

Risk management in trade of livestock and livestock products

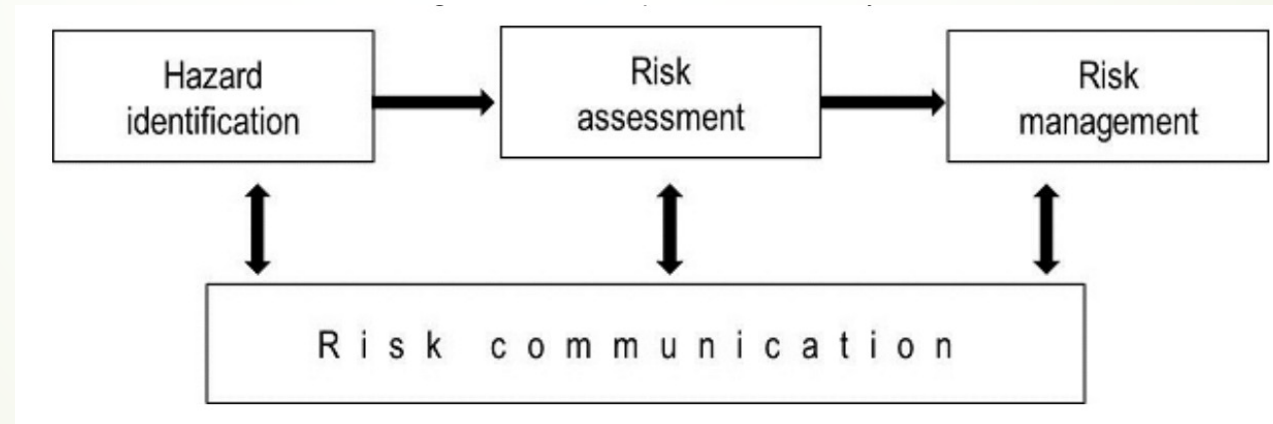
Stakeholders' Dialogue on Improving Veterinary Services to Facilitate Trade

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Import risk analysis

- The principal aim of **import risk analysis** is to provide importing countries with an objective and defensible method of assessing the disease risks associated with the importation of animals, animal products, animal genetic material, feedstuffs, biological products and pathological material.
- The four components of risk analysis:





Components of risk analysis

- The **risk assessment** is the component of the analysis which estimates the risks associated with a hazard. Risk assessments may be qualitative or quantitative.
 - The process of import risk analysis usually needs to take into consideration the results of an evaluation of Veterinary Services, zoning, compartmentalisation and surveillance systems in place for monitoring of animal health in the exporting country.
- The **hazard identification** involves identifying the pathogenic agents which could potentially produce adverse consequences associated with the importation of a commodity.
 - An importing country may decide to permit the importation using the appropriate sanitary standards recommended in the Terrestrial Code, thus eliminating the need for a risk assessment.



Principles of risk assessment

1. **Risk assessment should be flexible** to deal with the complexity of real life situations. No single method is applicable in all cases.
2. Both qualitative risk assessment and quantitative risk assessment methods are valid.
3. The **risk assessment should be based on the best available information** that is in accord with current scientific thinking.
4. Consistency in risk assessment methods should be encouraged and **transparency is essential** in order to ensure fairness and rationality, consistency in decision making and ease of understanding by all the interested parties.
5. Risk assessments should document the uncertainties, the assumptions made, and the effect of these on the final risk estimate.
6. **Risk increases with increasing volume of commodity imported.**
7. The risk assessment should be amenable to updating when additional information becomes available.



Risk assessment step 1

► Entry assessment

- Entry assessment consists of describing the biological pathways necessary for an importation activity to introduce pathogenic agents into a particular environment, and estimating the probability of that complete process occurring, either qualitatively (in words) or quantitatively (as a numerical estimate).
- The entry assessment describes the probability of the “entry” of each of the hazards (the pathogenic agents) under each specified set of conditions with respect to amounts and timing, and how these might change as a result of various actions, events or measures.
- Examples of the kind of inputs that may be required in the entry assessment are:
 - Biological factors (species, age and breed of animals etc.); Country factors (incidence or prevalence etc.); Commodity factors (quantity of commodity to be imported etc.)
- If the entry assessment demonstrates no significant risk, the risk assessment does not need to continue.



Risk assessment step 2

➤ Exposure assessment

- Exposure assessment consists of describing the biological pathways necessary for exposure of animals and humans in the importing country to the hazards (in this case the pathogenic agents) from a given risk source, and estimating the probability of the exposures occurring, either qualitatively (in words) or quantitatively (as a numerical estimate).
- The probability of exposure to the identified hazards is estimated for specified exposure conditions with respect to amounts, timing, frequency, duration of exposure, routes of exposure, such as ingestion, inhalation or insect bite, and the number, species and other characteristics of the animal and human populations exposed.
- Examples of the kind of inputs that may be required in the exposure assessment are:
 - Biological factors (properties of the agent); Properties of the agent (human and animal demographics etc.); Commodity factors (Intended use of the imported animals or products etc.)
- If the exposure assessment demonstrates no significant risk, the risk assessment may conclude at this step.



Risk assessment step 3

- **Consequence assessment**
- Consequence assessment consists of describing the relationship between specified exposures to a biological agent and the consequences of those exposures.
- The consequence assessment describes the potential consequences of a given exposure and estimates the probability of them occurring.
- Examples of consequences include:
 - Direct consequences (animal infection, disease and production losses); Indirect consequences (potential trade losses, compensation costs etc.)



Risk assessment step 4

- **Risk estimation**

- Risk estimation consists of integrating the results from the entry assessment, exposure assessment, and consequence assessment to produce overall measures of risks associated with the hazards identified at the outset.
- Risk estimation takes into account the whole of the risk pathway from hazard identified to unwanted outcome.
- For a quantitative assessment, the final outputs may include:
 - estimated numbers of herds, flocks, animals or people likely to experience health impacts of various degrees of severity over time;
 - estimated numbers of herds, flocks, animals or people likely to experience health impacts of various degrees of severity over time;
 - portrayal of the variance of all model inputs;
 - a sensitivity analysis to rank the inputs as to their contribution to the variance of the risk estimation output;
 - analysis of the dependence and correlation between model inputs.



Principles of risk management

- Risk management is the process of deciding upon and implementing measures to address the risks identified in the risk assessment, whilst at the same time ensuring that negative effects on trade are minimised.
- **The objective is to manage risk appropriately** to ensure that a balance is achieved between a country's desire to minimise the likelihood or frequency of disease incursions and their consequences and its desire to import commodities and fulfil its obligations under international trade agreements.
- The international standards of the WOA (OIE) are the preferred choice of sanitary measures for risk management. The application of these sanitary measures should be in accordance with the intentions in the standards



Risk management components



1. **Risk evaluation** - the process of comparing the risk estimated in the risk assessment with the reduction in risk expected from the proposed risk management measures.
2. **Option evaluation** - the process of identifying, evaluating the efficacy and feasibility of, and selecting measures to reduce the risk associated with an importation.
3. **Implementation** - the process of following through with the risk management decision and ensuring that the risk management measures are in place.
4. **Monitoring and review** - the ongoing process by which the risk management measures are continuously audited to ensure that they are achieving the results intended.



Principles of risk communication

1. Risk communication is the process by which information and opinions regarding hazards and risks are gathered from potentially affected and interested parties during a risk analysis, and by which the results of the risk assessment and proposed risk management measures are communicated to the decision-makers and interested parties in the importing and exporting countries.
2. A risk communication strategy should be put in place at the start of each risk analysis.
3. The communication of the risk should be an open, interactive, iterative and transparent exchange of information that may continue after the decision on importation.
4. The principal participants in risk communication include the authorities in the exporting country and other stakeholders such as domestic and foreign industry groups, domestic livestock producers and consumer groups.
5. The assumptions and uncertainty in the model, model inputs and the risk estimates of the risk assessment should be communicated.
6. Peer review is a component of risk communication in order to obtain scientific critique and to ensure that the data, information, methods and assumptions are the best available.



Criteria applied by the WOAHA (OIE) for assessing the safety of commodities

- The assessment of the safety of the commodities using the criteria relating to processing or treatment can only be undertaken when processing or treatments are well defined.
- It may not be necessary to take into account the entire process or treatment, so long as the steps critical for the inactivation of the pathogenic agent of concern are considered.
- For the criteria to be applied, it is expected that processing or treatment:
 - uses standardised protocols, which include the steps considered critical in the inactivation of the pathogenic agent of concern;
 - is conducted in accordance with Good Manufacturing Practices;
 - that any other steps in the treatment, processing and subsequent handling of the animal product do not jeopardise its safety.



Criteria



- For an animal product to be considered a safe commodity for international trade as described in the User's guide and Article 2.2.1., it should comply with the following criteria:

- **1.** There is strong evidence that the pathogenic agent is not present in the tissues from which the animal product is derived in an amount able to cause infection in a human or animal by a natural exposure route

OR

- **2.** If the pathogenic agent may be present in, or may contaminate, the tissues from which the animal product is derived, the standard processing or treatment applied to produce the commodity to be traded, while not being specifically directed at this pathogenic agent, inactivates it to the extent that possible infection of a human or animal is prevented through its action, which is:

- a) physical (e.g. temperature, drying, irradiation);

OR

- b) chemical (e.g. iodine, pH, salt, smoke);

OR

- c) biological (e.g. fermentation);

OR

- d) a combination of (a) to (c) above.