

Humane Slaughtering and Meat Inspection

Solution Holder is **Adeniyi Adediran** and can be contacted through **a.adeniyi@cgjar.org**

Summary

Humane slaughter refers to the killing of an animal instantly or rendering it insensible until death follows, without pain, suffering or distress. When slaughtering animals for food, this means they must be stunned prior to bleeding out so they become quickly unconscious. The most humane method involves massive blood loss so that death quickly follows. For goats and sheep, bleeding results from ventral neck cuts. Stunning is often achieved via electro-narcosis, a profound stupor produced by passing an electric current through the brain. Many devices are commercially available that produce this stupor. Another approved method of stunning involves percussion bolt pistols. At a deeper level, humane slaughter is based upon animal rights and that even those with utility as human food have moral worth, and their basic interest to avoid unnecessary suffering must be honored. This contrasts to the view that domestic animals are merely property with no legal rights of their own. Too often slaughterhouses place profit before welfare when it comes to ending animals' lives, but it is important that technologies that reduce cruelty be more widely recognized and used.

Technical Description

African countries have regulations surrounding humane slaughter and operate commercial abattoirs in which standard operational practices are observed for animal slaughter and processing. At the same time, animal slaughter also occurs in households and villages across Africa where humane transportation, stunning and bleeding of animals are not observed and remain unenforced. Humane treatment of animals from farm to the abattoir minimizes animal suffering, improves meat quality and health of consumers. Every aspect of livestock processing has humane considerations including transporting, restraining, stunning, and killing these animals. Like humans, animals are sensitive to pain and injury. Suffering and stress affect meat quality, resulting in biochemical changes causing less flavor and lower meat shelf life. Small ruminants are transported on hoof, by rail or by road. Transportation on hoof is the most stressful and accident-prone form of livestock movement. Animals may become dehydrated, bruised, or die from exhaustion. Animals may eat unfamiliar toxic plants or lose weight through unnecessary expenditure of energy without careful consideration of the travel route including grazing and watering points. Local transport may also be overloaded in inhumane manner. In contrast, trucks equipped with decks and proper ventilation, non-slip floors and 0.4 m² per animal are recommended. Ramps inclined about 20 degrees allow stress-free loading and unloading of animals.

Uses

Humane operations within slaughterhouse and by meat processors allow these businesses to better comply with government regulations. Modular mobile slaughter abattoir and meat processing facilities are also available.

Composition

Humane handling and slaughter of small ruminants involves overnight rest after transportation in adequately sized holding pens with access to feed and water, appropriate restraining equipment before stunning, stunning using effective devices, and bleeding within one minute of unconsciousness using approved tools and cuts. Delayed bleeding results in the rupture of blood vessels and accelerated meat decomposition. All stages of slaughtering and carcass dressing are subject to certified meat inspection.

Means of application

Humane animals handling is the responsibility of all livestock value chain actors, involving both farm- and abattoir-level infrastructure and processes. These include building the right animal pens, handling kraals and restraining cages, and following the prescribed conduct of animal management during slaughter. The technologies require well trained staff and compliance enforcement. Adequate water and electricity supply are required. In addition, waste management procedures must be established for compliant processing.

Agroecologies	Dryland area, Highlands, Moist savanna.
Regions	Africa South of Sahara.
Developed in Countries	Zimbabwe, Uganda, Tanzania, South Sudan, Somalia, Senegal, Nigeria, Niger, Mali, Kenya, Ethiopia, Cameroon, Burkina Faso.
Available in	Zimbabwe, Uganda, Tanzania, South Sudan, Somalia, Senegal, Nigeria, Niger, Mali, Kenya, Ethiopia, Cameroon, Burkina Faso.
Solution Forms	Other.
Solution Applications	Mechanized Farming, Livestock Production.
Agricultural Commodities	Small livestock.

Target Beneficiaries	Commercial farmers, Small-scale farmers.
-----------------------------	--

Commercialization

Commercialization Category

Commercially available

Startup Requirements

Start-up requires a rigorous business plan, proper processing facilities, ready access to quality animals, and access to skilled labor allowing for strict hygiene, worker safety and exact compliance with regulatory procedures. These abattoirs are run as either public facilities intended to serve communities or private businesses, but both must meet regulatory standards.

Production Costs

A modest investment of US \$2,000 to \$2,500 is adequate to set up a goat and sheep slaughter slab. A modular mobile slaughter facility cost more. Establishing modern facilities requires between US \$75,000 to \$250,000.

Customer Segmentation

The absence of publicly owned abattoirs in smaller towns and villages opens wide the opportunity for private abattoirs to operate. The business is open to any entrepreneur who has been trained and licensed by the appropriate national authority. Privately owned abattoirs can slaughter 15 to 20 animals per day, depending on location and market access.

Potential Profitability

By charging a modest fee per animal, an abattoir operator can make a profit of US \$15 to \$20 per animal. Operating an abattoir is win-win business because costs are charged per animal slaughtered and there are minimal recurrent expenses, allowing substantial return on investment when adding value to others livestock. Individual entrepreneurs in the meat processing value chain can also make money from selling dressed goat or sheep meat. Live goats and sheep are often sold at nearly 25-35% less than dressed meat. For instance, a 30 kg live goat can be purchased for US \$50 to \$60 but once dressed it can be resold for \$80. With further value addition by restaurants and retailers, it is possible to obtain US \$4 or more per kilo of goat and sheep meat.

Licensing Requirements

Operators are expected to practice humane small ruminant handling, sometimes in consideration with ritual requirements. Individual entrepreneurs require licenses from their respective national or local governments to establish slaughterhouses and meat

processing businesses, including ones in compliance with environmental concerns as related to disposal of waste products.

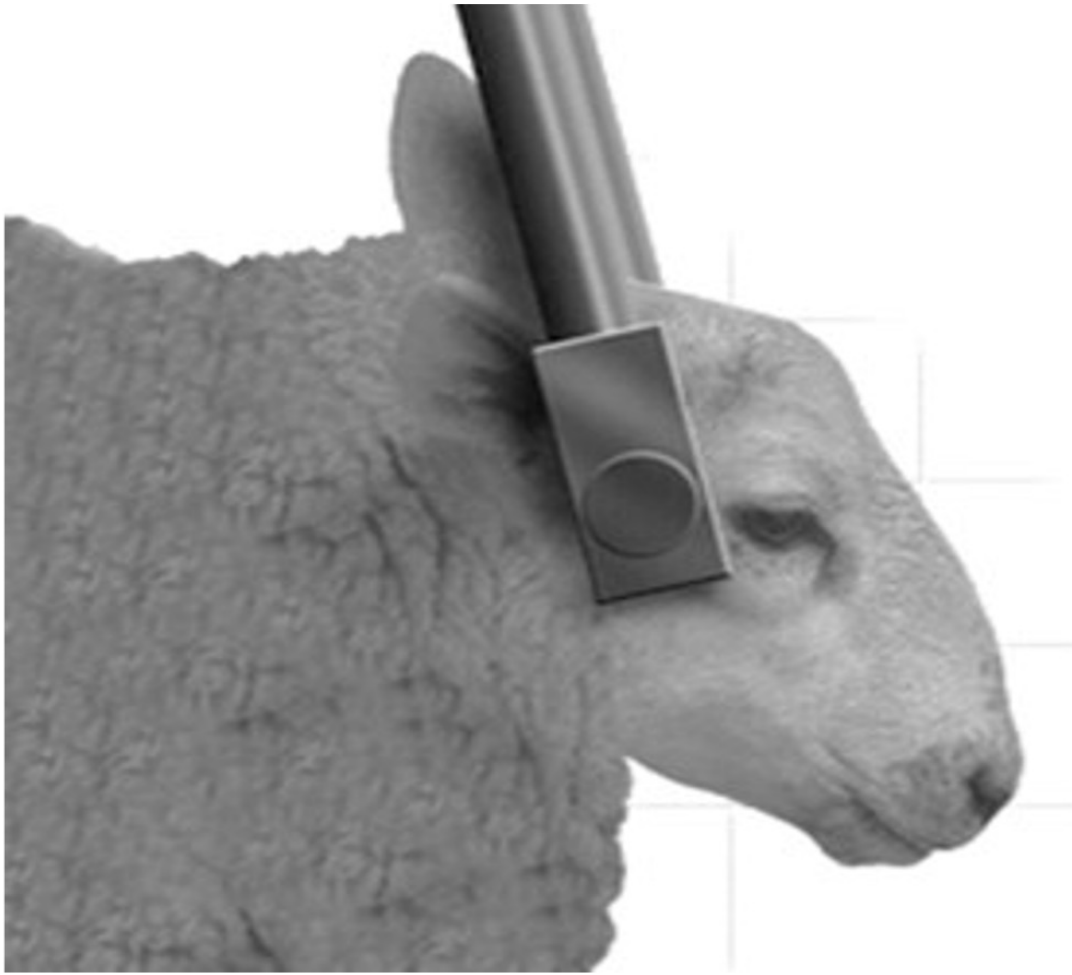
Innovation as Public Good

Information to conduct transport and slaughter of small ruminants in a humane way is disseminated as a Public Good.

Solution Images



Small ruminants transported in a properly equipped truck (photo: Dreamtime.com)



Delivery of electro-narcosis prior to the slaughter of a sheep (photo: Humane Slaughter Association, UK)



Bleeding of a humanely stunned small ruminant (FAO)

Institutions

