

Environmental Guideline on ruminant production (cattle, goat, sheep) - up to 125 cattle heads or up to 1000 goat heads and sheep heads



Department of Environment

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The purpose of this environmental guideline is to provide guidance to prospective developers to start livestock farming on the basis of self-adherence and to assist Local Authorities at the Building and Land Use Permit stage.



1.0 Background

Livestock farming involves the rearing of cattle, sheep and goat essentially for the production of meat, milk and manure. This activity is associated with several environmental impacts and sanitary nuisances which need to be mitigated through good husbandry practices and a proper farm management to avoid any inconveniences to the surrounding environment.

Major issues of environmental concern relate to:

- Zoning and site selection
- Solid waste
- Odour and sanitary nuisances
- Wastewater
- Health and safety aspects
- Energy and water consumption

2.0 Objectives of the guideline

This guideline is meant to ensure that prospective developers:

- adopt appropriate mitigation measures to safeguard the environment.
- comply with provisions of relevant laws/ regulations/standards.
- adopt eco-friendly practices to optimize use of resources.

3.0 Applicable Legislation

Livestock rearing including cattle, goat and sheep (up to 125 cattle heads or 1000 goat heads and sheep heads) does not warrant a Preliminary Environmental Report (PER) Approval. It requires a Building and Land Use Permit (as applicable) and a Trade Permit under the Local Government Act 2011. Livestock rearing has to be carried out in accordance with the provisions under the Planning Policy Guidance and Outline Planning Scheme.

Note:

- 1) *Any proposed development must comply with relevant provisions of the Local Government Act 2011, the Town and Country Planning Act 1954, the Building Control Act 2012, the Planning and Development Act 2004, as subsequently amended, Groundwater Act, Rivers and Canals Act, Forest and Reserves Act and all applicable guidelines and regulations.*
- 2) *“Rearing of above 125 cattle heads or 1000 goat heads and sheep heads” warrants a Preliminary Environmental Report (PER) Approval.*

4.0 Location and siting

- The site shall be located at least 200 m away from settlement boundaries, sensitive land uses (schools, dispensaries, hospitals) any domestic borehole.
- The site shall be located in agricultural land and outside irrigation zones.
- Livestock farms should not be located within any Environmentally Sensitive Area (ESA) and its prescribed buffer zone as per ESA Study 2009 such as wetland, steep slope and in areas that are likely to be affected by hazards such as inland flooding, landslide and storm surges, amongst others.
- All components of the livestock farms should be located at not less than 30m from any watercourse as per the Rivers and Canals Act 1863.

- Existing natural drains and watercourses should not be tampered with on or in the vicinity of the site.

5.0 MITIGATION OF ENVIRONMENTAL IMPACTS

5.1 Solid waste management

Livestock farms may generate domestic waste, bedding waste, waste feed, manure, packaging waste (feed, pesticides, insecticides and cleansing material), spoilt milk, unused/spoilt medications. These wastes require proper handling and disposal to avoid any impacts on the surrounding environment and sanitary nuisances such as odours, flies, rodents and pests.

5.1.1 Livestock bedding waste

Improper management and disposal of bedding waste contribute to odour and sanitary nuisances. Run offs from washing may contaminate surface and groundwater resources.

Mitigating measures include:

- Bedding from cleaning of the sheds shall be regularly collected and composted in a watertight pit before reuse (as fertilizers/manure) as per the recommendations of the Ministry of Agro Industry and Food Security.

5.1.2 Manure Management

Improper management of manure may contribute to odour and sanitary nuisances. Ammonia and other odour causing agents may impact on air and human health.

Mitigating measures include:

- Manure should be collected daily and carted away to a dedicated covered and/or roofed manure storage area with concrete floors for drying prior to transportation offsite as soil amendments/composting.
- Manure may also be used for production of biogas.
- Manure storage area should be located away from any water body.

5.1.3 Disposal of Dead Animals

Improper disposal of dead animals contributes to odour and sanitary nuisances attracting flies, rodents, pests, disease vectors. They may contaminate surface and ground water resources. Thus, they need to be properly disposed of to minimize impacts on environment and human health.

Mitigating measures include:

- All dead animals should be disposed of by deep burial with the application of quick lime in a dedicated site within farm premises to the satisfaction of the Sanitary Authority and the Ministry of Agro-Industry and Food Security.
- The burial area should have stable and low permeability soils.
- The setback between burial site and water courses/bodies should be to the satisfaction of the Sanitary Authority and Water Resources Unit

5.1.4 Other solid wastes

Other wastes normally include domestic wastes, packaging wastes and feed wastes. These wastes also require proper handling and disposal as they may give rise to sanitary nuisances such as odours, flies, rodents and other pests.

Mitigating measures include:

- Solid wastes should be regularly collected in bins or waste handling receptacles and disposed of to the satisfaction of the Local Authority.
- Plastic bottles/containers used for vaccination should be disinfected and disposed of to the satisfaction of the Local Authority.
- Proper storage and handling of feed – feed should be kept in a dry and properly aerated store that is free from rodents, flies and pests to prevent spoilage.
- Minimal spillage during loading, unloading, storage and feeding.
- No waste of any type should be disposed in any watercourse including rivers, ground surface drains and canals.

5.2 Odour and sanitary nuisances

5.2.1 Odour management

Odour may be released from bedding/litter, manure and decomposing dead animals all of which require proper handling and storage to minimize nuisances on the surrounding environment.

Mitigating measures include:

- The farm premises should be kept clean and tidy at all times with good housekeeping.
- Proper handling, storage and disposal of manure, litter/bedding, dead animals and other materials.
- Manure should be stored in sheds with proper ventilation.

5.2.2 Sanitary nuisance (flies, rodents and pests)

Flies, rodents and pests are associated with manure, waste feed, animal droppings/litter, dead animals all of which require proper handling to minimize nuisances on the surrounding environment.

Mitigating measures include:

- The farm premises should be kept clean and tidy at all times with good housekeeping and husbandry practices.
- Proper handling, storage and disposal of manure, litter/bedding, carcasses and other materials.
- Frequent collection of manure/litter and storage of same under dry conditions in a dedicated covered and/or closed area, pending transportation offsite.
- Provision of wire nettings, traps, insecticides and pesticides to render the farm rodent and fly proof.
- Provision of a good drainage network to avoid water stagnation.

5.3 Wastewater Management

Wastewater from livestock farms arises from washing and cleaning of sheds. They may contain residual amount of droppings and waste feed. They therefore require proper handling and management to avoid impacts on the surrounding environment and any form of sanitary nuisances.

Mitigating measures include:

- Wastewater from washing and cleaning should be disposed of to the satisfaction of the Wastewater Management Authority (WMA).
- All solid waste matter/droppings shall be dry removed prior to washing and cleaning of sheds;
- Any sludge resulting from solid waste matter/droppings shall not be allowed to be carted away to the WMA's public sewers;
- All wash water from the washing and cleaning of sheds shall be channeled to a dedicated on-site wastewater absorption system.
- No wastewater should be discharged either on the surface of the ground or into any watercourse including rivers, canals and natural drains.

5.4 Health and Safety Aspects

Livestock are susceptible to diseases and necessary measures should be taken to reduce the incidence of disease.

Mitigating measures include:

- Farmers should hire the services of the Veterinary Services to ensure that the animal is in good health conditions.
- Workers should be aware of proper livestock care so as to avoid incidence of physical injury and disease.
- Workers should ensure the implementation of biosecurity measures with control of farm animals, equipment, personnel and wild or domestic animals entering the facility.
- Sick animals should be segregated with proper established management procedures.

5.5 Other mitigating measures

- Necessary precautions should be taken to avoid disturbance to the neighbourhood by way of odour, dust, and noise.
- Livestock farms should be properly designed to the satisfaction of the Food and Agricultural Research and Extension Institute and should not be visually intrusive to impact on the landscape.
- Necessary precautions should be taken to avoid overgrazing and loss of vegetative cover to prevent land degradation.
- Provision should be made for adequate parking, loading and unloading facilities.
- Materials should be safely stored such as not to be intrusive in the street scene.
- Necessary measures should be taken for the evacuation of surface run-off so as not to cause flooding/water-logging of the site and adjoining areas to the satisfaction of the Local Authority.

5.6 Eco-friendly measures and sustainability

Prospective farmers are advised to adopt best environment friendly practices such as rain water harvesting for cleaning and washing purposes as well as irrigation of grazing land, solar PV for lighting and use of ecofriendly detergents and biodegradable products.

Note:

- The design of sheds, the stock density and vaccination to be as per the recommendations of the Ministry of Agro Industry and Food Security.
- All issues pertaining to bio-security risks should be to the satisfaction of the Veterinary Services of the Ministry of Agro-Industry and Food Security.
- Any unusual deaths and/or disease outbreaks should be immediately reported to the Veterinary Services of the Ministry of Agro-Industry and Food Security.
- Relevant organizations need to be consulted including the Livestock Services of the M/Agro-Industry & Food Security with respect to any Land Conversion Permit

6.0 FARM MANAGEMENT AND GOOD HUSBANDRY PRACTICES

6.1 General conditions for ensuring biosecurity:

- The proponent shall adhere to animal health guidelines issued by the Division of Veterinary Services.
- The farm should be surrounded by a security fence to prevent the entry of unwanted animals and people. A sign indicating restricted entry should be posted at the entrance to the farm
- Presence of foot dips at gate

- No animal movement between farms without notifying the Ministry of Agro-Industry and Food Security (Animal Production Division)
- All farms to have a pest control programme in place (rodent and fly control) as well as measures to prevent contact with wild animals.
- Farms should be free from unwanted vegetation and debris that could attract or harbour pests

6.2 Hygiene and disease prevention

Measures aimed at preserving cleanliness, preventing pathogen build-up and breaking possible pathways of transmission are essential in the management of any modern farming enterprise, regardless of the species or the farming system.

Precautions should aim at:

- Reducing contact between healthy animals and potentially infected animals.
- Maintaining the hygiene and safety of all facilities.
- Ensuring the health of all workers on the farm and the implementation of hygienic working procedures.
- Taking all appropriate measures to prevent contamination by vehicles entering and traversing the property.
- Minimising contact between livestock and professional or other visitors, and taking all hygienic measures necessary to reduce the possible introduction of pathogens and contaminants.
- Ensuring overall health of livestock through good nutrition and reducing stress.
- Keeping records of animal populations in facilities/on farms.

6.3 Animal Health Management

Owners or managers of livestock should:

- Establish a working relationship with a veterinarian to ensure that animal health and welfare and disease notification issues are addressed.
- Seek veterinary assistance to immediately investigate any suspicion of serious disease.
- Comply with directives of the Division of Veterinary Services concerning restrictions on animal movements.
- Separate diseased from healthy animals such that transmission of infection does not occur and, where necessary, cull diseased animals.
- Acquire animals (especially breeding stock) only from sources with a known, safe health status, where possible with supporting health certificates from veterinarians.
- Keep records of all breeding stock, semen or embryos used on the premises, the animals upon which they were used, the breeding dates and outcomes.
- Keep newly arrived animals separate from resident stock for an appropriate period to monitor them for diseases and infestations in order to prevent transmission of such conditions.
- Ensure that, wherever necessary, newly arrived animals are given time to adapt to new feeding regimes, are not overcrowded, and that their health is regularly monitored.
- Ensure that equipment and instruments used in animal husbandry are suitably cleaned and disinfected between each use.
- Effectively remove or dispose of dead and fallen stock where possible so that other animals cannot come into contact with carcasses and that carcasses do not contaminate the pasture or drinking water, and keep records of all such disposals.

6.4 General conditions for ensuring optimum production

- The design of the farm (including layout and infrastructure) should be as per the guidelines of the FAREI and APD.
- The farm should include appropriate animal handling and securing facilities such as headgates and crutches to ensure safe handling of animals for effective veterinary treatments, microchipping and other operations.
- Space requirements varies with age, type and species of animals. As a general rule, stock density should not exceed 0.15 LU/m². This translates as follows:

Species/Type	Space requirements per animal (m ²)
Dairy cows	4.35
Goat and sheep	0.66

6.5 Animal feeding and watering

Owners or managers of livestock should:

- Acquire feed from suppliers who follow recognised good manufacturing practices.
- Manage the feed chain (transport, storage, and feeding) in such a way as to protect feed from contamination (biological, chemical, and physical hazards) and minimise deterioration. Feeds should be used as soon as possible and, if applicable, in accordance with label instructions.
- Ensure that only water of known and acceptable biological and mineralogical quality (i.e. fit for animal consumption) is used for watering stock.
- Where on-farm manufacture of feeds is practised, follow procedures designed to minimise contamination and prevent the inclusion of undesirable feed components. Where necessary, expert assistance should be sought.
- Ensure that nutritional levels are adequate to promote animal health, growth and production.
- Ensure that changes to feeding regimes are, wherever possible, gradual, and that the regimes are safe and follow acceptable feeding practices.
- Prevent animal access to places where feeds are stored and to places where hazardous chemicals are stored.
- Ensure that antibiotics are not used in feed for growth promoting purposes.
- Ensure that ruminant protein is not fed to ruminants.
- Where appropriate, manage pastures by stocking rate and rotation to maintain healthy and productive livestock and reduce parasite burdens. Keep records of pasture rotation and other on-farm animal movements between pens, sheds etc.
- Regularly inspect and, when necessary, clean and disinfect feeding and watering facilities such as drinkers and troughs.
- Ensure that effluents are managed in such a way that drinking water sources are not contaminated.
- Use herbicides and pesticides judiciously and according to the manufacturer's instructions and applicable legislation such that animal exposure to these chemicals is minimised.
- Ensure that animals are not kept in sheds, pens or pastures where they are likely to ingest foreign objects and that all facilities are kept clean and free from metal objects, pieces of wire, plastic bags, etc.

6.6 Animal Identification and Traceability

Animal identification and the ability to trace animals have become important tools to ensure food safety and improve management. Identification of animals may be on an individual or group basis, and connections between properties as a result of animal movements should be able to be deduced from good record keeping and animal identification. Where a food safety incident occurs, it should be possible to determine the source of the problem and to take appropriate action. The ability to trace animals at least one step forward and one step back from the current holding is recommended.

Animal owners should:

- Inform the Animal Production Division of the Ministry of Agro-Industry and Food Security the:
 - (i) Farmer name (with copy of ID card)
 - (ii) Farm location (complete address)
 - (iii) the date at which the farm proposes to start its operations
 - (iv) the proposed number of animals that shall be on site.
- Inform the Animal Production Division of animal movements (births, deaths, sales, transfers).

6.7 Training with the Food and Agricultural Research and Extension Institute (FAREI)

The farmer shall be in the presence of a training certificate on ruminant production and rearing from the FAREI in order to ensure that he is able to grasp the importance of good animal husbandry practices.

Copies of this guideline are available at the Department of Environment and on the website of the Ministry at <http://environment.govmu.org>; the government's portal at <http://www.govmu.org>, including the websites of Local Authorities.