Project: Technical assistance to improve implementation of food safety standards and disease crisis preparedness

The process of the qualitative risk assessment of the introduction of FMD into the northern part of Cyprus

The role of experts in the qualitative risk assessment

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CONTENT

- The general aspects on risk analysis and risk assessment: refreshment of knowledge
- The process of the qualitative risk assessment
- The role of experts in the qualitative risk assessment

Main definitions:

Hazard

- something with potential negative health effect
- biological, chemical or physical agent that has the potential to cause adverse health effects

Risk

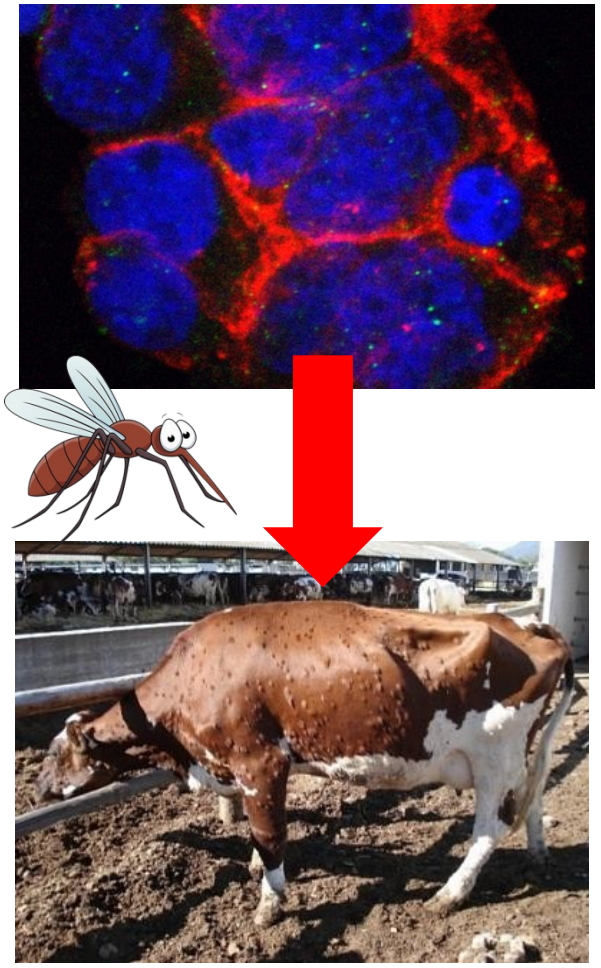
- probability of something negative to happen
- probability and magnitude of consequences of exposure to hazards

Risk factor

- an object, event or activity that contributes to the occurrence of risks

Uncertainty

- reflects a lack of knowledge about the likelihood of risk



Components of the risk analysis:

Risk assessment

science-based process that provides risk managers with an objective and documented basis for decision-making
Risk assessment is performed by independent experts

Risk management

process of selecting alternative solutions based on the results of risk assessment and implementation of appropriate management (control) measures

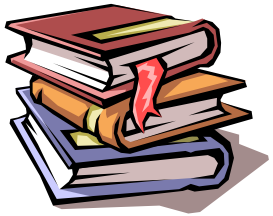
Risk communication

exchange of information on risks at each stage of the risk analysis process

The approaches to risk analysis

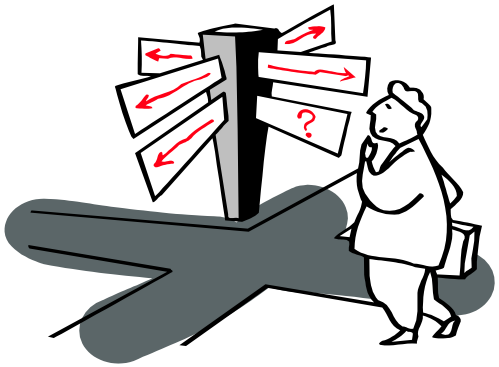
OIE	CAC
Hazard identification	
Risk assessment - Entry assessment - Exposure assessment - Consequences assessment - Risk estimation	**Risk assessment** - Hazard identification - Hazard characterization - Exposure assessment - Risk characterization
Risk management - Initiation of risk assessment - Evaluation of options for measures - Implementation - Monitoring and review	**Risk management** - Initiation of risk assessment - Evaluation of options for measures - Implementation - Monitoring and review
Risk communication	**Risk communication**

What is risk assessment?



Risk assessment

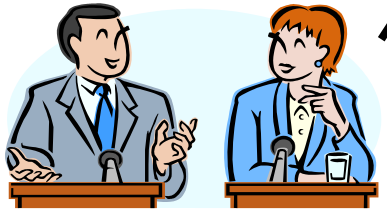
Risk management



Culture and society

International obligations

Interest groups



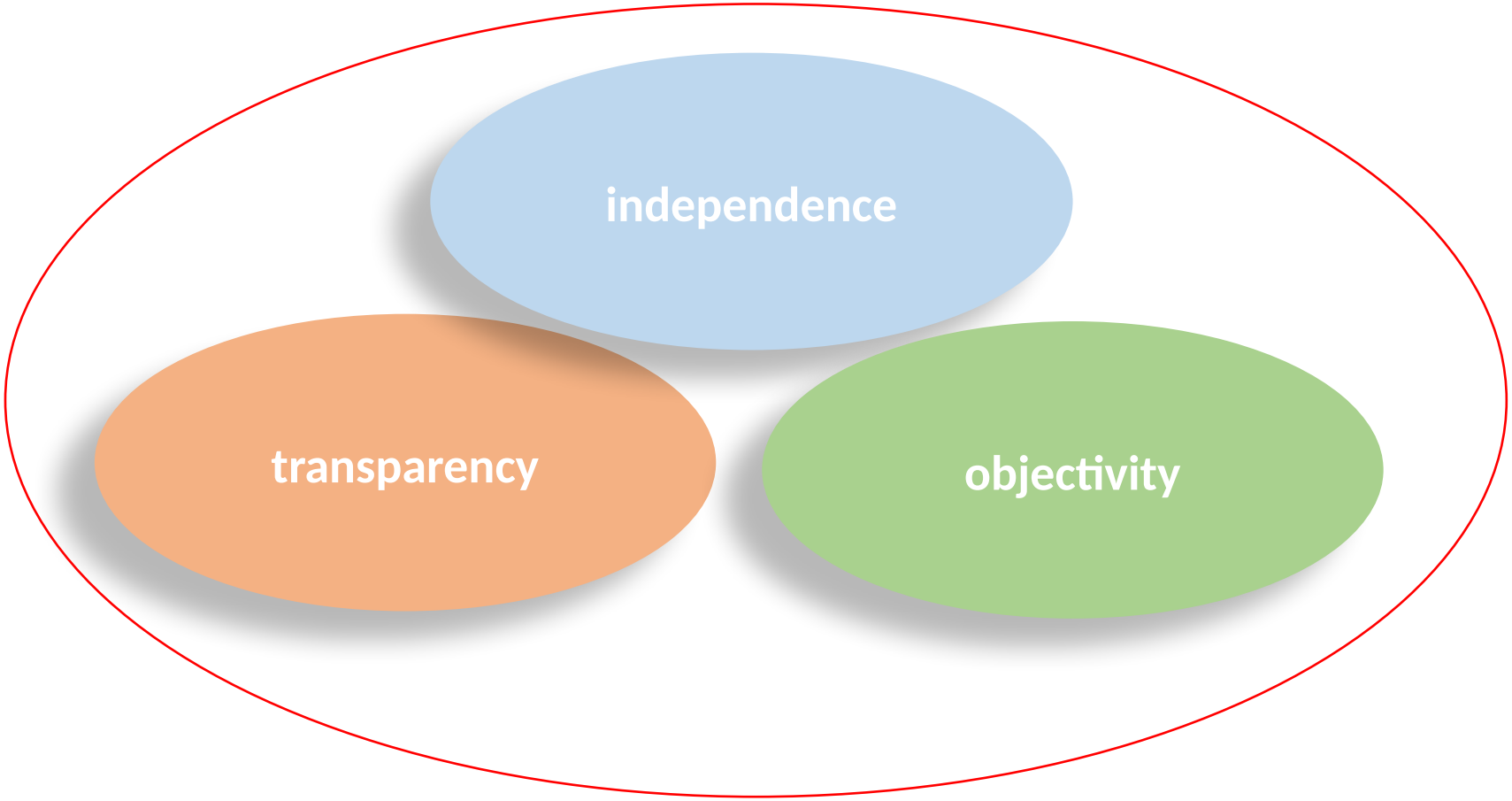
Politicians

Policy

Identification of the need for a risk assessment

- The **importation of animals and animal products** involves a certain level of disease risk to the importing country
- **Presence of transboundary disease in neighbouring countries** may pose a risk for introducing the disease also via wildlife, ecosystem (vector-borne diseases), illegal trade etc.
- **Changing of disease control policy,** e.g., from mandatory vaccination to a forbidden vaccination policy
- **Changes in the biology and/or zoonotic potential** of the agent
  - Non pathogen avian influenza/Highly pathogen avian influenza
  - TSE/BSE

Principles of risk assessment



Types of risk assessment

RISK ASSESSMENT

qualitative

quantitative

A qualitative approach is appropriate for most risk assessments. However, in some circumstances it may be desirable to quantify, for example, to gain a further understanding of a problem, to identify critical steps, or to compare sanitary measures.

Types of risk assessment: Qualitative

Description of risk categories for the qualitative assessment

Negligible	1	The event is so rare that it does not merit to be considered
Very low	2	The event is rare but cannot be excluded
Low	3	The event is rare but does occur
Medium	4	The event occurs regularly
High	5	The event occurs very often
Very high	6	The event occurs almost certainly

Types of risk assessment: Qualitative

- ✓ Qualitative risk assessment is based on a **logical understanding of the situation and expert opinion**.
- ✓ This is the most common assessment for forming the basis for decision-making.

Process of the qualitative risk assessment

1.Identifying and prioritize the **hazard**(s) of interest

2.Framing of **risk question** (identify undesirable outcome)

3. Outlining the steps necessary (**risk pathways)** to get from hazard of interest to unwanted outcome in the target population

4.Identifying **data** and **information** needs

5.Collecting data and information to estimate the probability of each event in the pathway

6.Risk estimation

- *Qualitatively*

Role of experts in the qualitative risk assessment

Different skills are needed to conduct a risk assessment:

- Epidemiologists (veterinary, health)
- Veterinarians
- Virologists, microbiologists, laboratory experts
- Experts in climatology, entomology, ornithology
- Environmentalists,
- Technologists in the field of industry,
- Mathematicians, statisticians
- Specialists in the field of information
- Economists

Multidisciplinary approach

Role of experts in the qualitative risk assessment

Expert = someone who has knowledge and information on a given topic

Criteria for the selection of experts:

- qualifications,
- field of activity,
- membership in professional organizations,
- information on publications,
- years of experience,
- recommendations, etc.

Role of experts in the qualitative risk assessment

Experts are involved in the:

- formation of risk questions;
- development of risk pathways;
- determination, collection and analysis of necessary data (evidence);
- process of risk estimation;
- preparation of the report and recommendations

Process of the qualitative risk assessment

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6.Risk estimation

- *Qualitatively*

Process of the qualitative risk assessment

2. Framing of **risk question** (identify undesirable outcome)

“What is the probability that the FMD virus is introduced into the northern part of Cyprus within the next year?”

“within the next year” is the time period from December 2022 to December 2023

This risk question will help to answer on the question “Are the veterinary `department` of the northern part of Cyprus on standby to stand still with the FMD preventive measures set up?”

Process of the qualitative risk assessment

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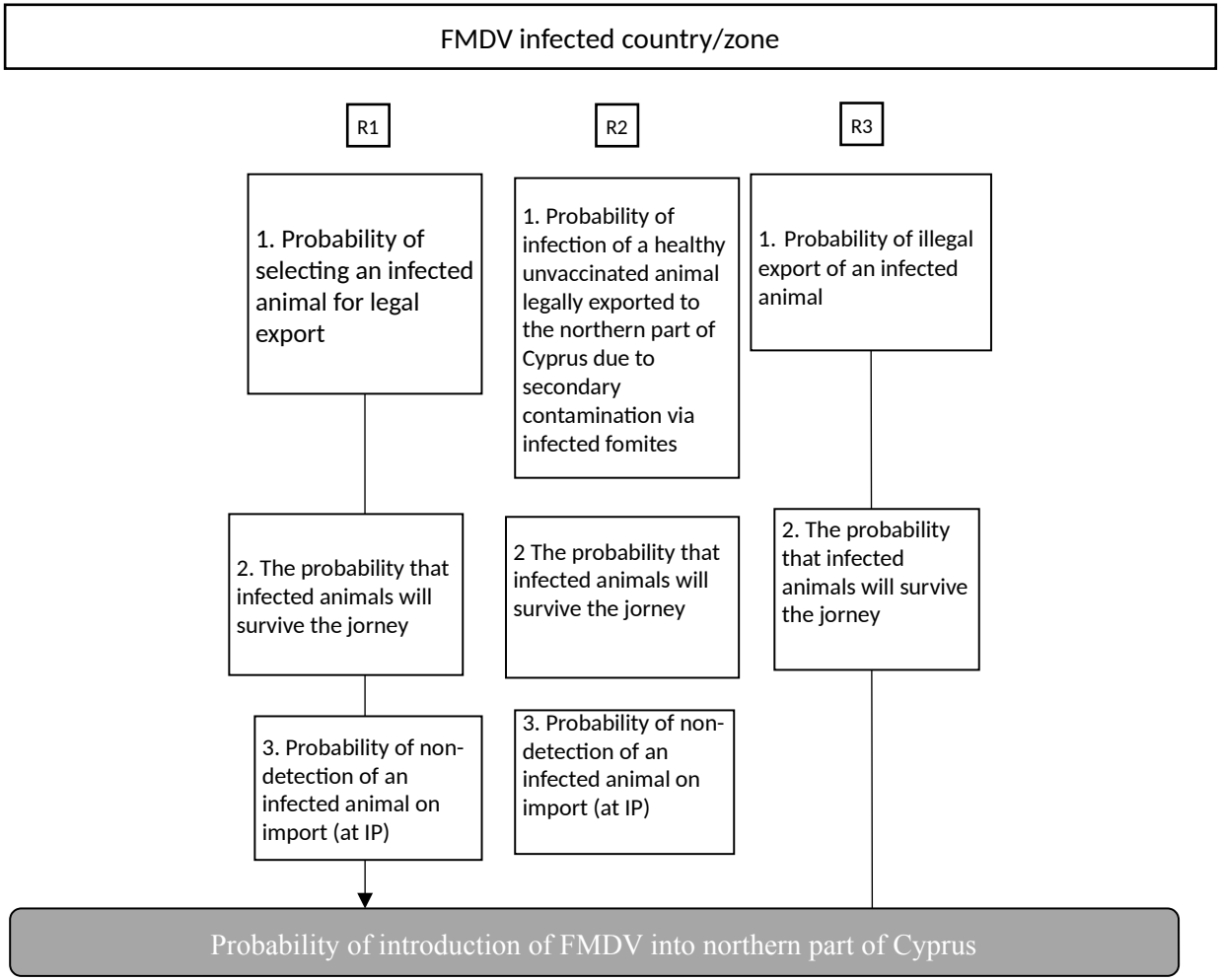
5. **Collecting data** and information to estimate the probability of each event in the pathway

6. **Risk estimation**
   - *Qualitatively*

Process of the qualitative risk assessment

3. Developing of **risk pathways**

Risk pathway for entry assessment through the import of live animals



Process of the qualitative risk assessment

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6.Risk estimation

- *Qualitatively*

Process of the qualitative risk assessment

4. Identifying **data** and **information** needs

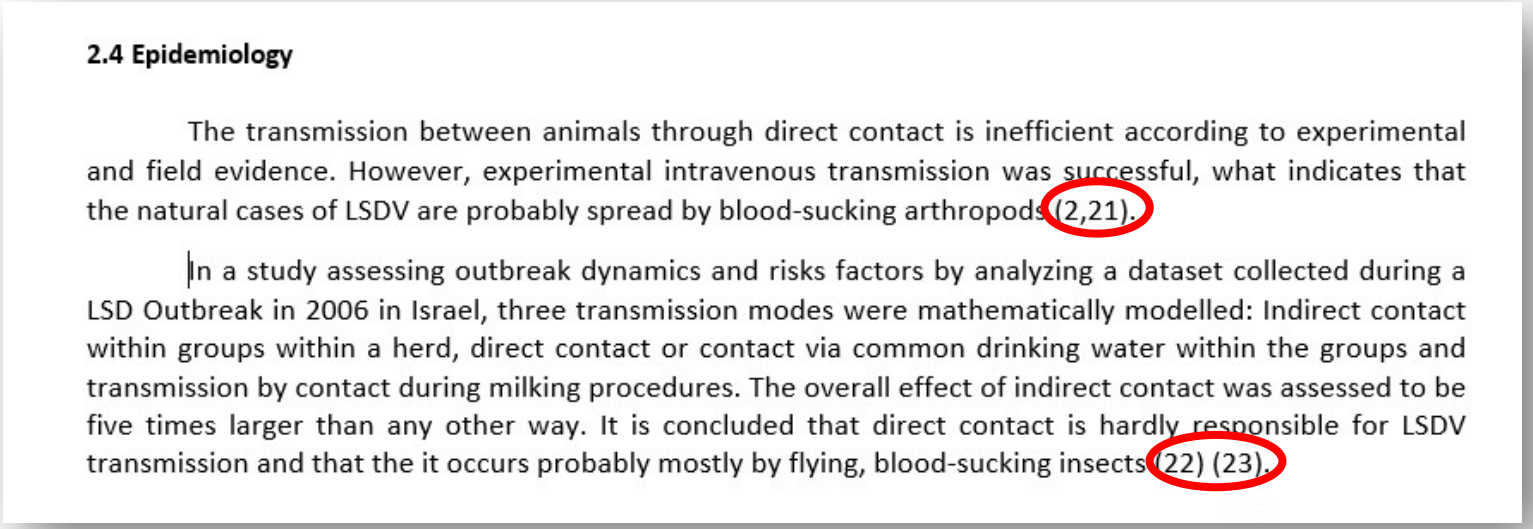
- A risk assessment requires lots of data: the data required to assess the **likelihood of occurrence** of each step of the pathway must be identified

- How to determine **which data** precisely?
  - The data should help to answer the risk question
  - The risk pathway helps to determine what kind of data you need

How to do a risk assessment

5. **Collecting data** and information to estimate the probability of each event in the pathway

- The collected data are analyzed and described by experts with clear references to their sources.



2.4 Epidemiology

The transmission between animals through direct contact is inefficient according to experimental and field evidence. However, experimental intravenous transmission was successful, what indicates that the natural cases of LSDV are probably spread by blood-sucking arthropods (2,21).

In a study assessing outbreak dynamics and risks factors by analyzing a dataset collected during a LSD Outbreak in 2006 in Israel, three transmission modes were mathematically modelled: Indirect contact within groups within a herd, direct contact or contact via common drinking water within the groups and transmission by contact during milking procedures. The overall effect of indirect contact was assessed to be five times larger than any other way. It is concluded that direct contact is hardly responsible for LSDV transmission and that the it occurs probably mostly by flying, blood-sucking insects (22) (23).

- Risk assessment should be based on the most reliable information that corresponds to current scientific results.

Process of the qualitative risk assessment

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5. **Collecting data** and information to estimate the probability of each event in the pathway

6. **Risk estimation**
   - *Qualitatively*

Process of the qualitative risk assessment

6. Assessing the risk

- Experts qualitatively evaluate each step of the risk pathway(s) using different methodologies.

- Calculate the level of uncertainty.
  - Uncertainty -> reflects the lack of knowledge about the likelihood of risk

Process of the qualitative risk assessment

Risk assessment report

- The experts prepare a report on the results of the risk assessment
- The report should be structured and contain the following main sections:
  - summary;
  - background (contains the composition of the working group of experts involved in the risk assessment, a description of the terms of reference for the risk assessment and the prerequisites for the risk assessment);
  - methodology and materials (including description of assumptions);
  - description of data analysis
  - results of risk assessment (units depending on the field of activity in which the risk assessment was conducted);
  - description of uncertainty;
  - conclusions;
  - recommendations;
  - references.

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THANK YOU FOR YOUR ATTENTION

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