



# BIOSECURITY STANDARDS

FOR IMPROVED ANIMAL MANAGEMENT





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## HEIFER INTERNATIONAL ANIMAL WELL-BEING

Heifer's community-led development model strengthens the social, economic and ecological fabric of entire communities by investing in our project participants' access to high-quality livestock, seeds, equipment and training in animal farming, natural resource management, leadership and gender equity.

Agriculture and livestock play a central role in our work as a strategy to empower families to become self-reliant and to achieve food security and proper nutrition. Livestock farming provides food and nutrition for people, while also giving them the tangible assets with which they can build a sustainable business.

Our approach supports the One Health model, which recognizes that human health, animal health and ecosystems are interconnected. We have seen this in situations from localized outbreaks to global pandemics. Our attention to sustainable livestock development includes improving our project participants' access to animal health services and disease control, along with improved management, nutrition and handling of livestock and livestock products. We partner with organizations and

entities across the globe to provide our expertise in research projects, health campaigns, and other issues regarding transmittable animal diseases and improved livestock production.

Project participants adopt appropriate technologies in areas such as genetic improvement; improved feed, fodder and forage production; improved animal housing; animal health service delivery; and climate-smart livestock management practices. We also support our project participants to adopt animal asset insurance systems to minimize the risk of loss from disease outbreaks and natural disasters.

Maintaining biosecurity is important for all communities — for their health and well-being, for safeguarding their livestock, for their economic well-being and for the health of our planet. In line with our mission to end hunger and poverty while caring for the Earth, awareness and enforcement of biosecurity measures minimize losses from animal disease and guide our project participants toward dignified, resilient lives through improved livestock production.

# BIOSECURITY AND BIOSECURITY PRINCIPLES

**Biosecurity** is a set of management and physical measures designed to reduce the risk of introduction, establishment and spread of animal diseases, infections or infestations to, from and within an animal population.

A **Biosecurity Plan** is a plan that identifies potential pathways for the introduction and spread of disease in an area and describes the measures that are being or will be applied to mitigate the disease risks, if applicable, in accordance with the recommendations in the Terrestrial Code.

**SOURCE:** World Organization for Animal Health (OIE), Glossary  
Accessed 10 April 2020



## BIOSECURITY PRINCIPLES

1

### **Livestock Quarantine and Animal Movements**

Manage the introduction and movement of livestock in a way that minimizes the risk of introducing or spreading infectious disease.

2

### **People, Equipment and Vehicle Hygiene**

People, equipment and vehicles entering the village, enterprise or country are controlled to minimize the potential for property contamination.

3

### **Food and Water Safety**

Quality of stock feed and water is fit for purpose, especially purchased feed that is free from contaminants, untreated swill and/or restricted animal material (i.e. feeds containing ruminant tissue cannot be fed to ruminants).

4

### **Animal Health Management, Surveillance and Reporting**

Prevent and control animal disease by using the appropriate vaccination program, regularly monitoring for disease and immediately reporting outbreaks of transboundary animal diseases.

5

### **Public Awareness**

All farmers, traders, agency staff and contractors understand the importance of the biosecurity requirements for the village, enterprise or country where they work and can implement the agreed practices for which they are responsible.

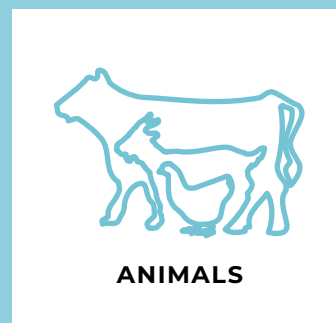
**SOURCE:** Windsor, P (2017), *How to Implement Farm Biosecurity: The Role of Government and Private Sector* (Asia- OIE Regional Commission)

# ROUTINE BIOSECURITY PROCEDURES

## TRAINING AND AWARENESS

- Project participants must be provided a basic biosecurity training as a part of improved animal management training.
- Biosecurity is one of the major topics of the training curriculum for Community Agro-Vet Entrepreneurs, Community Animal Health Workers and promoters, and the topic should be discussed during periodic refresher trainings. Project participants and Community Agro-Vet Entrepreneurs must be aware of economic implications for not implementing biosecurity practices.
- Heifer staff, including local nongovernmental partners, are provided with basic training on biosecurity. These guidelines need to be accessible to them for reference.
- Awareness training on biosecurity, zoonosis and disease control are carried out regularly through producer group/self-help group meetings, Community Agro-Vet Entrepreneur meetings, and other stakeholder meetings as appropriate.
- Information, education and communication materials on biosecurity are developed as a part of improved animal management practices, and participants are also encouraged to use materials developed by government and other stakeholders.
- Heifer staff members are encouraged to collaborate with government veterinary and public health departments to maximize their expertise on maintaining biosecurity at various levels.

## MAJOR SOURCES FOR DISEASE TRANSMISSION



# BIOSECURITY OF ANIMAL HOUSES AND FACILITIES

## ANIMAL HOUSING

Animal houses are designed with consideration for biosecurity and animal well-being. Each animal house should comprise the following:

### Foot Bath or Foot Spray

Foot baths are installed at the point of entry. Use caustic lime or a disinfectant such as water with hypochlorite, chlorhexidine or other commercial disinfectants. Same disinfectants can be used in animal house cleaning.



### Isolation Pen

A separate pen should be constructed for sick livestock and animals requiring special attention, such as infants and pregnant animals. These two groups should never mix in the same pen.



### Vermin Control

Rodents and pests are potential vectors and carriers of pathogens and cause contamination of feed and water from their excreta and other body fluids.



### Orientation

The animal house site should consider wind direction to avoid air pollution.

### Stocking Density

House design should consider the number of animals to be placed per square meter. This will avoid stress, as overstocking may result in skin or respiratory disease outbreaks.



### Prevent Invasion by Animals

Other animals are potential sources of infections and contamination. Several transboundary diseases are commonly transmitted through this path, such as avian influenza from poultry and wild fowl and African swine fever from pigs and wild boar.

### Fence Around the Household

A boundary that demarcates the perimeter prevents trespassing and unauthorized entry of both humans and animals. This is key in limiting movement into the homestead and preventing the contamination and/or introduction of diseases and pests into the project participants' households. For example, jackals entering the courtyard and mingling with dogs presents a danger of rabies.





## ANIMAL HUSBANDRY

### Vaccination

Routine animal vaccination is a best practice that should be observed by all livestock farmers. Animals should be vaccinated against prevalent diseases in that area.

### Disinfection and Cleaning

The natural environment is full of commensal microbes and pathogens. Pathogens proliferate normally in conditions where livestock are aggregated and housed. Pathogens can also survive on surfaces long enough to infect different batches of livestock. Thus, a thorough cleaning and disinfection must be a standard routine practice at the household level.

### Grouping By Age

Some diseases have different age predilections. Thus, it is important to separate or house livestock by age group to ensure there is no transmission across different age groups.

### Grouping By Species

Some diseases are multi-species specific, meaning they are pathogenic for specific species (susceptible) and not in other species (reservoir). This includes foot and mouth disease, Newcastle disease, African swine fever and avian influenza. Species-specific biosecurity protocols will need to be developed and implemented.

### Feeding Sequence and Treatment Equipment

Young animals are more susceptible to infections compared to adults. Routes of infection can be initiated mechanically or through medical exams and treatment. There is a high potential for transmitting diseases during the feeding and treatment processes. The feeding sequence should always be as follows:

**Infants > Young adults > Adults > Sick**

It is prudent to always use a different needle when doing animal treatments or vaccinations.

Disease outbreaks should be reported to the state veterinarian or appropriate authorities. Appropriate quarantine measures need to be followed while introducing new animals or during a disease outbreak.



## VISITORS AND ANIMAL CONTACT

### Entry Requirements

Due care should be taken to understand the origin of visitors who gain entry to the household and their exposure to animals and animal housing. Visitors are potential sources for introducing pathogens into the homestead and animal housing. If there is a disease presence in the visitors' place of origin, necessary measures must be taken to ensure decontamination of the visitor prior to gaining access to structures around and within the homestead.

### Minimal Contact

Minimizing exposure and contact with animals during routine daily practices is key in limiting animals' exposure to contaminants and disease-causing agents. Therefore, the frequency of contact between humans and animals should be limited.





## BIOSECURITY AT DIFFERENT LEVELS

The procedures outlined in these guidelines should be implemented and followed without compromise. A degree of assurance is needed so that diseases and pathogens will not be carried into participants' animal shed and to reduce the risk of transmission among households and communities.

### PROJECT PARTICIPANTS

- Project participants must be trained on basic biosecurity measures before animal placement.
- Project participants should construct bio-secure animal housing according to the local context. Project participants will follow guidelines to select the site for animal houses as recommended by local technicians and according to the resources they have.
- Project participants should be cautious when visiting other households if their animals are sick. They should avoid touching or being near their neighbors' healthy animals or group members. Individual behavior changes and cleanliness are key to maintaining biosecurity.
- Project participants should minimize their movements and adopt recommended practices if there is a disease outbreak.
- If there are animal deaths due to a disease outbreak, proposer disposal of carcasses must be followed as recommended by technicians and/or veterinarians.

### SELF-HELP GROUPS

- Self-help groups should be cautious when visiting other groups if their animals are sick. They should avoid touching or being near the healthy animals of neighbors or other group members.
- Self-help groups will maintain biosecurity at their group level and beyond and will coordinate with each other if there is any suspected disease outbreak.

### COMMUNITIES AND HUBS

- Communities must be aware about the biosecurity measures to be adopted including community level awareness on diseases of public health importance, mass vaccination and wde-worming campaigns for livestock, minimizing contacts during disease outbreaks, discouraging wet market in the communities, etc.
- The biosecurity measures adopted by project participants and self-help groups must also be adopted at the community level.
- Hubs and farmer-owned agribusinesses must follow biosecurity protocols as required and described for individuals, self-help groups and value chain actors.

### SERVICE PROVIDERS

**Community Agro-Vet Entrepreneurs, Community Animal Health Workers, Vaccinators, Promoters and Extension Workers, Including Nontechnical People**

- Service providers are key actors in Heifer's ability to motivate farmers to maintain biosecurity.
- They should organize regular vaccination and deworming campaigns to prevent the outbreak and spread of diseases.



- Heifer will use them as training and awareness service providers to promote biosecurity at the household, self-help group and community levels.
- They work as liaisons between communities and the relevant stakeholders.
- They attend producer group, hub or self-help group meetings regularly and continue conversations on maintaining biosecurity at various levels.
- They should pay proper attention during home visits, so that diseases will not spread from one community to another.

## HEIFER STAFF, DONORS AND OTHER STAKEHOLDERS

### Entry to Households

- **Heifer Vehicles:** Vehicles in this case are motor vehicles and motorbikes. Vehicles are a common means of spreading diseases from one place to another. It is important to limit the entry of vehicles into farmer homesteads. Vehicles should be parked far away from dwellings and animal housing.
- **Pedestrians and value chain actors:** A foot bath/dip or boot covers should be in place at all households. A disinfectant spray can be used to decontaminate shoe soles.
- **Hand sanitizers:** Upon arrival and before entry into the farmer homestead, all staff and visitors should sanitize their hands. This could be through washing hands with soap or a sanitizing solution. Each Heifer-owned motor vehicle can have a stock of hand sanitizer, boot covers (if desired) or disinfectant sprays, and head covers or locally appropriate materials.

### Multiple Community or Project Site Visit

Due care must be observed to avoid the transmission of diseases from one site to another. If a staff member or visitor (delegation) encounters a site or a place of origin contaminated by a disease, other site visits where there are similar livestock species should be discontinued. If the visit cannot be discontinued, the delegation or staff member should ensure that the wheels of the vehicles are decontaminated, delegation and staff shoe soles and hands are sanitized and individuals with long hair wear head covers. Alternatively, the visitors can go back to the place where they are staying, take showers, changes clothes and shoes and plan another visit of the community in the next day.

### Minimal Contact

All staff and visitors should avoid unnecessary contact with farmers' livestock. Clothing, shoes and all other forms of protective gear are potential vehicles for the spread of diseases from place to place. It is imperative that, where a site visit involves viewing livestock, due care be observed to minimize contact with livestock and entry into the animal housing.

### International Visitors

Transboundary livestock diseases have serious economic implications. Prior travel checks can be done, and information can be provided to the visitors within invitations by the host country. Prior to visiting another country, visitors are recommended to observe a lag period (around 2 weeks) if visit to the communities and animals are part of the program.



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