Sub-sectoral Environmental and Social Guideline: Livestock Farming

Introduction

This guideline is designed to be used by EBRD Financial Intermediaries (FIs) to understand the nature of environmental and social (E&S) risks associated with existing operations in this sector and suggested actions for businesses to manage these E&S risks. It also provides guidance for FIs on potential due diligence questions to discuss with management to understand how their business is managing these E&S risks. This guideline focuses on material E&S risks; it is not an exhaustive list of E&S risks. In managing E&S risks, all businesses should be compliant with relevant E&S laws and regulations.[1] Where applicable, this includes European Union legislation, which may also be taken as a benchmark for good practice.

This guideline covers Livestock farming operations which include agricultural facilities for the breeding of livestock, their managed weight gain prior to resale or slaughter and the production of by-products from animals, such as milk.

Reference NACE codes:

- 1.4 Animal products
    - 1.41 Raising of dairy cattle
    - 1.42 Raising of other cattle and buffaloes
    - 1.43 Raising of horses and other equines
    - 1.44 Raising of camels and camelids
    - 1.45 Raising of sheep and goats
    - 1.47 Raising of swine/pigs

Material risks

Below is an overview of livestock farming

[1]This guideline outlines some relevant legislation but does not provide an exhaustive list of applicable laws and regulations.

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E&S Risk Category	Environment 	Health and safety 	Labour 	Community 	Page no.
Key E&S Risks[2] *(In order of materiality)*	Affect the natural environment	Affect the health or safety of employees	Affect workplace conditions and the treatment of employees	Affect the health and safety, livelihoods, and environment of the community and wider public	
Industrial Emissions	√	√		√	**5**
Contamination of Soil, Surface Water & Groundwater	√			√	**6**
Waste (including Storage & Spreading of Farm Wastes)	√	√		√	**7**
Wastewater	√			√	**8**
Hazardous Materials	√	√		√	**9**
Water Use	√			√	**9**
Animal Welfare	√				**10**
Spread of Disease and Biosecurity	√	√		√	**10**
Pesticide Resistance and Bioaccumulation	√	√		√	**11**
Food Safety				√	**11**
Air Emissions	√	√		√	**12**
Odour	√	√	√	√	**12**
Energy Use	√				**13**
Biodiversity	√				**13**

[2] Note: this table provides an indicative list of the EHS risks associated with the sub-sector; it is not meant to be an exhaustive list and EHS risks will depend on the specific setting and scale of the operation or facility.

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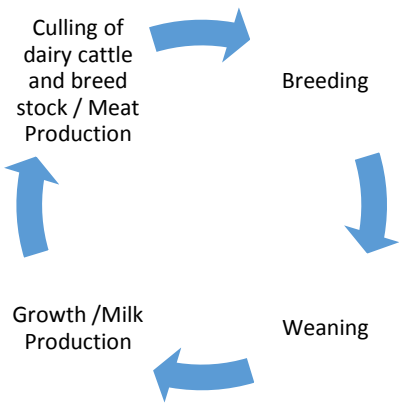
1. Process description

This guideline covers agricultural facilities for the breeding of livestock, their managed weight gain prior to resale or slaughter and the production of by-products from animals, such as milk.

Livestock covered by this guideline are those raised in an agricultural setting to produce commodities, such as food, namely: beef cattle, dairy cattle, sheep and pigs. Whilst the processes involved in raising different types of livestock for different purposes do vary the typical livestock production cycle is indicated in Figure 1.

Figure 1: Indicative Livestock Farming Production Cycle[3]



Livestock farming facilities generally include a main production area (e.g. for watering, milking and animal welfare etc.), agricultural land (e.g. for grazing, fodder/crop production etc.) and ancillary buildings and storage areas.

Livestock farming comprises the following key activities:

- Breeding;
- Feeding and watering;
- Feed storage and handling;
- Livestock housing;
- Management of animal and other wastes;
- Pest control;
- Disease control;
- Animal welfare activities.

For Poultry Farming, Animal Feed and Agricultural Crop Production, please refer to other guidelines.

2. Key E&S Risks

Industrial emissions

Some livestock farming operations may require environmental permits under national regulatory requirements. Certain large-scale intensive operations, such as the intensive rearing of pigs, operating in the EU may be required to hold an environmental permit under the Industrial Emissions Directive (IED) (2010/75/EU). The IED regulates the standards that apply to airborne emissions as

[3] Based on Figure A.1: Mammalian Livestock Production Cycle: EHS Guidelines: Mammalian Livestock Production; IFC (April 20, 2007)-

well as discharges to land and water resulting from industrial operations.

Best Available Techniques Reference Documents (BREFs) are the supporting documents for the IED containing the best available techniques and technologies (BAT) for different sectors, including livestock farming.

How can a business manage this risk?

- Comply with BREF for 'intensive' facilities failing under the IED. Facilities that do not fall under the 'intensive' definition in the IED guidance do not have to comply with BREF but should follow this guideline and the BREF requirements.

Contamination of Soil, Surface Water & Groundwater

Livestock farming processes produce a large volume of waste, including animal wastes (e.g. slurry and manures), waste milk, animal carcasses, agricultural fuels and oils, and agrochemical wastes. There is a risk of chemical and organic wastes entering and polluting soil and water resources from livestock farming activities, including from:

- Insufficient treatment of waste before discharge /spreading on land;
- Direct run-off;
- Infiltration from unlined slurry/waste storage areas;
- Spillages and accidental releases.

Chemical and organic fertilisers and pesticides are applied to fields, including manure, to enhance the production of crops, including ones for animal feed, and to restore soils following nutrient depletion. Excessive application of fertilisers and pesticides can lead to a build-up of salts in the soil, and may lead to the contamination of water supplies through leaching and run-off.

The application of agrochemicals (e.g. fertilisers) and inappropriate disposal of related wastes poses potential nuisance risks, community health and safety hazards, and third party liability issues.

Disposal of empty drums and packaging of agrochemicals may also pose a contamination risk.

Accidental releases and spillages of agrochemicals and agricultural fuel oils may also pose a contamination risk to soil and water resources.

Operations where pollution has occurred, or there is a threat of it occurring to water resources, land and protected species and habitats may be liable under national legislation and EU legislation for preventing and remedying environmental damage.

In the EU, the Environmental Liability Directive (ELD) (2004/35/EC) established a framework of environmental liability, based on the "polluter-pays" principle, to prevent and remedy environmental damage.

Fertiliser run-off contains compounds of nitrogen and phosphorus that may cause nutrient enrichment of surface waters, resulting in excess growth of algae, which may in turn lead to eutrophication and adverse impacts on watercourses, marine plants and aquatic organisms, such as fish.

How can a business manage this risk?

- Implement appropriate containment and storage systems for hazardous materials and waste (including animal waste and effluent);
- Construct and manage livestock farming production and waste storage facilities to prevent contamination to soil, surface and groundwater;
- Locate waste facilities away from surface water resources, floodplains, other sensitive habitats and residential areas;
- Monitor hazardous materials held on site and implement clear procedures for their handling and treatment in the event of spillage;
- Provide secondary containment for bulk fuel oil and chemical storage areas to contain spills;
- Establish buffer zones to surface water bodies where certain activities are avoided, such as the landspreading of manure;
- Integrate pesticide and nutrient management and monitoring techniques to reduce over-application and ensure appropriate use;
- Maintain emergency response and preparedness plans for pollution incidents which could result in community H&S safety issues

Waste (including Storage & Spreading of Farm Wastes)

Typical wastes may include animal waste (liquid, slurry and manure), waste milk, animal carcasses, agricultural fuel oils and waste oil, and agrochemicals (including used dips, pesticides etc.).

Other wastes that may be produced include scrap vehicles, machinery and materials and packaging wastes such as plastics.

The status of wastes should be confirmed or considered under the EU Waste Framework Directive (2008/98/EC), the European Waste Catalogue and/or national waste regulations.

Animal wastes/manure etc. contain nitrogen, phosphorous and other substances which may result in emissions of ammonia and other gases and may pose a potential risk of contamination to surface and ground water through leaching and run-off. Animal waste also contains bacteria, pathogens, viruses, parasites etc. which may potentially affect soil, water and plant resources for human, livestock or wildlife consumption.

Hazardous farm waste can cause serious harm to people's health and to the environment; EU and other national regulations specify strict controls over the movement, recovery and disposal of hazardous of farm wastes.

Animal carcasses present risks of the spread of disease, odours and attraction of vectors. There are strict requirements for the storage, removal and disposal of animal carcasses within the EU and generally within national regulations to limit such risks.

Some farms operate on-site waste dumps and undertake the landspreading of certain farm wastes. On-site waste dumps may be located along the edge of fields or along the farm boundary, and may be on land that is difficult to farm. Unlined on-site waste dumps may cause localised pollution.

Where farms have operated waste schemes on a commercial basis for a number of years, more widespread contamination may result. On-site storage and/or disposal of wastes and transporting of waste may require licensing and the use of licensed companies in certain instances.

Spreading slurry and manure at the right time helps to maximise the efficient use of valuable nutrients. However spreading may present pollution and health risks if not done correctly. There are legal requirements and voluntary

codes of good agricultural practice for the spreading and storage of slurry and manure.

Slurry and manure may contain micro-organisms which cause food-borne illness, such as Salmonella, Listeria, E. coli etc. Careful application, timing and storage of slurry and manure to avoid contamination of food crops may be required.

Sewage sludge, a by-product of wastewater treatment, is also used as an alternative soil-building material and fertiliser. Sewage sludge may contain heavy metals which can be harmful to health and animals if it is not used correctly.

How can a business manage this risk?

- Waste should be stored in adequate containers and segregated, including wasted feed and animal waste/manure production;
- Use animal waste (i.e. manure etc.) as fertiliser on agricultural land after careful assessment of chemical and biological contamination. Careful management of livestock manures can reduce losses of ammonia and other emissions, limit nitrate leaching to groundwater, avoid excessive build-up of nutrient and contaminants in soil and stop micro-organisms (such as Salmonellae etc.) being washed into surface waters;
- Implement voluntary codes of good agricultural practice for the spreading and storage of slurry or solid manure;
- Test animal waste to be used as a fertiliser for chemical and biological contaminants;
- Match feed to the specific nutritional requirements of the livestock in their different development stages;
- Use anaerobic digestion of animal waste to generate biogas fuel that can be used as a source of electricity;
- Implement appropriate containment and storage systems for hazardous materials and waste (including animal waste and effluent);
- Locate waste facilities away from surface water resources, floodplains, other sensitive habitats and residential areas;
- Remove and dispose of animal carcasses in line with legal requirement and in order to prevent the spread of disease and odours;
- Observe internationally-recognised guidance[4] on land requirements for livestock production per hectare to ensure an appropriate amount of land for manure deposition;
- Establish buffer zones to surface water bodies where certain activities are avoided, such as the landspreading of manure;
- Implement best practice procedures for hygiene following exposure to animal wastes;
- Ensure security of waste, chemical and product storage areas to prevent misuse by third parties or damage to property.

Wastewater

Livestock farming may produce large quantities of wastewater contaminated with high concentrations of organic wastes. Wastewaters may be sent to soakaway, spread on land, discharged to surface watercourse, or to sewers. Large-scale livestock farming units may have, or be required to have, wastewater treatment facilities. Discharge of wastewaters will often require permit and charges.

How can a business manage this risk?

- Install/improve wastewater/effluent monitoring, collection and treatment facilities;
- Install filters to collect sediment/debris before

[4] e.g. such as that published by DEFRA and the FAO etc.

wastewater discharge;
- Install diversion drains to direct surface water runoff away from waste areas.

Hazardous Materials

Some chemicals, fuels and oils are utilised in livestock farming operations. Typical storage facilities include bulk storage agricultural fuel tanks (above and below ground) and drums of assorted pesticides, disinfectants etc.

The use and storage of chemicals, fuels and oils can lead to spillages from poor handling practices and leakages. This may lead to the localised contamination of soils, or more, diffuse widespread contamination of groundwater.

Accidental exposure by workers to hazardous substances (e.g. pesticides, herbicides, fertilisers etc.) can result in dermal contact and inhalation. Contact can lead to burns or inflammation of skin or allergy. Inhalation can lead to respiratory difficulties.

How can a business manage this risk?

- Maintain storage areas to ensure that they are organised, secure, clean and dry. Storage arrangements should be reviewed on a regular basis to ensure that leaks do not occur;
- Record all hazardous materials held on site in an inventory with Materials Safety Data Sheets (MSDSs) available in the appropriate language; procedures should be prepared for their handling and treatment in the event of spillage;
- Conduct regular inspection of all bulk containment facilities and effluent holding tanks to ensure integrity of storage;
- Provide personal protective equipment (PPE) that is fit for the task to prevent injury and maintain hygiene standards;
- Train staff in the correct selection, use and maintenance of PPE. Inspect PPE regularly and maintain or replace as necessary.
- Ensure security of chemical and product storage areas to prevent misuse by third parties or damage to property.

Water Use

An adequate supply of water is required for watering livestock, washing down, milking etc. and for fodder crop production. Water may be taken from surface or ground water resources. Permits and charges may be required for abstraction and discharges to water resources.

Discharges and abstraction from water resources should be considered under the requirements within the EU Water Framework Directive (2000/60/EC) and local environmental regulations and permitting requirements.

Agricultural water consumption is often in competition with community and industrial water requirements, and during periods of water shortage this may cause local/regional issues.

If pesticides or nutrients in the farm run-off infiltrate the drinking water supplies used by nearby communities, there could be significant adverse effects on the health of the local communities using the contaminated water supplies.

How can a business manage this risk?

- Evaluate water supply and water efficiency measures (e.g. recycling, reuse, run-off reduction, storage etc.) to reduce impacts on surrounding

resources and community supplies;
- Review socio-economic baseline conditions to identify local, community-based agricultural enterprises and/or use of water resources and to assess any impacts on these;
- Engage with the local community and other interested and/or affected stakeholders to maintain good social relations and enable concerns regarding impacts on water supplies to be identified and responded to.[5]

Animal Welfare

Welfare issues associated with livestock farming are becoming of increasing legal, financial and reputational risk relevance. Owners and keepers of livestock are responsible for ensuring that the welfare needs of their animals are met. There are EU legal requirements and minimum welfare standards in place for livestock and national requirements and codes of practice within many jurisdictions, and may include requirements related to:

- Housing capacity and hygiene standards;
- Diet of animals, especially where medicines or hormones are used;
- Method of transport;
- Behavioural requirements of animals; and
- Protection from pain, injury, suffering and disease.

How can a business manage this risk?

- Improve housing of livestock to meet the animal welfare legal and industry standards;
- Match feed to the specific nutritional requirements of the livestock in their different development stages;
- Observe internationally recognised guidance[6] on land requirements for livestock production per hectare;
- Train workers in livestock care and handling to reduce incidences of bites, kicks etc.;
- Use a veterinary service on an annual or more frequent basis to review and assess the health of livestock and company systems and worker competence and training to management health risks.

Spread of Disease and Biosecurity

The livestock farming product may become contaminated with pesticides, growth hormones, other chemicals and pathogens that affect its quality. These include Mad Cow Disease (Bovine Spongiform Encephalitis), foot and mouth disease, African Swine Fever or Avian Influenza.

The spread of disease can result in the termination of large quantities of animals and significant economic loss. Disposal of contaminated animal carcasses can also add to surface and ground water contamination and human health risks.

[5] e.g. excessive nitrate levels have been known to cause potentially fatal conditions for infants under six months in age.

[6] e.g. such as that published by DEFRA and the FAO etc.

It is likely that those working within the livestock farming sector will come into contact with animal body fluid and wastes. Exposure to animal body fluids and wastes can cause common occupational infections, such as Bovine Tuberculosis and Q Fever. Exposure to animals waste can cause Viral Gastroenteritis, Salmonellosis, Leptospirosis and Toxocariasis amongst other diseases. Close contact with infected poultry may also cause infection with Avian Influenza.

Workers and local residents may be exposed to infectious diseases carried by livestock. Disease may be spread by close contact, between animals or animal wastes and humans. Some diseases can be spread via water.

How can a business manage this risk?

- Implement hygiene and disease control and prevention methods, (e.g. controls on animals (livestock, wild and domestic), equipment, vehicles, workers etc. entering the facility; clean animal housing; identification and segregation of sick animal);
- Remove and dispose animal carcasses in line with legal requirement and in order to prevent the spread of disease and odours;
- Train workers in the risks of exposure to diseases from livestock farming and the mitigation of these risks;
- Provide and use Personal Protective Equipment, as appropriate and identified in risk assessments, to protect employees from identified health & safety risks, including PPE suitable to protect staff from pathogens and other animal diseases;
- Implement best practice procedures for hygiene following exposure to animal wastes;
- Provide washing and cleaning facilities for employees;
- Maintain emergency response and preparedness plans for outbreaks of diseases and community H&S safety incidents.

Pesticide Resistance and Bioaccumulation

Pesticides may be applied to livestock directly, in the farming facilities and to control pests using sprays and dipping vats etc. Pesticides are potential pollutants with potential environmental and health impacts.

Over-application of pesticides, herbicides and insecticides to may lead to a build-up of pest resistance. This can lead to a greater reliance on pesticides.

Toxic pesticides which biodegrade slowly, can accumulate in body tissues and be harmful to ecosystems and potentially to human health. Pesticides may enter agricultural products, including fodder crops, ground and surface water and the human body via the food chain.

How can a business manage this risk?

- Integrate pesticide and nutrient management and monitoring techniques to reduce over-application and ensure appropriate use;
- Implement pest control measures, including good housekeeping;
- Observe internationally recognised guidance and codes of practice and legislative requirements in relation to the proper use of pesticides related to livestock farming.

Food Safety

Micro-organisms can be present in slurry and manure which can be harmful to health (e.g. Salmonella, E. Coli; etc.). One route of potential infection of humans may be the

consumption of meat, water or food contaminated by such animal waste.

Risks of veterinary drug and pesticide use and residues (e.g. the routine treatment of livestock with antibiotics can result in antibiotic-resistant organisms in the intestinal tract of treated animals etc.) in animal wastes, dairy and meat products may present risks to community, health and safety.

How can a business manage this risk?

- Use a veterinary service on an annual or more frequent basis to review and assess the health of livestock and company systems and worker competence and training to management health risks;
- Observe internationally recognised guidance and codes of practice and legislative requirements in relation to food safety and the proper use of veterinary drugs, record keeping, and pesticides related to livestock farming.

Air Emissions

Dust and particulate emissions can be a factor from livestock farming processes, such as pig housing, milk drying and the transfer of materials etc. Emissions may also arise from refrigeration, cooling or effluent treatment systems at farms.

Inhalation can lead to respiratory difficulties.

These air emissions may also result in nuisance impacts to local communities.

Methane is produced by cattle and sheep, and is also released in smaller amounts from livestock manures. Methane is a powerful Greenhouse Gas.

How can a business manage this risk?

- Site facilities (during design) and where possible to avoid sensitive receptors (residents, schools, hospitals, agricultural land etc.);
- Avoid on-site burning that may give rise to greenhouse gases, odour or air quality nuisance complaints or could present fire risks;
- Install chimneys and vents at sufficient height and appropriate positions to avoid causing a local nuisance;
- Implement measures to reduce dust generation, such as preventing overgrazing of pastureland;
- Control dust maintaining a sufficient level of humidity in pens and yards; minimise surface areas with exposed soil and by planting hedges or erecting fences to minimise wind turbulence;
- Improve ventilation within buildings;
- Provide Respiratory Protective Equipment (RPE) as a last resort after other abatement options are considered; regularly check and maintain PPE;
- Improve productivity and fertility of livestock and modify the diets of livestock to reduce methane production.

Odour

Offensive odours may be produced from livestock farming. Odour intensity is dependent on the size and type of operation, the type of buildings and ventilation, feeding cycles, and animal waste disposal etc. The impact depends on proximity to local residents/communities and other sensitive receptors, and the nature of the local topography and prevalent weather conditions.

Ammonia has significant impacts on the environment, causes odour nuisance and can result in damage to land and water ecosystems

by the deposition of nitrogen and through soil acidification.

How can a business manage this risk?

- Adopt odour management measures to prevent and minimise odour nuisance to communities;
- Adopt good cleaning and working practices as routine to reduce odour emissions and improve hygiene standards;
- Upgrade exhaust and ventilation systems;
- Locate waste storage areas away from local communities and residential properties.

Energy Use

Livestock farming may be an intensive user of energy. Energy usage has a direct impact on operating costs and in some countries taxes and levies may be applied to reduce energy usage and associated emissions of carbon dioxide.

Manufactured fertilisers are a large source of carbon dioxide associated with agriculture.

How can a business manage this risk?

- Reduce CO_2 emissions by regular servicing of engines; select appropriate tractors/vehicles; maintain the efficiency of equipment; reduce heat loss from buildings; maintain boilers/burners; use alternative energy sources (e.g. solar power, heat pumps, biogas from manure digestion etc.) ; use fertiliser efficiently etc.

Biodiversity

Large-scale livestock farming can result in habitat loss, impacts on ecosystems and reduce biodiversity due to land clearance, the use of agrochemicals/pesticides etc., degradation of soil quality through intensive farming practices, including from grazing and stocking densities etc., and disturbance to surrounding areas.

Some habitat may be particularly sensitive to nitrogen deposition from ammonia.

Land clearance may cause damage to sensitive areas or areas protected by legislation, such as areas of high ecological value, or archaeological and historic interest.

How can a business manage this risk?

- Observe internationally-recognised guidance[7] on land requirements for livestock production per hectare;
- Protect areas of high ecological value or areas protected by state/local authorities through avoidance, demarcation, offset etc.;
- Establish buffer zones to sensitive habitat areas and surface water bodies where certain activities are avoided, such as the landspreading of manure.

[7] e.g. such as that published by DEFRA and the FAO etc.

Release of Genetically Modified Organisms (GMO) to the Environment

A genetically modified organism (GMO) is an organism whose genetic material has been altered artificially (i.e. by genetic engineering). GMOs used in agriculture may include seeds, animal feed, fertilisers and pesticides. Crops, food or animal feed which contain GMOs, or are produced from GMOs, are called genetically modified (GM).

GMOs are highly regulated in the EU, and may not be used or released into the environment without approval by the competent authorities. In areas which have been declared as GMO free, GMOs may not be used.

Where the use of GM animal feed is proposed and/or is used it should be confirmed it has the relevant competent authority approval and/or a risk assessment may need to be conducted in line with the EU's substantive requirements.

How can a business manage this risk?

- Adhere to all regulations regarding GMOs;
- Minimise risk of off-site impacts through careful handling and field boundary management;
- Restrict GMO activities to authorised areas only.

Lone Working

Farm workers may undertake lone working activities, which increase the H&S hazards.

How can a business manage this risk?

- Implement OHS management procedures including risk assessments for lone working and first aid provisions;
- Conduct relevant training of workers in lone working;
- Implement frequent communications procedures (e.g. call-ins to another designated person who undertakes checks if lone worker misses call in) and provide necessary communications equipment;
- Provide and use Personal Protective Equipment, as appropriate and identified in risk assessments, to protect employees from identified health & safety risks.

Temperature Exposure

Most livestock farming is conducted outside or in non-heated buildings; with workers subject to hazards associated with both hot and cold weather working.

How can a business manage this risk?

- Restrict times for people being in very cold or very hot areas.
- Provide and use Personal Protective Equipment, as appropriate and identified in risk assessments, to protect employees from identified health & safety risks, including PPE suitable to protect staff from extreme temperatures (i.e. from working outside and in unheated facilities);
- Train workers in the correct selection, maintenance and use of PPE;
- Implement and monitor worker rest breaks procedures.

Injuries from Livestock

Handling any large animal inevitably involves a risk to the handler of injury from crushing, kicking or butting. The risk increases where the work involves animals that have not been handled frequently.

Livestock can cause damage and risks to safety if they escape from agricultural facilities (e.g. collisions with vehicles on roads, injuring people etc.) and when livestock are in fields with public rights of way they may interact with people.

How can a business manage this risk?

- Install escape routes in livestock handling areas;
- Train workers in livestock care and handling to reduce incidences of bites, kicks etc.;
- Install correct guarding to protect workers from being trapped within groups of animals/equipment;
- Secure livestock and check fencing to prevent the escape of livestock;
- Install appropriate signage warning users of public rights of way through areas where livestock are housed and/or graze;
- Separate people from animals and vehicles where practicable to ensure the safety of workers, the community and the public.

Traffic Management

Moving vehicles, plant and equipment are core operations of most farms. Accidents involving vehicles and farm machinery within and outside the farm on access roads are a common occurrence and a risk to farm workers, the local community and third parties.

The use of public highways by farm vehicles and transport vehicles can cause congestion and community safety risks. Deposition of mud on public roads can increase the risk of accidents. Public rights of way may cross agricultural land where heavy machinery is used and/or livestock graze, posing potential for accidents/incidents.

How can a business manage this risk?

- Maintain accident records and ensure that all drivers are licensed, and vehicles regularly inspected and maintained;
- Train drivers to properly operate the machinery and equipment;
- Fit vehicles with rollover protective structures;
- Implement procedures for maintenance and operation of mechanical machinery and vehicles around other workers.

Noise

Some farming activities generate noise (e.g. tractors, slaughtering equipment and large quantities of animals in close proximity to each other) and can result in hearing impacts and loss to those exposed to the noise.

Noise derived from feeding, housing or slaughtering animals may cause a nuisance to local residents. In addition, noise may be generated by machinery.

How can a business manage this risk?

- Isolate noisy equipment to reduce the risk of noise exposure;
- Rotate tasks to minimise worker's time spent in noisy areas over an eight hour period;
- Provide personal protective equipment where workers and visitors have to enter noisy areas;
- Enclose noisy machinery and animals to isolate people from noise where practicable.

Slips, Trips and Falls

Slips trips and falls are regular occurrences in farming environments and result in many

injuries. Typically these are because of uneven ground and poor housekeeping.

How can a business manage this risk?

- Keep walking and working surfaces clean and dry as far as possible and provide workers with anti-slip footwear;
- Regularly clean yard/working areas (e.g. scraping yards etc.);
- Restrict access to areas being cleaned or where spillages have occurred.

Manual Handling

Many injuries from farming are associated with handling, lifting and carrying of heavy or unconventional shaped objects.

How can a business manage this risk?

- Install mechanical lifting aids where possible and rotate work tasks to reduce repetitive activities;
- Appropriate training is required.

Asbestos

Asbestos has been used on a large scale for many years as fire proofing and insulation material and may be encountered in a wide range of forms including asbestos cement boards, as fire retardant gaskets in pipe work and as fire retardant insulation around boilers and furnaces.

How can a business manage this risk?

- Particular attention should be paid to farm buildings constructed prior to the 1990's;
- Conduct/commission an asbestos survey (by qualified personnel);
- If asbestos exists, establish an asbestos management plan.

Labour & Working Conditions

Livestock farming operations may use casual and contract labour. In some settings and situations, casual labourers are not given the same treatment or working conditions as permanent employees.

How can a business manage this risk?

- Ensure that labour standards, contracting and remuneration are in line with national law and are consistent with the average for the sector and apply to permanent employees and casual and contract labour;
- Undertake checks on workers right to work (including work permits, age etc.);
- Undertake checks on treatment of subcontractor labour.

Child Labour

Child labour is a prevalent risk in agricultural operations, including in livestock farming in certain countries. Sometimes family related domestic chores are carried out by children, which may not necessarily be classed as Child Labour on the smaller family run operations.

Children are particularly vulnerable to on-farm hazards due to lack of experience and

knowledge, especially in relation to farm vehicles and machinery.

How can a business manage this risk?

- Undertake checks on worker's age and prohibit any employment under the minimum age as stipulated by the International Labour organization (ILO) or national legislation (whichever is more stringent);
- Adopt clear policies for recruitment consistent with international good practice for the prevention of child labour in agricultural (e.g. from the ILO);
- Where children are on-farm health and safety provisions need particular attention to protect them from hazards.

Worker Accommodation

Worker accommodation on livestock farming operations may be provided.

How can a business manage this risk?

- Provide worker accommodation which meets, at a minimum, basic needs of workers, national legislation and industry good practice (e.g. see guidance note from IFC & EBRD[8]).

3. Financial implications

Potential financial implications from the environmental, OHS and social risks and liabilities identified in the previous section are wide ranging and may include:

- Capital and operational investments to obtain and maintain industrial emissions permits and, where applicable, achieve compliance with Best Available Techniques (BAT);
- Capital and operational investments to prevent and minimise the risk of contamination of soil, surface water and groundwater resources from livestock farming waste;
- Potential clean-up, legal (including fines) and compensation costs for soil, surface and groundwater contamination arising from the pollution caused by livestock farming, e.g. from waste/effluent storage and discharge, and from the use and storage of agrochemicals;
- Fines/legal challenges for contamination and/or damage to sensitive habitats and ecosystems from livestock farming;
- Capital expenditure for cleaning up contamination from old/poor waste facilities (e.g. unlined waste lagoons);
- Capital expenditure for installing or upgrading water storage provisions and water conservation/recycling systems;
- Capital expenditure for installing or upgrading wastewater and waste treatment facilities;
- Capital expenditure for installing or upgrading storage facilities for chemicals, fuels and oils;
- Animal feed and/or livestock farming products contamination may result in

8 http://www.ebrd.com/downloads/about/history/workers.pdf

restrictions on price and demand, and export markets (e.g. EU);

- Capital expenditure from installing or upgrading animal housing and animal transport facilities;

- Spread of animal borne diseases may affect production capabilities and may cause food safety product liability issues limiting saleability and damaging brand and reputation. A food product recall caused by contaminated or adulterated food products can damage a viable business;

- Odour migration may cause nuisance to neighbouring properties and result in nuisance complaints, fines and reputational damage;

- Inadequate health and safety provisions (including risk assessments, training, infection control and provision of Personal Protective Equipment (PPE) etc.) for workers (permanent, temporary and/or casual) may lead to absenteeism, health care costs or health and safety incidents and claims;

- Nuisances from livestock farming operations, including from the spreading of organic manure, may lead to compensation claims from neighbouring properties;

- Community health and safety impacts from livestock farming (e.g. exposure to contaminated drinking water and/or living in proximity to infectious diseases) may lead to reputation damage, legal challenges/prosecutions and/or compensation claims;

- Reputation damage resulting in financial implications to operation and/or investors from poor working conditions, worker accommodation and/or child labour issues.

4. Suggested due diligence questions

During the initial site visit, the issues will vary according to the size of operation, the type of livestock, and depend on the level of environment, health & safety management already introduced.

Perform a complete tour of the facility, accompanied by someone knowledgeable about all the activities at the farm.

Make sure high-risk areas of the farm are visited, including waste dumps (planned, existing and unused/redundant etc.). When assessing E&S risks, it is important to engage the customer on how these risks are managed. Below are suggested questions to discuss with management, as relevant to the business.

Confirm organisational responsibilities and systems for environment, health, safety and social matters and that these systems cover both employees employed directly and sub-contractors.

General Housekeeping

- Look for signs of bad housekeeping (e.g. open fertiliser/pesticide stocks near to drains, unsecure chemical storage area and no secondary containment, untidy and unmanaged waste dumping and/or storage, etc.), inadequate hygiene and infection control precautions (e.g. rodents, flies, stock cleanliness and skin diseases etc.) and inadequate animal welfare (e.g. poor and insufficient animal housing, badly maintained yards which standing dirty water/slurry etc.).

Animal Welfare

- Check animal housing conditions and welfare standards;
- Check livestock densities versus mortality rates and how they compare to the industry average for the sector;
- Find out the frequency of veterinary inspections and examine vaccination certificates for animals on the farm and in the supply chain.

Emissions and Discharges

- Check wastewater discharges, including for signs of pollution in watercourses and condition of receiving water;
- Note any excessive odours that may cause a nuisance and the proximity to nearest residential areas and prevailing wind direction.

Pollution and Contamination

- Check for signs of pollution in watercourses (e.g. algae growth) and colour of water;
- Look for localised spills, leaking pipes etc.; check whether fuel storage tanks are tested regularly for leakages;
- Note the location and condition of any product storage areas (e.g. tanks, refrigerators);
- Review the history of the site and the area, particularly any previous industrial use, in order to assess the likelihood of historical soil and groundwater contamination;
- Note if the facility is next to or in the vicinity of any industries which may pollute groundwater used in the livestock farming process.

Inspections, Permitting and Regulations

- Note/enquire about communications from/with the relevant local regulators regarding non-compliance/fines and/or warning letters;
- Check environmental permits/licenses, waste discharges and water abstraction permits, plus any necessary veterinary certificates. Note any fines/fees against the site;
- Has the company undertaken a systematic, documented review of operations against national legal requirements relevant to Environmental, Health, Safety and Social performance and the extent of compliance with that legislation?
- Find out whether there have been any fatalities/significant environmental health & safety incident. Note any complaints made by customers, general public and/or employees directly to the site and/or to the relevant local regulators;
- Is the facility subject to any audits by customers? What was the outcome of these audits?

Waste Management

- Note nature and location of solid waste and wastewater storage and disposal;

Food Safety

- Review procedures for food safety programmes (e.g. quality assurance testing);

Health and Safety

- Check health and safety training and PPE for workers (permanent, contract and casual), visitors and residents on-farm (including children);
- Assess the level of health and safety awareness at the farm, for example the presence of safety notices and the general appearance of the site;
- Find out what insurances are in place (health, hygiene, fire etc.);
- Assess emergency procedures to respond to fires, pollutant spillages etc.

Labour Management

- Check that labour standards, contracting and remuneration are in line with national law and are consistent with the average for the sector;
- Ask particularly about the working hours, pay and conditions regarding casual and contract labour, and check what health and safety provisions (e.g. PPE) are provided for them; are these comparable with permanent employees? This is a particular issue in the agribusiness sector;
- Has the Company received inspections from the local labour, H&S or environmental inspectorate in the previous three years? Have these resulted in any penalties, fines, major recommendations or corrective action plans? What is the status of these?
- Check worker accommodation;
- Does the organisation have a grievance mechanism which allows employees to raise workplace concerns?
- Is a grievance mechanism in place to allow the community to raise concerns regarding farming operations?
- Are employees free to form, or join, a worker's organisation of their choosing?

Investment

- Does the business plan have budgeted line items for environment, health and safety improvements? Are there any high value improvements noted in the business plan for E,H and S issues in the coming months/years?

Management Plans

Review the operational procedures and management plans available for the control of risks.

As a minimum, any business should be required to have the following in place:

- Environmental, Health & Safety management systems which include operational procedures that are communicated, implemented and regularly reviewed (i.e. "live" systems that are used in practice, not just kept as an office manual);
- Operational procedures to manage environmental, health & safety risks relating to, among others:
  - Animal welfare arrangements;
  - Disposal methods for sick or dead animals;
  - Solid waste management;
  - Liquid waste management;

  - Animal by-product usage;
  - Air emissions and odour control;
  - Hazardous materials management;
  - Occupational hygiene.
- Monitoring and testing programmes (water, air, noise etc.);
- Improvement objectives, targets and project plans;
- A training plan for personnel to include animal welfare, environmental and health and safety issues;
- Regular inspections, checks and audits against records to demonstrate achievement of the required level of performance against legal requirements and improvement actions;
- Emergency plans for environment, health and safety incidents and site security;
- Demonstrable involvement of senior management in environment, health & safety management and leadership.

5. References and additional sources

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