

Environment
Assessment
Services

**Sub-sectoral Environmental
Guidelines and Checklists on Dairy
Farms and Slaughter Houses**

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IUCN
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Programme

BEPA
Balochistan Environmental Protection Agency

IUCN
The World Conservation Union

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Sub-sectoral Environmental Guidelines and Checklists on Dairy Farms and Slaughter Houses

1. Introduction

IUCN Pakistan was asked to develop Sub-sectoral Environmental Assessment Guidelines for small initiatives in different sectors by the Balochistan Environmental Protection Agency (BEPA). The guidelines were meant to address projects that do not qualify for an Initial Environmental Examination (IEE) or an Environmental Impact Assessment (EIA), according to the screening guidelines (Schedules A, B and C) of the IEE/ EIA rules of the Pakistan Environmental Protection Act of 1997 (PEPA'97). The Balochistan Environmental Protection Agency (BEPA) and relevant line departments will use these guidelines to make smaller initiatives in the region more environment-friendly. A series of checklists to complement the guidelines are also included.

2. Background

The Pakistan Environmental Protection Act of 1997 (PEPA'97) requires that an IEE or EIA be conducted of any development project that is likely to have adverse impacts on the environment. As a result, IEE/EIA rules and regulations, guidelines and screening criteria were developed.

However, these rules and regulations primarily govern larger initiatives, and do not address smaller ones that also have the potential to adversely affect the environment. In addition, several development initiatives undertaken in Balochistan are small in scale and do not qualify for an IEE or EIA under the established screening criteria. It was therefore considered necessary to develop sub-sectoral guidelines and checklists for such initiatives. These guidelines and checklists are an effort to make the development process in Balochistan more environment-friendly. Guidance for these guidelines and checklists has been taken the Sub-sectoral Guidelines and Checklists developed for NWFP EPA by Hagler Bailly Pakistan and commissioned by IUCN Pakistan.

3. Methodology

A five-step methodology was used for the development of the sub-sectoral guidelines and checklists:

- The first step focused on an extensive literature search. The search was undertaken using the internet, by visiting libraries and going through relevant documents.
- The second step involved a visit to Balochistan and meeting relevant people in different departments and concerned organisations.
- The third step primarily focused on the development of the guidelines and checklists to complement the guidelines.
- The fourth step involved circulation of the guidelines and checklists to relevant people and departments to obtain their feedback on the same. The same step also involved presenting the guidelines in a multi-stakeholder workshop to obtain more comprehensive feedback.
- The fifth step entailed incorporation of this input into the guidelines and checklists and the production of a final document to be put into operational use by relevant departments in Balochistan.

Section 1: Dairy farms

Guidelines for dairy farms

Background

Dairy is one of the most rapidly expanding sectors in Balochistan. Most dairy farms are small establishments, which serve as providers of raw, unprocessed milk. Contractors collect most of the milk produced and either sell it to various processing industries or disburse it amongst local consumers. A very small percentage of the milk is processed by the dairy industry itself into other dairy products such as butter, cheese, etc.

Small dairy farms are often sited inside the main city, close to or within residential and commercial areas, and service a small number of residents. Cows are milked twice a day. The milk produced is placed in containers until the contractor arrives. The smaller establishments do not possess cooling facilities and contractors collect the milk within 15 minutes of it being produced. Non-milking animals are slaughtered. Foot and mouth disease is common and diseased cows are isolated from the rest of the herd to prevent the spread of the infection. However, as most dairy farms are located very close to each other, the disease is transmitted quickly from animal to animal. Hormone injections e.g. the "Boston" shot, is a regular practice among small dairy farmers, as these make animals produce larger quantities of milk.

There is one government-operated farm in Quetta, with 180 Friesen cows. A hundred cows and one bull were imported from Denmark and their numbers have now expanded sufficiently to open six more farms in Balochistan. Here milking is mechanized and the average cow produces about 12 litres of milk per day. The daily quantity of milk produced on the farm ranges from 500 to 600 litres. The milk is chilled, sealed and supplied to a select clientele. Butter is only produced when milk is in surplus e.g. in the winters, but is not generally feasible due to the high demand for milk. Waste is drained using water. It is transported via pipe to a paddock where it is dried. The manure thus produced is collected and sold to waste contractors. Cows are vaccinated seven times a year. Outbreaks of foot and mouth disease at the government establishment are rare and animals are quarantined if infected. The bulls are sold for breeding purposes only.

The industry has a high potential for growth. However, attention needs to be focussed on investment in dairy development, breed improvement, hygiene, disease prevention and care, and quality animal feed production. There is also a need to build the capacity of local dairy farmers in vaccination and the treatment of simple ailments. Ideally, all dairy farmers, milk carriers, dairy food manufactures, distributors and retailers should be a part of an integrated food safety and quality management system.

Scope

These guidelines are applicable to all small, medium and large size dairy farms.

Environmental/ Social / Health / Safety Aspects

Dairy farms can have significant impacts on the surrounding environment. Issues include discharge of contaminated wastewater, potential of groundwater contamination, improper housekeeping, product hygiene, bad odor and noise, etc. The key issues are discussed below:

Site location

Most dairy farms are located within city limits, often inside residential areas, causing aesthetic and pollution related problems. The smell, noise and waste generated from such establishments are a major nuisance for neighboring residents. The government dairy farm and newer establishments are sited on the outskirts to avoid impact on the surrounding population.

Land contamination

Dairy farms operations do not contaminate land in the detrimental fashion industrial processes do. The use of chemicals is practically non-existent for dairy products, however, caustic soda, hydrogen peroxide, hydrogen chloride, nitric acid etc. may be used for the cleaning and disinfecting of utensils and equipment.

For the most part, the waste produced is organic in nature consisting of wasted feed, animal by-products etc. In the rural areas, this waste is useful as manure to help enrich the soil. However, contamination is a major issue in the urban centers, where small dairy concerns are

sited within residential areas. Here contamination is more of an aesthetics issue, than that of pollution.

Water contamination

Large volumes of discharge and pollution loading from various dairy processes characterize generation of wastewater at dairy industries. Dairy wastewater is characterized by high alkalinity, organic matter in terms of BOD and COD, sulphates etc. Dairy products, present in wastewater, are rich nutrient for bacteria, which biodegrade these compounds aerobically and deplete dissolved oxygen content of water, making it unfit for aquatic species. The increase in bacterial contamination can result in health problems as the wastewater may contain pathogens from contaminated materials or production processes. Generally wastewater facilities have not been established at dairy farms and the water is discharged without any treatment. Improper disposal of waste also causes groundwater contamination.

Air emissions

Only a few dairy farms in Balochistan have cold storage facilities, so leakage of cooling agents such as Freons (R12 and R22) is not a major source of air pollution. However, odor caused by the improper disposal of waste and decomposition of excess feed is a major problem for surrounding populations.

Solid waste

Most of the solid waste produced by dairy farms is organic in nature, consisting of fecal matter and wasted feed, and can be recycled if collected. The waste produced is not hazardous in nature, but its proper disposal is a matter of concern.

Noise

Noise from the dairy farm can be a nuisance for neighboring communities. Major sources of noise are the animals themselves, particularly at milking time, and vehicular movement to transport milk (twice a day) from the dairy farm to the markets.

Health, hygiene and safety

Lack of hygiene is a major issue. The dairy farm staff does not always practice sanitary methods and are not careful about their personal hygiene. Milking equipment and utensils are not kept clean and appropriate systems to separate

milk from diseased animals are not in place. Due to the absence of cold storage facilities at most small farms, the milk can get spoiled before the contractors come to pick it up.

Product safety during transportation is also a significant issue. Due to unhygienic and inappropriate transportation and preservation methods, milk can get spoiled before reaching its destination. Usually ice prepared from contaminated water is used to keep the milk chilled. This practice not only adds impurities to the milk, but also adulterates it through addition of excess water.

Mitigation Measures

Site location

- Dairy farms should be located outside populated areas, preferably outside the city premises;
- The location and previous use of the dairy farm, and activities of neighboring properties should be considered in order to minimize the risk of environmental contamination of milk; and
- Dairy farms should not be located on the banks of a river or any other water body.

Land contamination

- Animal holding areas should be kept clean and maintained in a manner that minimizes risk of pollution;
- Animals should be parked in a paved area with a liquid collection system. However, for the safety of animals it should be ensured that the floor is not slippery;
- An appropriate effluent disposal system, to keep all dairy shed waste on the farm and out of streams/drains that leave the property, should be in place;
- If waste needs to be stored before disposal, it should be collected, preferably in an aerated area to minimize biodegradation and foul smell, and avoid issues of an aesthetic nature; and
- The waste storage area should be sprinkled with crushed limestone (calcium carbonate) for disinfection purposes.

Water contamination

- Dairy farm should have a liquid waste collection system to avoid any water discharges outside the premises;
- The waste collection system should carry the effluent to a retention pond tank sited

-
- away from the milking shed for later discharge;
 - Phosphorus-based cleaning agents should be avoided; and
 - Milking animals should not be allowed to consume or have access to contaminated water sources.

Air emissions

- Proper aerated storage areas should be built to minimize build up of odor;
- Odor controls (such as absorbents/biofilters etc) should be installed where necessary to achieve acceptable odor quality for nearby residents;
- Trees should be planted around the slaughterhouse to provide a barrier against the spread of foul smell or noise originating from the facility; and
- Vehicles used for transportation/ distribution purposes should be well maintained to minimise emissions.

Solid waste

- Waste should be stored in open areas to avoid the build-up of smell inside the facility;
- Waste storage areas should be sprinkled with crushed lime (calcium carbonate) for disinfection and also to curtail foul smell; and
- Waste products should be collected for use in low-grade products such as animal feed or manure, where this is feasible.

Noise

- Where possible, trees should be planted around the dairy farms to block the noise emitted from it;
- Dairy farm walls should be at least seven feet high; and
- Dairy farms should avoid noisy activities such as vehicular movement in after hours.

Health, hygiene and safety

- Only animals of known disease status should be bought and their introduction into the herd controlled;

- Cattle transport on/ off farm should be monitored to ensure that it does not introduce disease - cattle should be vaccinated before and after moving them inter-provincially or from farm to farm;
- People's access to the dairy farm and milking shed should be limited;
- Cattle should be regularly checked for and vaccinated against disease;
- A welfare dispensary for dairy farm employees should be setup at the dairy farm site;
- Cattle handlers should undergo a regular medical checkup;
- The dairy farm premises and milking equipment/ utensils should be regularly sterilized. The management should ensure proper insect and rodent control inside production area;
- Contamination during primary production should be minimized and milk should have a microbiological load as low as possible;
- Cow udders/teats should be cleaned and disinfected regularly;
- Cows should be milked at regular times during the day;
- Housed animals should be provided with adequate ventilation to remove excess heat, moisture, dust etc and allow them sufficient space to lie down;
- Person(s) involved in milking should be healthy. They should not have any open wounds nor suffer from infectious disease;
- Suitable clean clothes should be worn during milking and hair should be covered;
- Milk should be stored in hygienic conditions, while awaiting pickup;
- Milk from sick animals should be separated;
- The milk containers used during transportation should be regularly cleaned and disinfected/ sterilized;
- During transportation milk should be cooled by putting ice around the containers instead of in the milk itself;
- Competent stockmanship is essential and appropriate training should be provided to dairy farm staff; and
- Milk cooling and storage equipment should be properly installed and maintained.

Form I: Project Description

File No _____
Date _____

(To be filled by EPA)

General Information

1. Project Name _____
2. Project Proponent (Department or Organisation) _____
3. Address _____
4. Telephone _____
5. Fax _____
6. E-mail _____
7. Representative of the Proponent _____
8. Designation _____
9. Name of the person who conducted this assessment _____
10. Designation _____
11. Qualification _____

Project Information

12. Project Location _____
13. Cost of the Project _____
14. Area of the proposed land for the farm _____

Please attach a plot plan of the proposed project site showing the location of the key structures, access, utilities, units, etc.

15. Number and type of qualifications of required staff to run the project? _____
16. What will be the expected water requirement for the project? _____ m³/d
17. What is the proposed source of water? _____
18. Where will the wastewater from the unit be disposed? _____

19. Please describe the planned treatment system for the wastewater, if any.

20. Please describe the solid waste expected during operation.

Construction

21. What is the present use of the land?

22. Are there any trees on the proposed site?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
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23. Will any tree be removed?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
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24. Period of construction (start and end dates)

<input type="checkbox"/> Yes	<input type="checkbox"/> No
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25. Is any construction work planned during the night hours?

Form II: Screening

1. Is the proposed project listed in Schedule A or B of EIA Rules and Regulations?

Schedule A Yes No

Schedule B Yes No

2. Is the proposed project located in an ecologically sensitive area?

Yes No

If the answer to the above questions is yes, then the project would require an Initial Environmental Examination (IEE) or an Environment Impact Assessment (EIA). Refer to the Pakistan Environmental Protection Agency Review of Initial Environmental Examination and Environment Impact Assessment Regulations, 2000 for the appropriate category.

Form III: Checklist

Form III: Checklist for Dairy Farms

Aspects of EIA	Checklist Questions will the project:	Yes	No	Additional Data needs
Site Location	1. Convert land that supports conservation worthy ecosystems, flora or fauna (e.g. tropical forests, wilderness areas, critical habitats, endangered species); or areas that are of historical or cultural importance?	0	0	0
	2. Be located close to or within populated areas?	0	0	0
	3. Be located close to or in an area previously or currently used for activities that may result in environmental contamination of milk?	0	0	0
	4. Induce unplanned development through the construction of access or feeder roads?	0	0	0
Land Contamination	1. Present a risk of contamination of land due to improper disposal of dairy farm waste?	0	0	0
Water contamination	1. Be constructed near or next to water bodies?	0	0	0
	2. Present a risk of pollution due to runoff from dairy farm or disposal of waste, to water bodies that support conservation worthy ecosystems or species, or commercially significant fishstocks?	0	0	0
	3. Present a risk of intensive eutrophication or bacterial infestation due to indiscriminate discharge of effluent from dairy farm into water bodies?	0	0	0
	4. Present a risk of contamination of groundwater resources?	0	0	0
Air emissions	1. Cause air pollution due to foul odor originating from dairy farm?	0	0	0
	2. Result in foul odor due to decomposition and improper disposal and storage of dairy farm waste?	0	0	0
Solid waste	1. Present a risk of pollution due to improper disposal of and storage of solid waste originating from the dairy farm?	0	0	0
Noise	1. Lead to a significant increase in traffic congestion and noise that would adversely affect local inhabitants?	0	0	0
	2. Result in disturbance to local inhabitants due to farm-related activity e.g. excessive traffic?	0	0	0
Health, hygiene and safety	1. Result in disease transmission due to lack of hygienic standards or poor vaccination regime at the dairy farm?	0	0	0
	2. Cause public health risks due to contamination of milk during primary production or inadequate cooling/storage facilities?	0	0	0
	3. Cause public health risks from discharge of wastes, noise and foul odor?	0	0	0
	4. Be likely to require mitigation measures that may result in the project being financially or socially unacceptable?	0	0	0
Comments				

Section 2: Slaughterhouses

Guidelines for slaughterhouses

Background

The metropolitan population of Balochistan has grown in recent years, and environmental problems are intensifying at an alarming rate due to mushrooming city growth and the inadequacy of the present urban setup. The nutritional needs of the population have multiplied and efforts are being made by the municipal committees to cater to the same.

Traditionally slaughtering is done at the individual or family level in Balochistan and formal slaughterhouses are a recent phenomenon. These have been set up by the municipalities to discourage scattered slaughtering, particularly in urban centers like Quetta. All establishments are required to meet certain standard requirements, and it is hoped that these would help curtail the spread of pollution and provide hygienic meat to the community.

The slaughterhouse in Quetta is functional and is meeting the needs of a small population but the idea has not gained mass popularity in the Balochistan. A new slaughterhouse was constructed a few years ago but is still not being used. The waste generated from the operational slaughterhouses is either collected as municipal waste by sweepers, sold to waste vendors or allowed to decompose outdoors. Slaughterhouse effluent, which contains animal remains, blood and animal waste is discharged directly into the open and eventually finds its way to water bodies (surface and ground water) through open drains.

Most slaughterhouses in Balochistan do not have a management plan and administration of the establishment is usually limited to slaughtering animals, without any attention being paid to dealing with the waste generated.

Scope

These guidelines are applicable to all slaughterhouses constructed in Balochistan.

Environmental / Social / Health / Safety Aspects

Slaughterhouses can have significant impacts on the surrounding environment. Although the

waste originating from slaughterhouses is organic in nature and is recyclable, if it is not handled properly, it can affect the surrounding environment negatively. Some key issues in this regard are listed below:

Site location

The new slaughterhouses are located outside city limits to avoid adverse impact on the surrounding population. In Quetta, the slaughterhouse was built outside the populated area to avoid any issues with communities. The presence of such establishments within populated areas can cause aesthetic and pollution related problems.

Land contamination

Slaughterhouses do not contaminate the land the way other industrial operations can. The main reason for this is that slaughterhouses do not use any chemicals that could have any detrimental effect on the environment. In fact, waste originating from slaughterhouses help enrich the soil and make it more productive. Mostly land contamination, which occurs due to slaughterhouse waste, is an aesthetics issue rather than one relating to pollution.

Water contamination

The waste originating from slaughterhouses can end up in water bodies, polluting water resources. The main pollutants are blood, animal dung, and body parts. No chemicals are used in slaughterhouses. Although the contaminants are not toxic in nature, they can introduce bacterial contamination and increase nitrates, phosphates and sulfates concentration in water, leading to health problems.

Air emissions

Slaughterhouses in Balochistan do not have cold storage facilities. Thus CFC emissions are not an issue. However, the foul smell, which pervades the area due to the presence of animals and decomposition of animal parts and other waste, is a significant issue for the surrounding populations. Due to improper waste handling, a significant amount of waste decomposes before being removed from the site by vendors. In addition, waste is often stored out in the open, which causes foul odor and is unpleasant aesthetically.

Solid waste

All waste originating from the slaughterhouses is marketable and can be sold to vendors for recycling purposes. Common waste generated by slaughterhouses are hides, blood, bones, dung, fat and body parts, which could be used in the manufacture/ preparation of leather, chicken feed, jelly, manure (compost/fertilizer) and cosmetics. Although the waste has a commercial value, a considerable amount of it is wasted because of poor handling, improper storage and poor marketing.

Noise

Noise from the establishment could be a nuisance for communities living in the immediate vicinity of the slaughterhouse. Major sources of noise are the animals, the slaughtering activities and vehicular movement to transport animals and meat to and from the slaughterhouse.

Health, hygiene and safety

Lack of hygiene is a major issue at existing slaughterhouses in Balochistan. Little or no care is taken to maintain decent hygiene standards. The staff handling the meat does not practice sanitary methods while at work and are also not careful about their personal hygiene. Due to the absence of cold storage facilities, meat can get spoiled in the summer months posing a danger to the health of consumers.

Due to lack of training, absence/ non-availability of protective gear and inadequate monitoring, safety is a major issue in most of the slaughterhouses in Balochistan. Butchers/ staff get injured regularly while handling animals, slaughtering etc. The poor layout of slaughterhouses and inadequate facilities also complicate matters.

Mitigation Measures

Site location

- Slaughterhouse should be located outside populated areas, preferably outside the city premises;
- Slaughterhouse should be located downwind from the city; and
- Slaughterhouse should not be located on the banks of a river or any other water body.

Land contamination

- Waste should not be stored outside the slaughterhouse premises to avoid issues of an aesthetic nature;
- Waste should be properly stored inside the premises, preferably in an aerated area to minimize biodegradation and foul smell;
- The slaughtering area should be paved and should include a blood collection system to avoid any wastage of by-products;
- The waste storage area and other adjacent areas should be sprinkled regularly with crushed limestone (calcium carbonate) for disinfection purposes or sprayed to avoid any spread of disease; and
- The animal parking area should be paved and have a liquid collection system.

Water contamination

- Slaughterhouse should have a liquid waste collection system to avoid any water discharges outside the premises; and
- The waste collection system should carry the collected effluent to retention/ evaporation tank for later discharge outside the slaughterhouse premises for irrigation or other purposes.

Air emissions

- Proper aerated storage areas should be built to minimize any foul smell built up; and
- Trees should be planted around the slaughterhouse to provide a barrier against the spread of foul smell or noise originating from the facility;

Solid waste

- Waste handling should be improved to minimize losses;
- Waste should be stored in open sheds to avoid the build-up of smell inside the facility;
- Vendors should be asked to pick up waste on a daily basis to minimize degradation and smell;
- Waste should be recycled;
- Any waste that is no longer suitable for recycling purposes should either be handed over to the municipal committee or buried in an open earthen excavation pit; and
- Waste storage areas should be sprinkled with crushed lime (calcium carbonate) or

sprayed for disinfection purposes as well as to curtail foul smell.

Noise

- Trees should be planted around the slaughterhouse to block the noise emitted from it;
- Slaughterhouse walls should be at least seven feet high; and
- Slaughterhouses should avoid activities including vehicular movement in after hours.

Health, hygiene and safety

- Meat handlers should undergo a regular medical checkup;
- Meat handlers should be provided with protective gear like head cover, gloves etc;
- Meat should be stored in hygienic conditions, preferably on hangers;
- The slaughterhouse premises should be regularly sterilized and treated for rodents, stray dogs and cats;

- Lighting inside the slaughterhouse should be adequate to ensure proper visibility;
- Facility should be regularly sprinkled with lime and/ or sprayed for disinfection purposes;
- Quarantine facilities for sick animals should be available; and
- Meat should be transported in covered vehicles which are regularly disinfected.
- The layout and design of slaughterhouses should be such that the risk of accidents is minimised;
- Floors should be cleared regularly to ensure they are not slippery, to help prevent accidents;
- Staff should be provided with proper protective gear;
- Proper training should be provided to the staff on safety so that accidents can be avoided;
- Regular monitoring of slaughterhouses should be undertaken to ensure that they comply with federal and provincial occupational health and safety rules; and
- All necessary facilities/ infrastructure/ utilities should be provided.

Form I: Project Description

File No _____
Date _____

(To be filled by EPA)

General Information

1. Project Name _____
2. Project Proponent (Department or Organisation) _____
3. Address _____
4. Telephone _____
5. Fax _____
6. E-mail _____
7. Representative of the Proponent _____
8. Designation _____
9. Name of the person who conducted this assessment _____
10. Designation _____
11. Qualification _____

Project Information

12. Project Location _____
13. Cost of the Project _____
14. Area of the proposed land for the slaughterhouse _____

Please attach a plot plan of the proposed project site showing the location of the key structures, access, utilities, units, etc.

15. Number and type of qualifications of required staff to run the project? _____
16. What will be the expected water requirement for the project? _____ m³/d
17. What is the proposed source of water? _____
18. Where the wastewater from the unit be disposed? _____

19. Please describe any treatment system for the wastewater planned, if any

20. Please describe the solid waste expected during operation:

Construction

21. What is the present use of the land?

22. Are there any trees on the proposed site?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
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23. Will any tree be removed?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
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24. Period of construction (start and end dates)

25. Is any construction work planned during the night hours?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
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Form II: Screening

1. Is the proposed project listed in Schedule A or B of EIA Rules and Regulations?

Schedule A Yes No

Schedule B Yes No

2. Is the proposed project located in an ecologically sensitive area?

Yes No

If the answer to the above questions is yes, then the project would require an Initial Environmental Examination (IEE) or an Environment Impact Assessment (EIA). Refer to the Pakistan Environmental Protection Agency Review of Initial Environmental Examination and Environment Impact Assessment Regulations, 2000 for the appropriate category.

Form III: Checklist for laughtershouses

Aspects of EIA	Checklist Questions Will the project:	Yes	No	Additional Data needs
Site Location	1. Convert land that supports conservation worthy ecosystems, flora or fauna (e.g. tropical forests, wilderness areas, critical habitats, endangered species); or areas that are of historical or cultural importance?	0	0	0
	2. Induce unplanned development through the construction of access or feeder roads?	0	0	0
	3. Be located close to or within populated areas?	0	0	0
Land Contamination	1. Present a risk of contamination of land due to improper disposal of slaughterhouse waste and runoff?	0	0	0
Water contamination	1. Be constructed near or next to water bodies?	0	0	0
	2. Present a risk of pollution due to runoff from slaughterhouse or disposal of waste, to water bodies that support conservation worthy ecosystems or species, or commercially significant fishstocks?	0	0	0
	3. Present a risk of intensive eutrophication or bacterial infestation due to indiscriminate discharge of effluent from slaughterhouse into water bodies?	0	0	0
	4. Present a risk of contamination of groundwater resources?			
Air emissions	1. Cause air pollution due to foul smell originating from slaughterhouse?	0	0	0
	2. Result in foul smell due to decomposition and improper disposal and storage of slaughterhouse waste?			
Solid waste	1. Present a risk of pollution due to improper disposal of and storage of solid waste?	0	0	0
	2. Result in a rodent infestation or attract stray animals due to improper disposal of waste?			
Noise	1. Lead to a significant increase in traffic congestion and noise that would adversely affect local inhabitants?	0	0	0
	2. Result in disturbance to local inhabitants and wildlife due to slaughterhouse-related activities e.g. excessive traffic, the slaughtering activities themselves, etc?	0	0	0
Health, hygiene and safety	1. Result in accidents due to inadequate attention to occupational health and safety at the slaughterhouse?	0	0	0
	2. Result in disease transmission due to lack of hygienic standards at the slaughterhouse?	0	0	0
	3. Cause public health risks from discharge of wastes, noise and foul odor?	0	0	0
	4. Be likely to require mitigation measures that may result in the project being financially or socially unacceptable?	0	0	0
Comments				

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IUCN – The World Conservation Union

IUCN - The World Conservation Union was founded in 1948 and brings together 79 states, 112 government agencies, 760 NGOs, 37 affiliates, and some 10,000 scientists and experts from 181 countries in a unique worldwide partnership. Its mission is to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable. Within the framework of global conventions IUCN has helped over 75 countries to prepare and implement national conservation and biodiversity strategies. IUCN has approximately 1000 staff, most of whom are located in its 42 regional and country offices while 100 work at its Headquarters in Gland, Switzerland.

In Pakistan, the Union seeks to fulfill this mission by empowering communities to participate in the implementation of the National Conservation Strategy.

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Northern Areas Programme Office:	Alpine Complex, Jutial, Gilgit.
Sarhad Programme Office:	House 109, Street 2, Defence Officers Colony, Peshawar.
Sindh Programme Office:	D-133, Block 4, KDA Scheme # V, Clifton, Karachi.