



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

Risk analysis concept

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- general aspects on risk analysis based on OIE methodology
- components of risk analysis
- risk assessment

Hazard

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

Risk

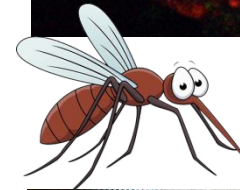
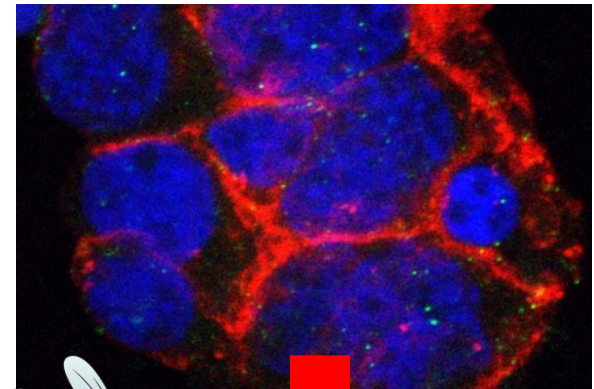
- ➔ probability of something negative to happen
- ➔ probability and magnitude of consequences of exposure to hazards

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





The World Organization for Animal Health (OIE):

- Based on the Covello-Merkhofer model
- **Universal methods.** They give the opportunity to answer different types of risk questions

More focused on the risks associated with imports of animals or food of animal origin



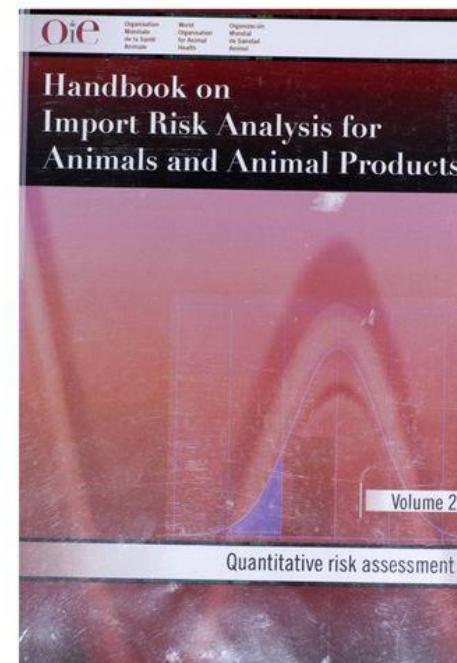
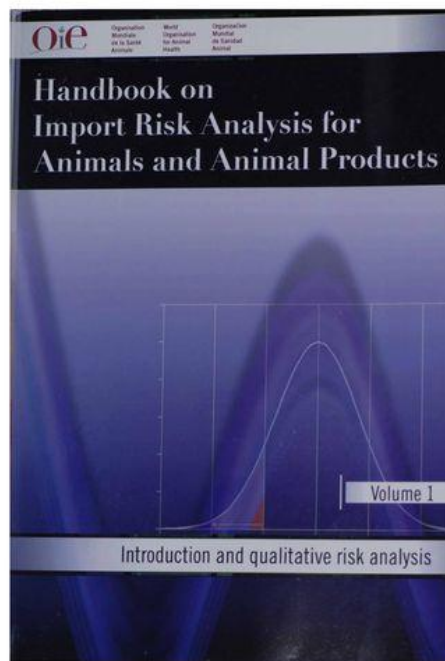
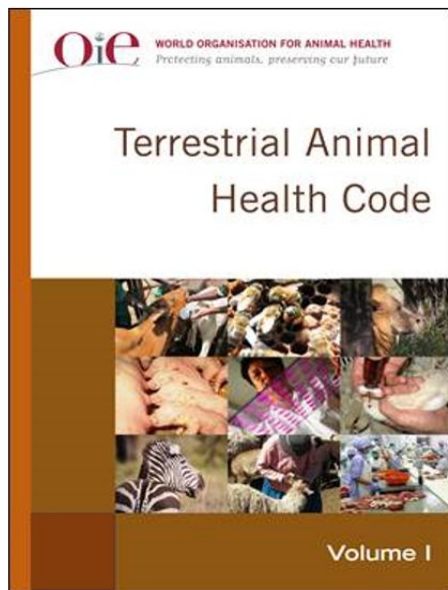
Codex Alimentarius Commission (CAC):

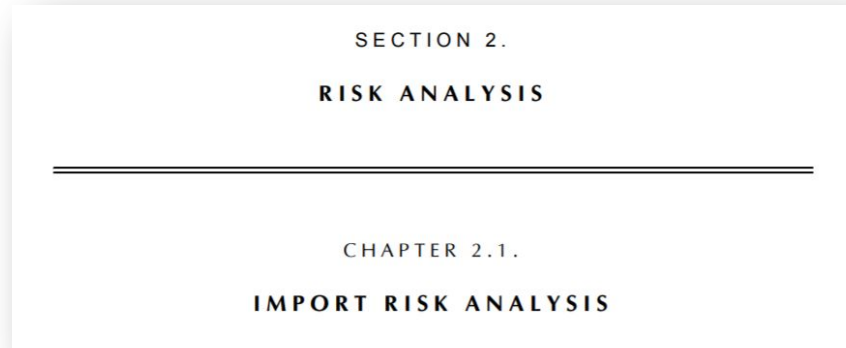
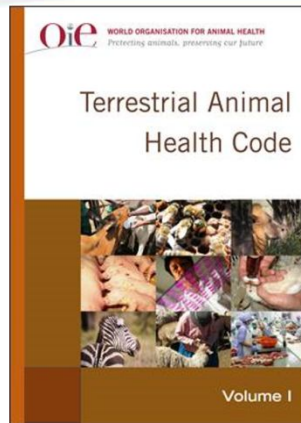
- Based on the model of the National Academy of Sciences of the United States
- Designed to answer questions about maximum levels of substances and pathogens in food;

More focused on the food safety risks



OIE approach to risk analysis:

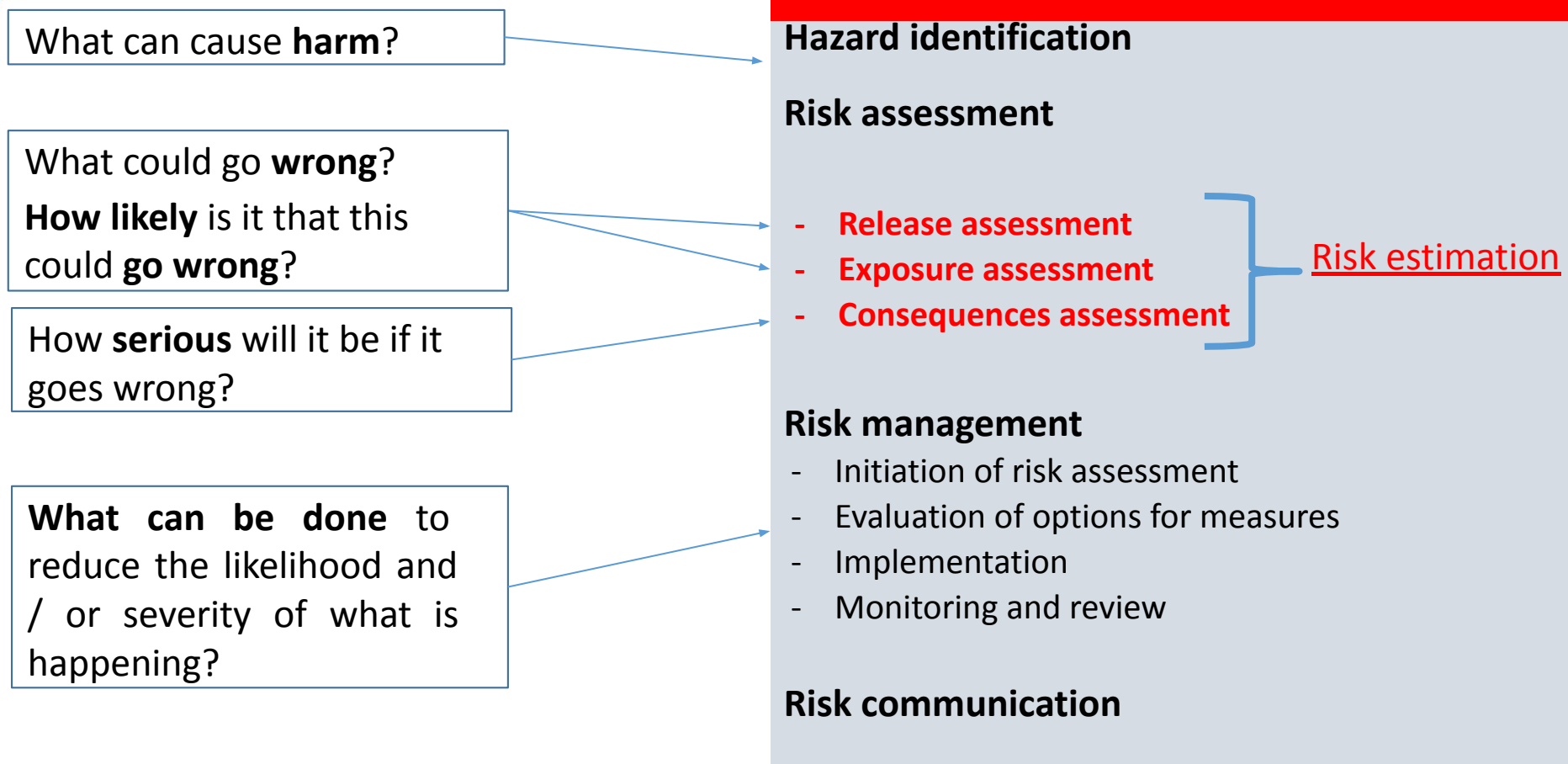




The importation of animals and animal products involves a certain level of disease risk to the importing country. This risk may be represented by one or several diseases, infections or infestations.

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 analysis should be transparent. Transparency means the comprehensive documentation and communication of all data, information, assumptions, methods, results, discussion and conclusions used in the risk analysis. **This is necessary so that the exporting country and all interested parties are provided with clear reasons for the imposition of import conditions or refusal to import.**

OIE approach to risk analysis:





- What is the risk of disease (s) being imported from live turkeys from country X?
- What measures will help reduce the risk of disease?
- Based on the results of the risk assessment, it was decided to import turkeys from country X under such conditions:
 - Tests in the country of origin
 - Quarantine
 - Tests in the country of destination



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

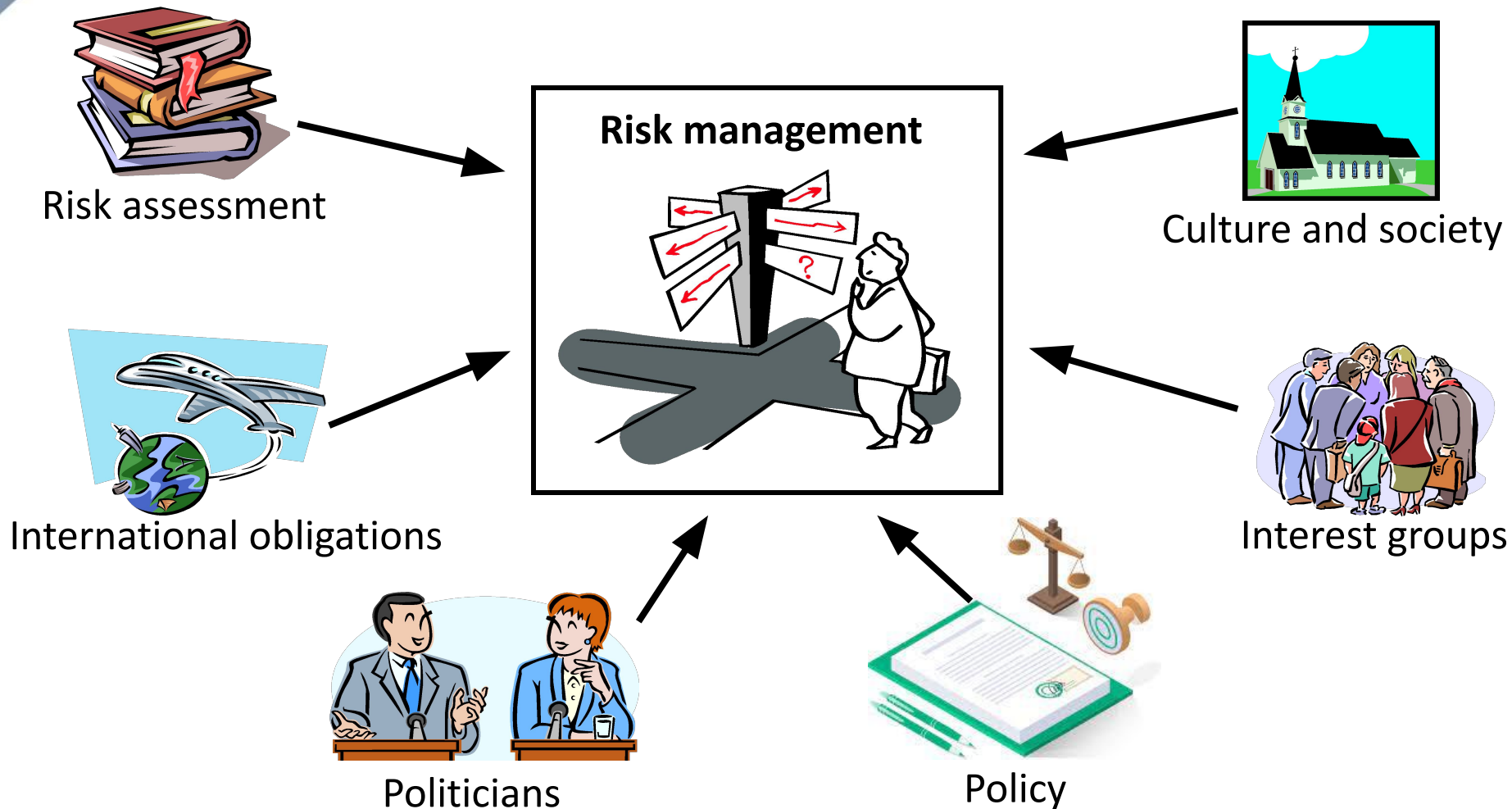
process of selecting alternative solutions based on the results of risk assessment and implementation of appropriate management (control) measures



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

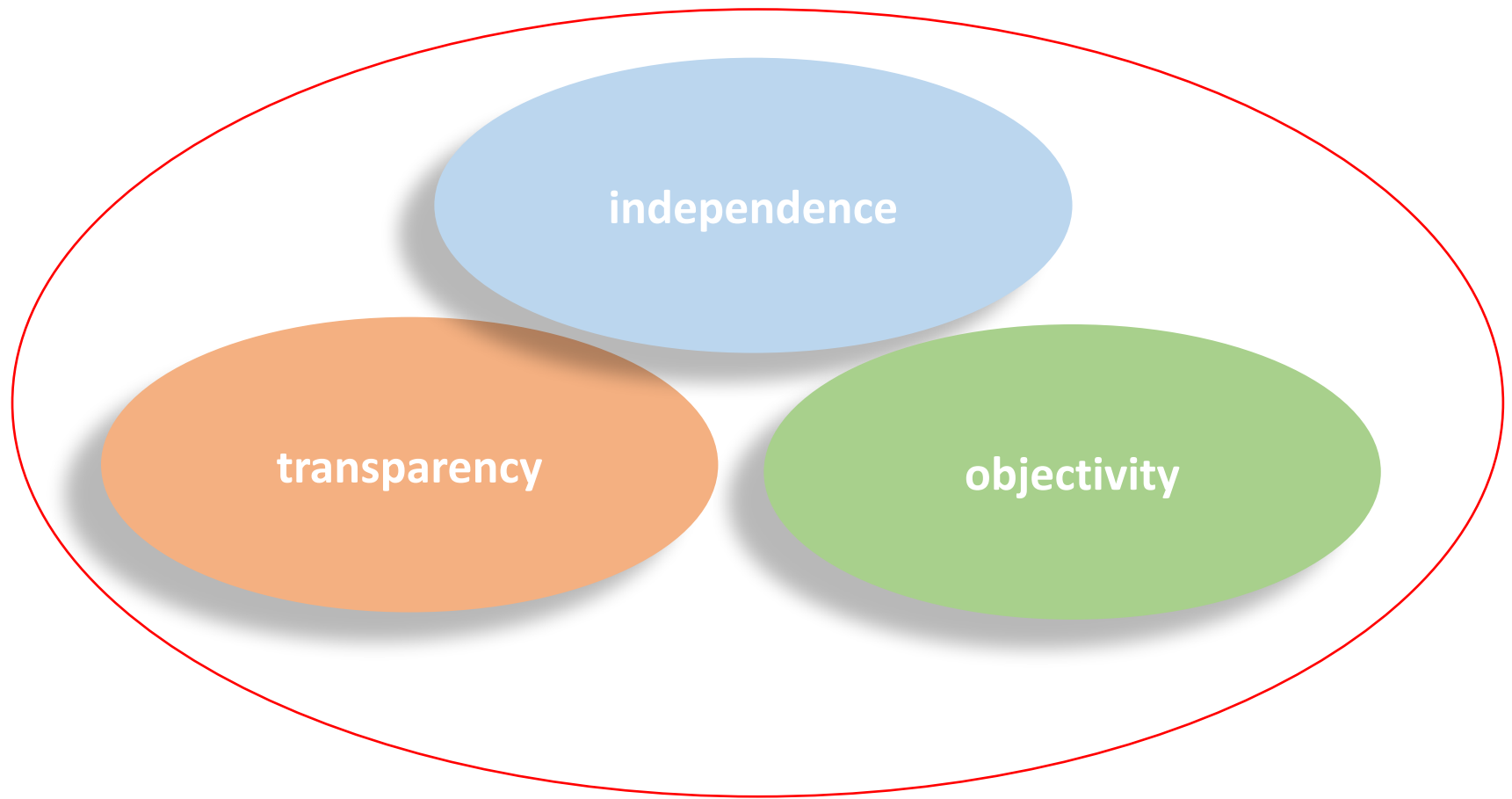


What is risk assessment?





- 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



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.



- ✓ 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.





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



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*
 - *Quantitatively*

RESULTS





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





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.



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



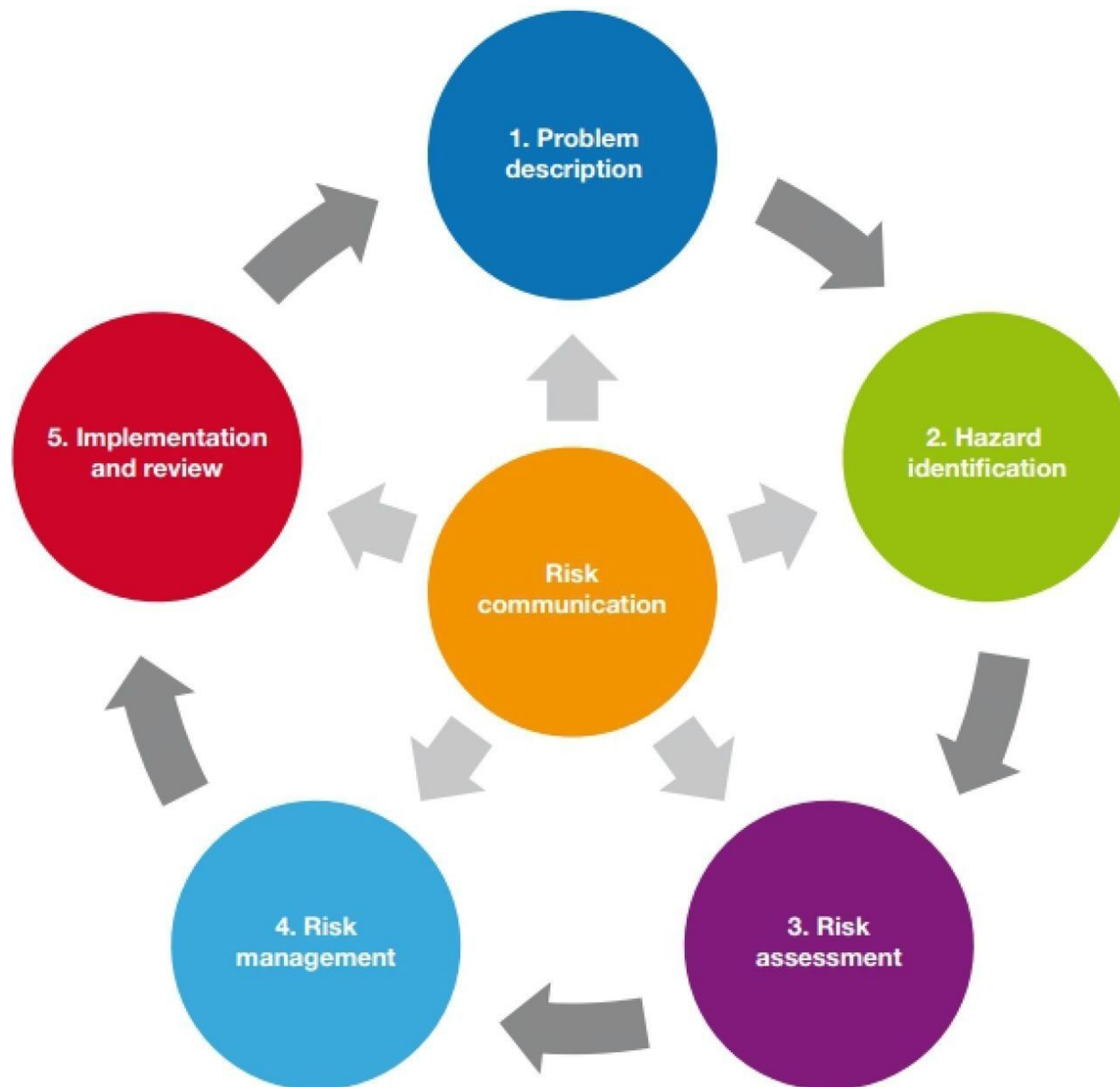


Risk assessment report



- 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.

Process of the risk analysis:





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THANK YOU FOR YOUR ATTENTION

*Project funded by the European Union Aid Programme for the Turkish Cypriot community,
implemented by NSF Euro Consultants Consortium*