

Ethiopia Livestock Value Chain & Market Systems Case Study

Food safety hazards can be broadly classified into three categories: physical, chemical and biological.

Physical hazards include any contaminant other than the commodity such as weeds, metals, glass, stones or any non-edible substance harmful to a consumer.

Chemical hazards include pesticide residues that exceed allowable limits, mycotoxins (aflatoxins, fumonisin, or ochratoxins) due to fungal infection or other chemical contamination such as heavy metals (lead, mercury, iron, or cadmium) that may occur in the field, storage or processing facility.

Biological hazards are caused by bacteria, viruses and other microorganisms.

The Ethiopia USAID Mission is developing a new five year strategy for the livestock value chain (including dairy) that will build off their Livestock Market Development project ending in 2017. They have determined that in order to incorporate food safety into value chain programming, it is better to incorporate SPS issues at the design phase. Further, based on past experience, they have identified some issues that may constrain effective livestock value chain development. These include:

Live animal export market

Ethiopia exports live animals to countries in the Arabian Peninsula. Many livestock diseases endemic to Ethiopia and the East African Region, such as Rift Valley Fever (RVF) and Foot and Mouth Disease (FMD) can result in trade bans when detected in live animal shipments. Currently neighboring Somalia is banned from exporting live animals to several Gulf States due to recent RVF detection. Ethiopia has a diverse livestock production sector including mobile pastoralists, small holders and large-scale producers making disease monitoring and response challenging.

Meat spoilage

Ethiopia exports meat to Dubai and other Arab countries. Ethiopia has regulations to maintain sanitary and phytosanitary requirements in food trade that meet both Ethiopian and the importing country standards. In 2016, Ethiopian meat exporters were detained in Dubai while they were attending the Dubai Food Fair because the meat they sent in that year did not meet the export standards. There was certain level of meat chilling that was supposed to happen before the meat was loaded for export, but it was exported before it reached the required chilling level. Thus at the point of delivery the meat was rotten. The importer complained to Dubai police, who arrested and detained the exporters for about a week in Dubai. This type of incident is problematic for the industry as a whole since reputations suffer and market share declines. Spoiled animal origin products are also a risk to domestic consumers. As for export, meat must be kept cool through processing, at supermarkets, and in the home. In-proper handling of meat results in human illness and sometimes death.

Aflatoxin in milk around Addis

After conducting sample surveys in Addis Ababa milk sheds between September 2014 and February 2015, ILRI reported high levels of aflatoxin contamination in the dairy value chain. All the milk samples were found to be contaminated with aflatoxin M1 and over 90% of the milk samples contained aflatoxin M1 levels that exceeded the European Union limit of 5 ppb. Similarly, all the feed samples were contaminated with aflatoxin B1, with levels ranging from 7 to 419 ppb (the United States regulates dairy feed aflatoxin levels at a maximum of 20 ppb). All along the value chain from farmers to feed manufacturers and traders, the levels of aflatoxin contamination were found to be high. It was found that noug cake, an animal feed made from Niger seed that is a by-product of noug oil factories, is responsible for much of the aflatoxin contamination. Noug cake is a popular feed because it can increase milk yields by approximately 35%.

As illustrated above, the livestock value chain can be impacted by all aspects of SPS. For example livestock production is negatively impacted by animal disease, low-quality or contaminated feed, and/or poor handling of animal origin food products. All of this results in compromised food safety in domestic and international markets. Some intersections between value chain activities and food safety risks include:

Milk contaminated with high levels of aflatoxin is not consumable. While this problem may be identified at a retail level, its origins are in the feed and thus the problem must be addressed through dairy cow

husbandry, health and nutrition during the production phase of the value chain.

Reasons for meat export detentions/rejections can vary. Problems may arise during production where veterinary drugs were used and residues remain in the meat. Problems could also occur, as described above, when meat is mis-handled in transit to destination markets – e.g. not kept cold enough. Understanding the origin of the problem will help implementers address the food safety risk where it starts.

Animal disease in live animal trade not only impacts human health through meat consumption, but can also compromise the health of domestic livestock of the importing country. Export markets are a valuable source of income for the livestock sector in Ethiopia and import bans impact many value chain actors dependent on this trade for their livelihoods. Thus farmer incomes, food security, and human health are put at risk by livestock disease outbreaks. As such, import and export systems that monitor animal health become critical to defending food safety and supporting trade.