have already been trying to do. Animal husbandry is the cross breeding of animals to develop the genes that one desires the animal to have (PreserveArticles.com). One could cross breed the animals to make them healthier and stronger, to gain more weight and produce more, which would all help in the production of the livestock (PreserveArticles.com). It also helps provide proper protection from diseases (PreserveArticles.com). On the other hand, it can disrupt the local ecosystem, have high costs, and create animals susceptible to new diseases that the people have never seen before (PreserveArticles.com). One could breed an animal so it would not be affected by a specific disease that is common in the area, but then the animal would have new genes that could be susceptible to a different disease that the farmers in the area would have never

seen before. This could be a never ending cycle of breeding animals to find the perfect genes. Each new breed could be susceptible to new diseases.

My last suggestion would be to cut down the population density of the livestock. The fewer animals in one place, the less likely disease will spread. This would lessen the spread of diseases among the animals and humans and cut down on the expenses of medicine and food. The biggest problem with this solution is it would cut down the production of the food from the livestock, which would contribute to the starvation and malnutrition of the human population. The people of India would have to find another source of food to make up for the amount that they would lose from the decrease in production in the animal population.

None of these ideas alone could completely solve the food security problem in India. This is only a small part of the bigger issue. All of these ideas would help increase human health in India. In my opinion, the best idea is to develop veterinary services and organizations alike. They would obviously need a large amount of funding. Many global health organizations could be involved in alleviating the costs like the World Health Organization, UNICEF (United Nations Children's Fund), the United Nations. The government could pay for some of the expenses because India would potentially save money spent on universal health care if nutrition was improved as a result of these interventions to the health of their livestock. The government could also help set regulations for required vaccines and drugs, limit the population density of the livestock, and spread awareness of the situation

There is a growing problem with food security in India. The overall lack of good animal health in the country escalates this problem. Enhancing the health of their animals will contribute to better food security which will advance the health of the people. The people of India deserve proper nutrition and should not have to question whether their food is safe to consume. I believe that developing veterinary medical organizations will be one of the most definitive solutions to this problem by increasing safe meat production. It will expand the knowledge of the farmers, boost the health of the livestock, and in turn, it will increase the quality of the food that the people will eat.

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