EFSA's information meeting: identification of welfare indicators for monitoring procedures at slaughterhouses
Parma, 30/01/2013

European Food Safety Authority

The role of EFSA in Animal Welfare
Activities of the AHAW Unit

Franck Berthe
Head of Animal Health and Welfare Unit (AHAW)

Outline

1. What is *EFSA*?

2. Contributing to the *development of standards* for animal welfare

3. Performing animal welfare *risk assessment* in a global context

4. Promoting *outcome-based measures* for animal welfare

1 WHAT IS EFSA?

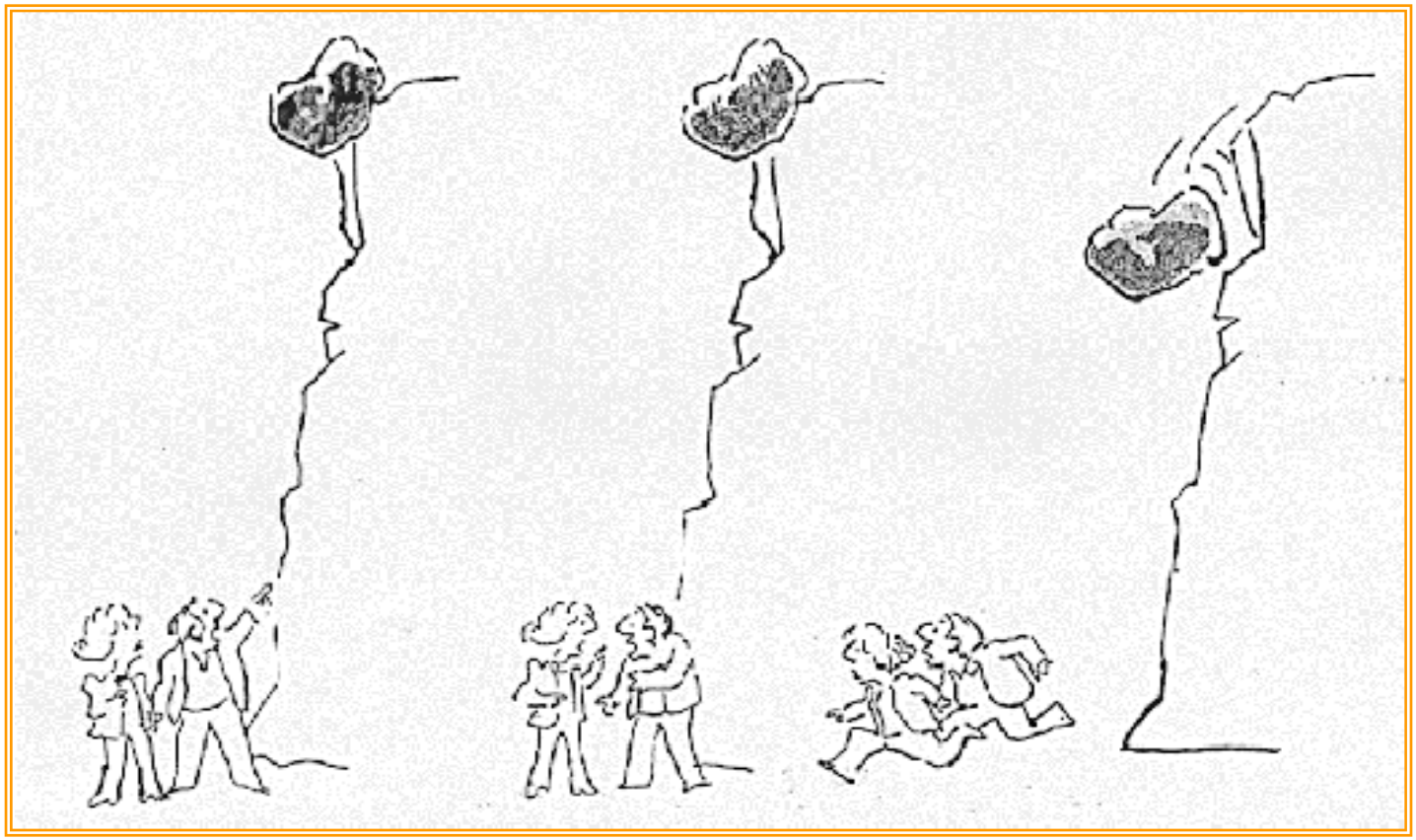
Creation of EFSA in 2002

- Set up by Regulation (EC) No 178/2002
- Provide scientific advice, opinions, information, and technical support for Community legislation and policies
- Collect and analyse data to allow characterisation and monitoring of risks
- Promote and coordinate development of uniform risk assessment methodologies
- Communicate risks related to all aspects of EFSA's mandate

Risk Analysis

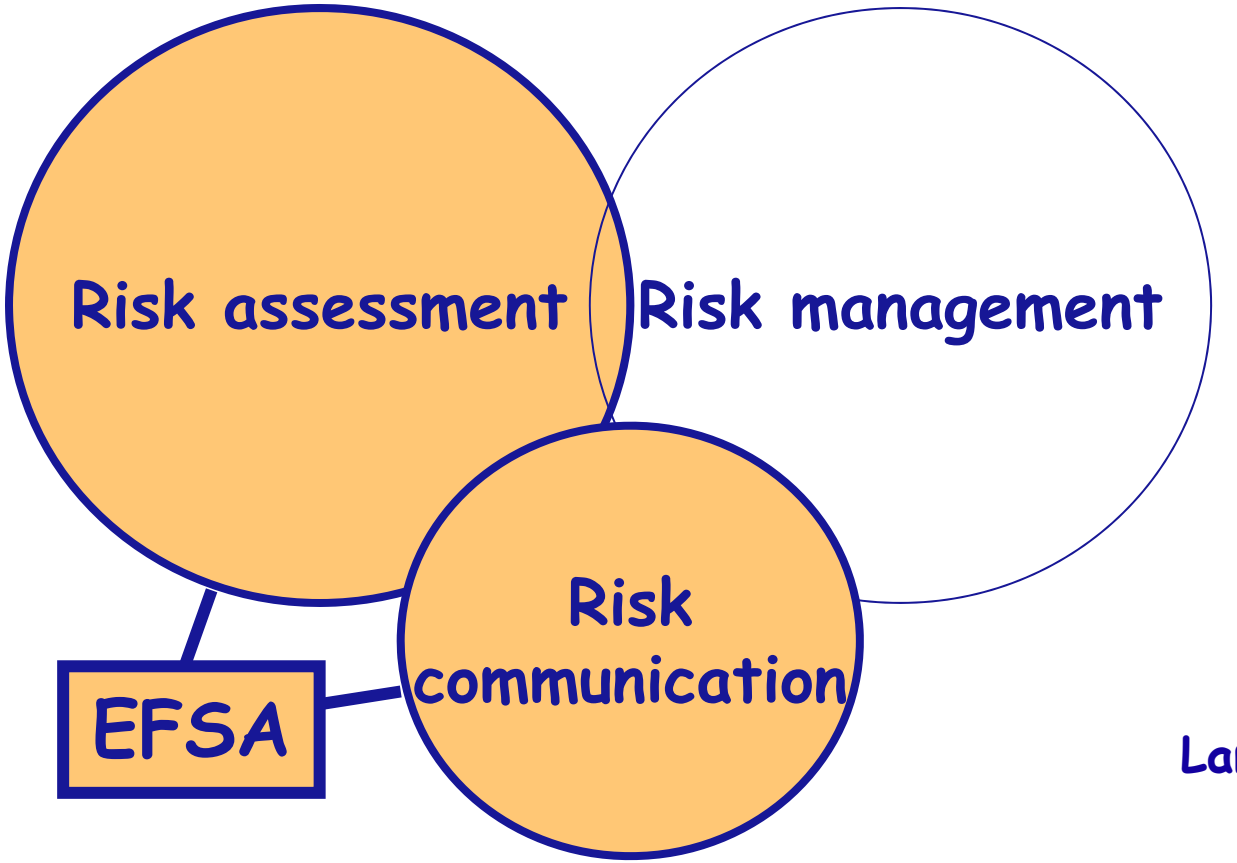
A process consisting of three components

risk assessment risk communication risk management



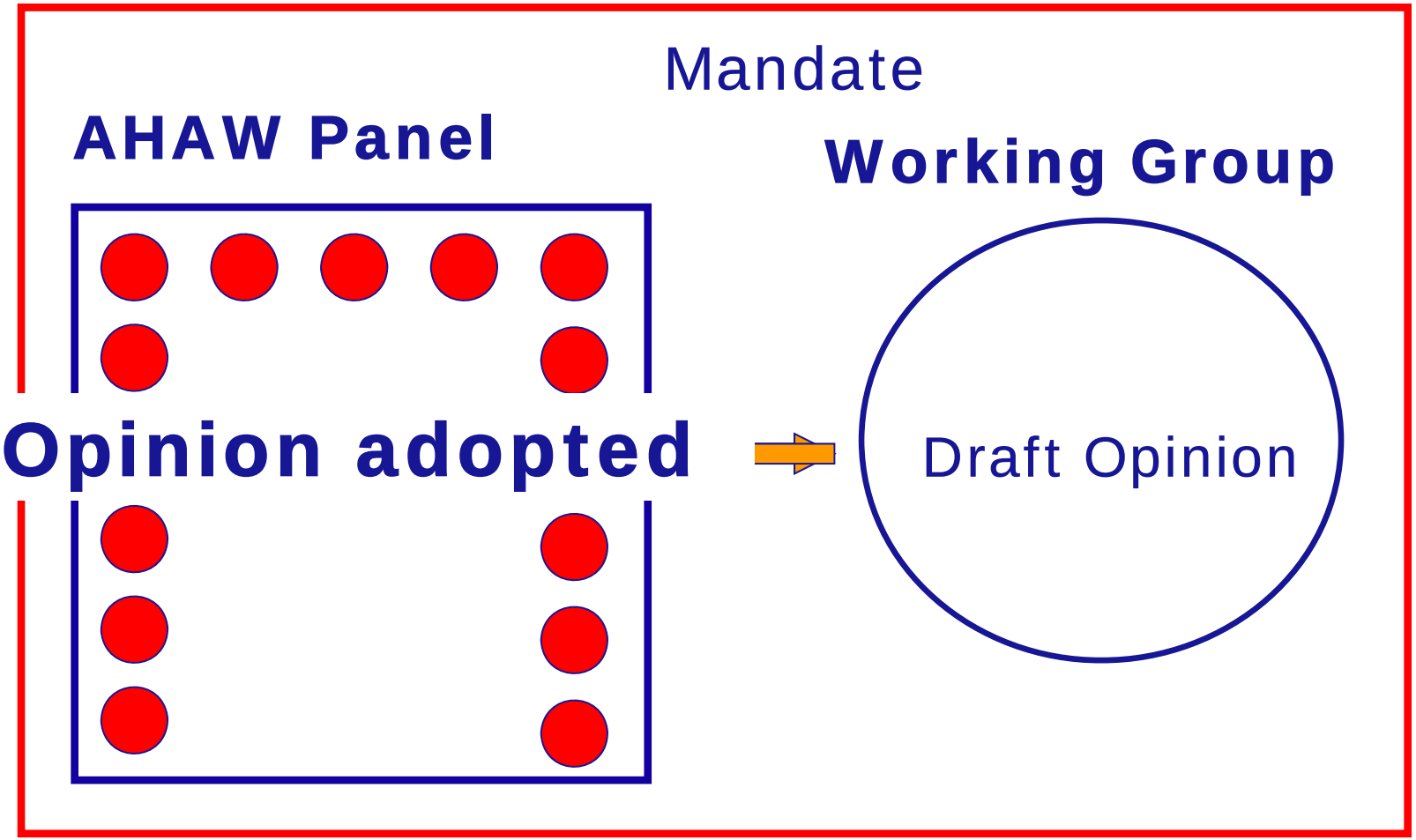
The EFSA paradigm

Hazard identification, Risk assessment, Risk management, Risk communication *(Covello & Merkhofer, 1993)*



adapted from Lammerding (1996)

From the “question” to the “answer”



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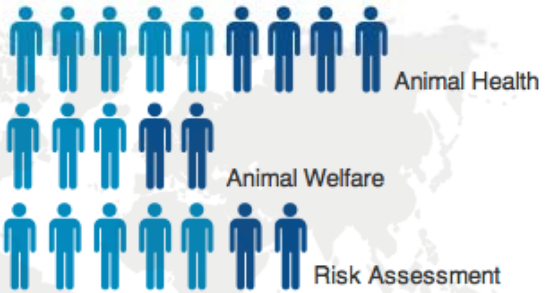
The AHAW Panel of EFSA 2004-2012

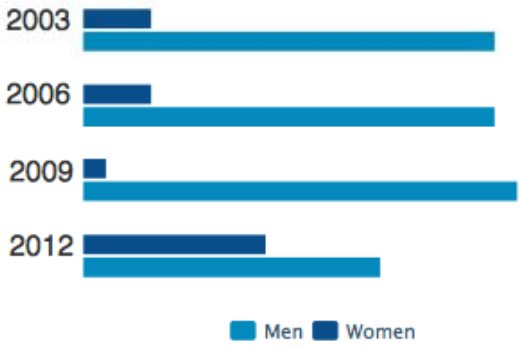
The AHAW Panel deals with risk at the human animal interface

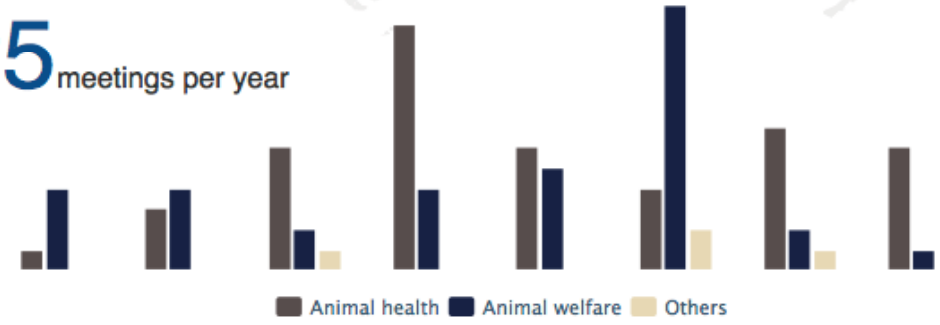
85 opinions since 2004

450 experts per year

125 meetings per year







Recent assessments

- **Methods of Stunning and Killing of Fish**
- **Welfare of Dairy Cows**
- **Genetic Selection of Broilers**
- **Housing and Management of Broiler Breeders**
- **Practice of Harvesting Feathers on live geese**
- **Animal Welfare during Transport**
- **Guidance for Risk Assessment on Animal Welfare**
- **Guidance on Animal Health and Welfare aspects of GM-animals**
- **Use of animal based indicators for animal welfare (livestock species)**

The AHAW management plan aims at:
- Fine-tuning the existing EU legislation (e.g. electrical requirements for waterbath stunning equipment in Regulation 1099/2009)
- Implementing the EU Strategy for the Protection and Welfare of Animals (e.g. move towards a more flexible legislation based on welfare parameters to be measured on the animals)

2

CONTRIBUTING TO THE DEVELOPMENT OF STANDARDS FOR ANIMAL WELFARE

Animal Welfare, Health and Food Safety

- Animal welfare as a public good

- The concept of animal welfare is not restricted to the protection and well-being of animals. Welfare of animals has an overall impact on the condition of the animals, including possible implications on animal health and food safety.

- The Panel on Animal Health and Welfare (AHAW) deals with all aspects of animal health and welfare primarily related to food producing animals at the human-animal-environment interface

Animal Welfare at EFSA

- While **ethical**, **socio-economic**, **cultural** and **religious considerations** are clearly **not part of EFSA's remit**, one should recognise that animal welfare is a complex**, multi-faceted** issue which includes ethical, socio-economic, cultural and religious dimensions

Impact on EU legislation

AHAW Opinion	Legislation	Follow-up
Transport and Animal Welfare (2004). Microclimate transport (2004) Welfare of animals during transport (2011)	Regulation 1/2005, protection of the animals during transport	Commission Report on the protection of animals during transport (2011)
Stunning/killing of main commercial species (2004); Stunning/killing of minor species (2006)	Council Regulation (EC) 1099/2009 on the protection of animals at the time of killing	Recommendations on farmed fish are not included (seven opinions on S&K of farmed fish in 2009) Commission's study on welfare of farmed fish at killing
Welfare aspects of genetic selection of broilers and housing & management of broiler breeders (2 SOs + 3 tech reports in 2010)	Council Directive 2007/43/EC Art. 6: the Commission will submit a report to the European Parliament and to the Council; that report may be accompanied by appropriate legislative proposals, if necessary.	

3

PERFORMING ANIMAL WELFARE RISK ASSESSMENT IN A GLOBAL CONTEXT

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EFSA Journal 2012;10(1):2513

SCIENTIFIC OPINION

Guidance on Risk Assessment for Animal Welfare[1]

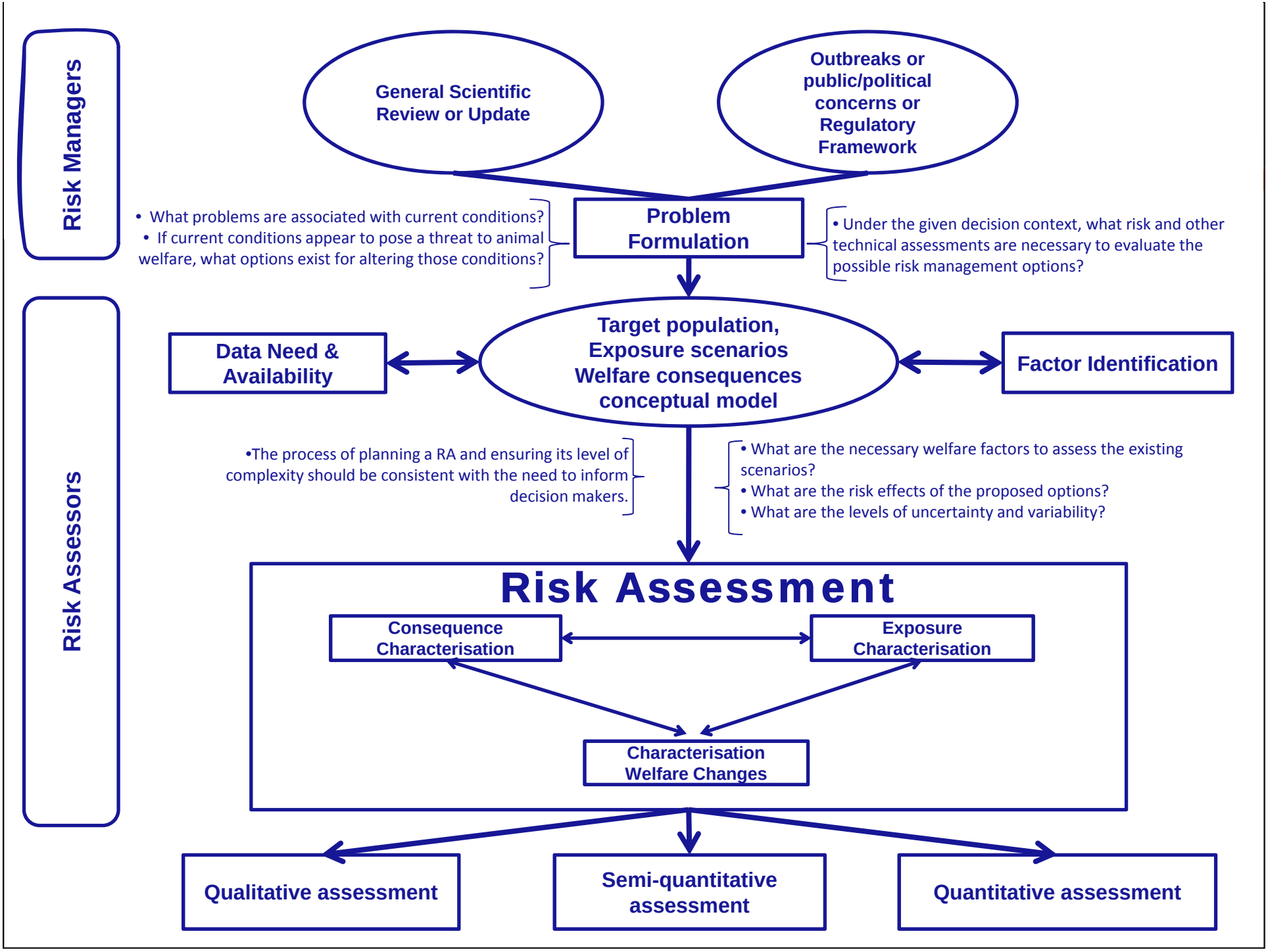
EFSA Panel on Animal Health and Welfare (AHAW)[2, 3]

European Food Safety Authority (EFSA), Parma, Italy

This opinion, published on 15 February, replaces the earlier version published on 25 January 2012[4]

ABSTRACT

The document provides methodological guidance to assess risks for animal welfare, considering the various husbandry systems, management procedures and the different animal welfare issues. The terminology for the risk assessment of animal welfare is described. Risk assessment should not be carried out unless the relevant welfare problem is clearly specified and formulated. The major components of the problem formulation are the description of the exposure scenario, the target population and the conceptual model linking the relevant factors of animal welfare concern. The formal risk assessment consists of exposure assessment, consequence [illegible] The systematic evaluation of the various aspects and components of [illegible] problem formulation and risk

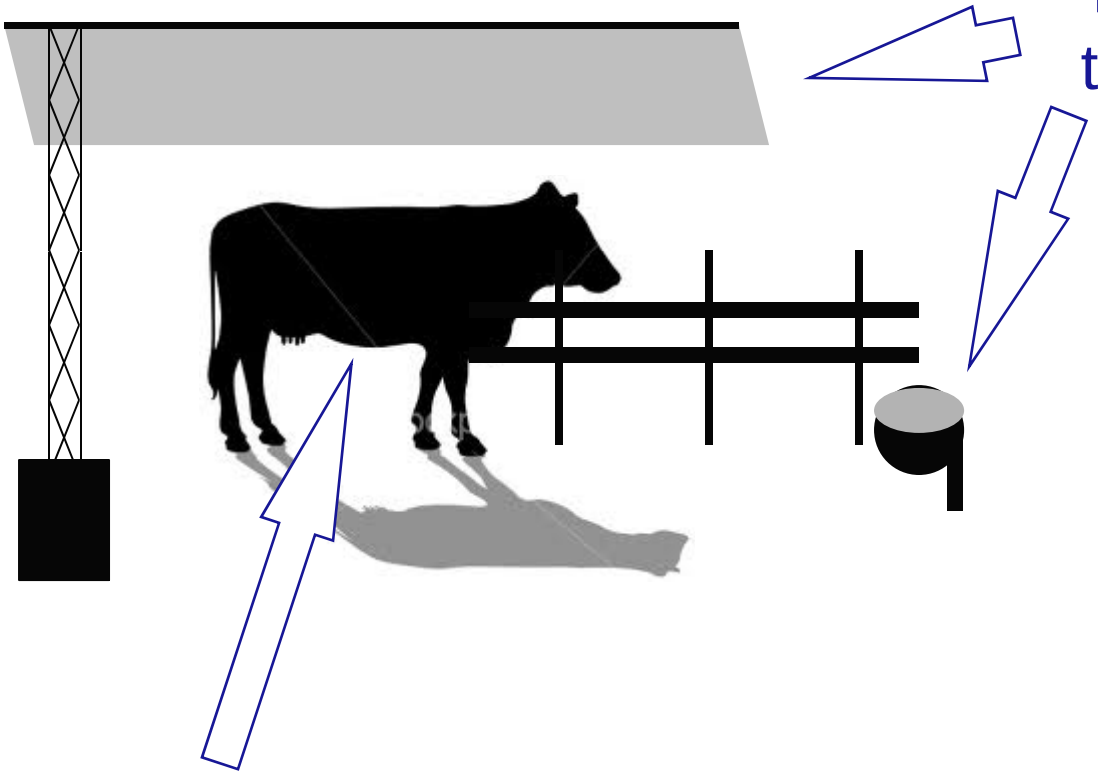

Risk Managers
General Scientific Review or Update
Outbreaks or public/political concerns or Regulatory Framework
• What problems are associated with current conditions?
• If current conditions appear to pose a threat to animal welfare, what options exist for altering those conditions?
Problem Formulation
• Under the given decision context, what risk and other technical assessments are necessary to evaluate the possible risk management options?
Risk Assessors
Data Need & Availability
Target population, Exposure scenarios Welfare consequences conceptual model
Factor Identification
•The process of planning a RA and ensuring its level of complexity should be consistent with the need to inform decision makers.
• What are the necessary welfare factors to assess the existing scenarios?
• What are the risk effects of the proposed options?
• What are the levels of uncertainty and variability?
Risk Assessment
Consequence Characterisation
Exposure Characterisation
Characterisation Welfare Changes
Qualitative assessment
Semi-quantitative assessment
Quantitative assessment

Risk assessment

- The quality of risk assessment depends on the appropriate formulation of questions for risk assessment, clear understanding of their background, best use of scientific data and expert opinion, and advanced risk assessment methodology applied to address the question at hand


4
PROMOTING OUTCOME-BASED MEASURES FOR ANIMAL WELFARE

Animal based indicators



The input based approach to welfare assessment

The outcome based approach to welfare assessment

EFSA Work on ABMs: TORs

1. How ABMs could be used to ensure the fulfilment of the EFSA recommendations
2. How suggested assessment protocols cover the main hazards identified in EFSA scientific opinions and viceversa for an overall classification of the welfare situation
3. Which relevant animal welfare issues cannot be assessed using ABMs and what kind of alternative solutions are available to improve the situation
4. Main factors in the various husbandry systems which have been scientifically proven to have negative effects on the welfare of animals

EFSA Journal 2012; 10(1):2554

SCIENTIFIC OPINION

Scientific Opinion on the use of animal-based measures to assess welfare of dairy cows[1]

EFSA Panel on Animal Health and Welfare (AHAW)[2,3]

European Food Safety Authority (EFSA), Parma, Italy

ABSTRACT

Animal-based measures, identified on the basis of scientific evidence, can be effectively used in the evaluation of the welfare of dairy cattle on farm in relation to laws, codes of practice, quality assurance schemes and management. Some of these measures are also appropriate for ante-mortem inspection and there are additional post-mortem animal-based measures which can be taken at the slaughterhouse. The validity and reliability of the measures should be known. There do not seem to be any animal welfare issues that can not be addressed using animal-based measures, but there may be practical constraints that make it difficult to use some animal-based measures or which make the use of non-animal-based measures preferable in some situations. Non-animal-based measures can be used when the association between them and the welfare outcome is strong and when they are more efficient than animal-based measures as a means to safeguard welfare. Some animal-based measures are early indicators and can be used to predict those animals at risk of poor welfare. Others can only be used for welfare assessment if collected over a long period, in which case they are best taken from historical records or recording systems. For an overall classification of welfare, a wide range of measures is needed. However, it is unnecessary to use all animal-based measures on every occasion. The choice of animal-based measures will depend upon the specific objectives of the assessment. The full list is comparable to a 'toolbox', from which the appropriate range of measures can be selected. The Welfare Quality® protocol provides information on the majority of the welfare outcomes of the main hazards identified in the EFSA Scientific Opinions but not those where time limitation prevents it. The extent to which short-term management can prevent the negative effects of hazards arising from genetic selection, and of most housing-related problems, is extremely limited. Herd monitoring and surveillance programmes should be implemented within the dairy industry using a range of appropriate animal-based measures in order to document welfare changes over time. There should be both initial [illegible] training of assessors to ensure valid and reliable welfare measurement.

SCIENTIFIC OPINION

...use of animal-based me... pigs[1]

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EFSA Journal

SCIENTIFIC OPINION

Scientific Opinion on the use of animal-based measures to assess w... broilers[1]

EFSA Panel on Animal Health and Welfare (AHAW)[2,3]

European Food Safety Authority (EFSA), Parma, Italy

ABSTRACT

Animal-based measures (ABM) can be used effectively in the on-farm evaluation of broiler welfare [illegible]

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KEY WORDS

Broiler welfare, welfare assessment, risk assessment, welfare outcome indicators, slaughterhouse inspection, on-farm assessment, animal-based measures.

1 On request from the European Commission, Question No EFSA-Q-2011-00818, adopted on 22 June 2012.

[illegible]

Suggested citation: EFSA Panel on Animal Health and Welfare (AHAW); Scientific Opinion on the use of animal-based measures to assess welfare of broilers. EFSA Journal 2012;10(7):2774. [74 pp.] [illegible]

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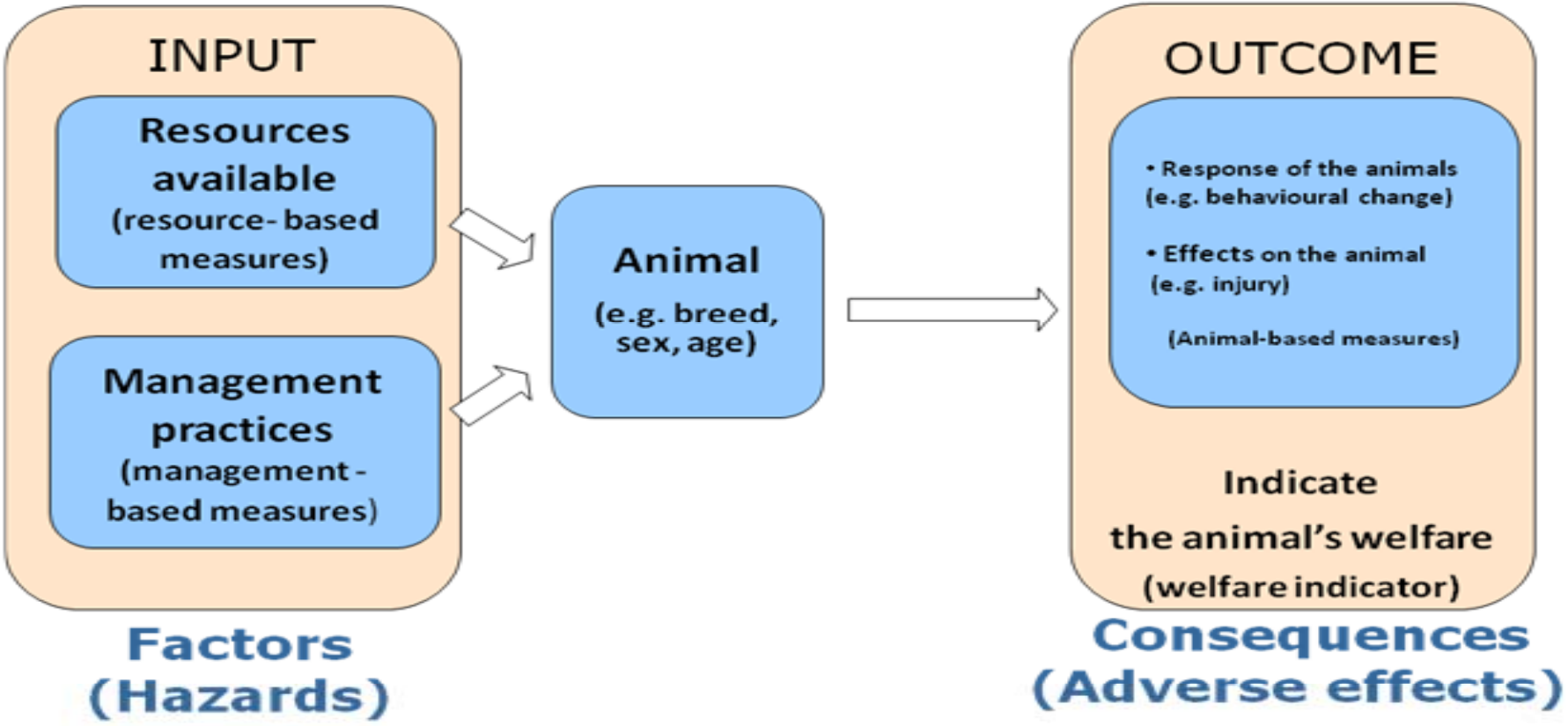
RA and ABMs: the shift



Criteria for valid and robust ABMs

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Criteria	Explanations and examples
They should accurately measure and indicate the welfare consequence for an animal **Fit for purpose/Validity**	There are several ways of assessing validity, such as expert opinion or (preferably) by deriving a study-based diagnostic validity related to the relationship between a specific welfare outcome indicator and an independently performed assessment of the welfare outcome
They should have low variability when repeatedly measured by the same observer **Repeatability**	This means low intra-observer variability and resulting high repeatability
They should be consistent when measured by different observers on the same animal **Reproducibility**	This means low inter-observer variability and high reproducibility. People should be trained to the "gold standard" for the measure and this training should be repeated at regular intervals so that observers are "recalibrated"
They should not be affected by external factors that are not related to the welfare of the animals **Robustness**	If the welfare of the animals does not change with weather or time of year, then the measures should also not be affected by weather or time of the year. This indicates a high robustness
Taking the measures should be feasible for the purpose of the data collection **Feasibility**	They should not be costly to make and should not involve much observer/farmer time, making them practical and feasible
Where the measures vary over time, e.g. time of day, then the measures should be based on a representative time sample. **Fit for use**	This is particularly true for behavioural measures, e.g. how much time animals spend lying down. Furthermore, indicators which are valid at one part of the production cycle may not be applicable in other phases

Dialogue with stakeholders

EFSA Technical meeting on the use of ABMs for the welfare of dairy cows, pigs and broilers (4-5 July 2012)

- Moving forward **quantitative risk assessment** of the welfare of food producing animals and provide risk assessors with validated tools to flag and quantify main animal welfare issues

- Focusing on ABMs for which data sources are already available in the field, easy to use on the farm and that can be recorded directly by farmers

- Need to work on the definition, **fitness for purpose** and **validation** of the measures, and consequently on the identification of the most robust and recordable **combinations** of ABMs

- http://www.efsa.europa.eu/en/supporting/doc/341e.pdf

Way forward: validating ABMs

Call for proposals - Identification, validation and collection of data on animal-based measures to create a database for quantitative assessment of the welfare of dairy cows (CFP/EFSA/AHAW/2012/01)

EFSA has called for a proof of concept on the use of animal-based measures to assess the welfare of animals, based on a pilot project and involving several EU Member States, to collect robust and validated ABMs on dairy cows

http://www.efsa.europa.eu/en/art36grants/article36/cfpefsaahaw201201.htm

Take home message

Integration of RA and ABMs

- EFSA **develops methodological guidance** on risk assessment (RA) which can be applied globally
- **Robust methodological framework** for RA in animal welfare is a long haul of the AHAW Panel, ensuring sustainability of standards in a global context
- **Harmonised** definition, **validation** and recording methods for ABMs are needed for the purpose of RA
- Systematic collection of standardised field data on ABMs and storage in defined databases could assist in assessing **validity** and **robustness** of ABMs
- **ABMs** could be used in welfare monitoring systems, allowing for **future quantitative risk assessments**

What's next?

Welfare indicators and their potential use:

.....Monitoring procedures at slaughterhouses.....

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