

# **The Network SafeGameMeat (COST Action 22166)**

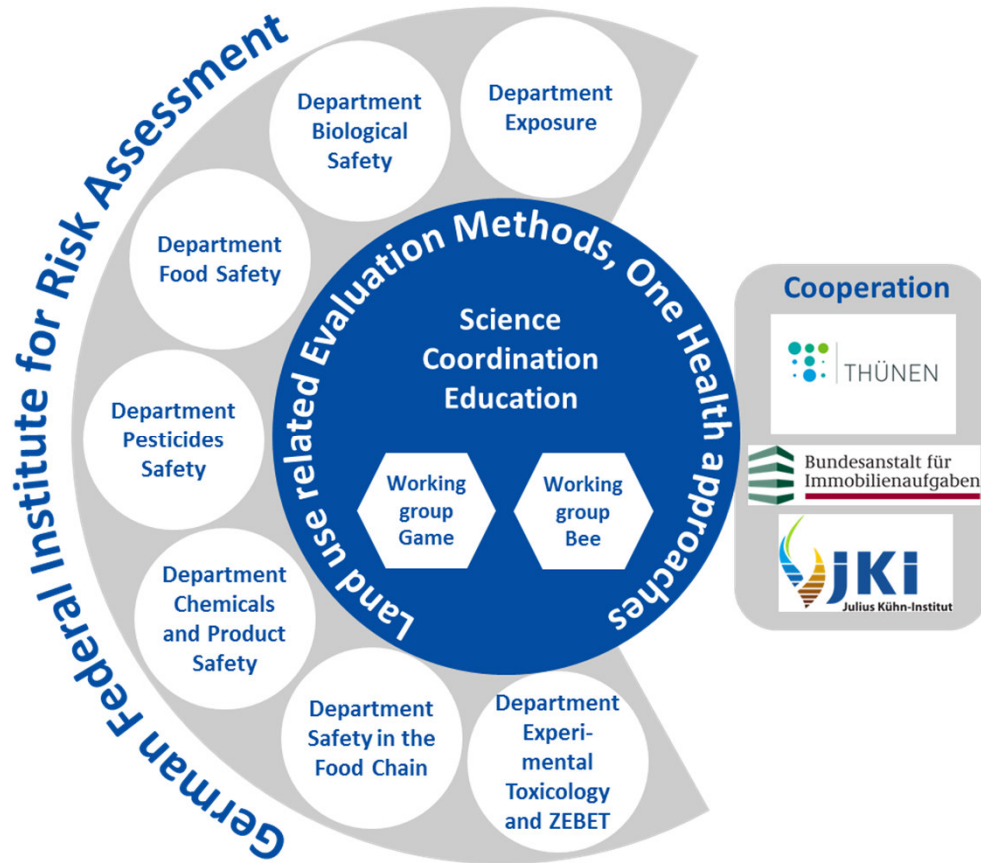
**Dr. Anneluise Mader**

**Unit – BfR-Center for Land Use Related Evaluation Methods, One Health Approaches  
Department – Safety in the Food Chain  
The German Federal Institute for Risk Assessment**

# **The BfR-Center 8SZ**

## **Land Use Related Evaluation Methods, One Health Approaches**

# The BfR-Center 8SZ

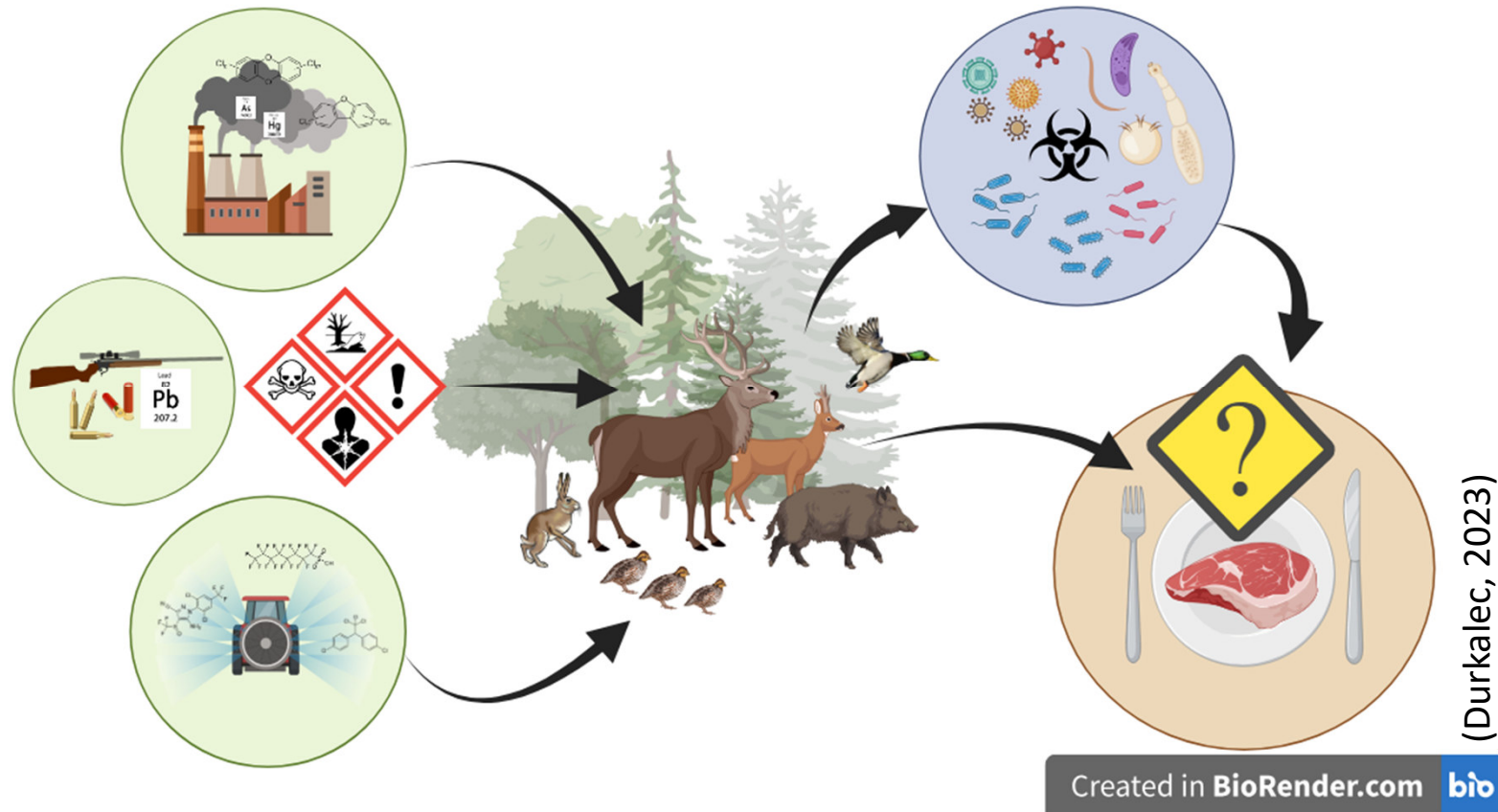


Johann Heinrich von Thünen-Institute, Federal Research Institute for Rural Areas, Forestry and Fisheries (THÜNEN)

Institute for Federal Real Estate (BImA)

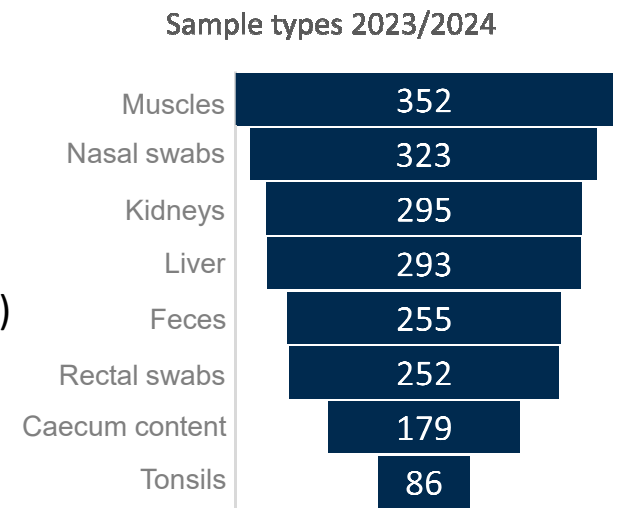
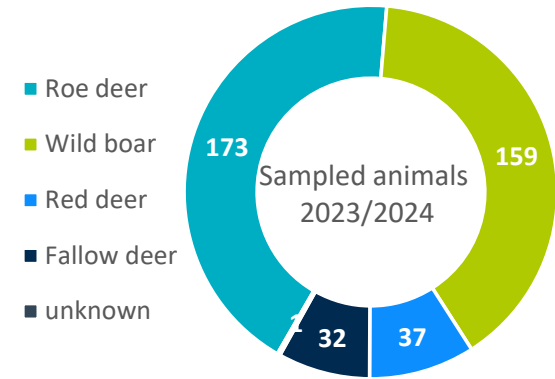
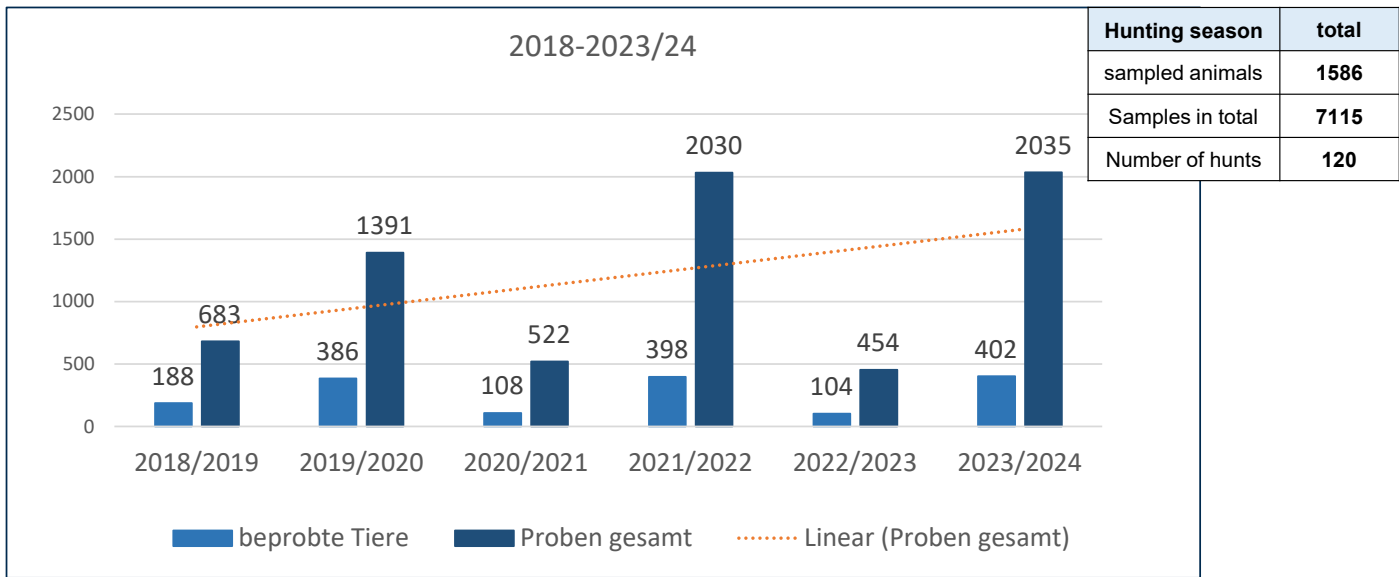
Julius Kühn-Institute – Federal Research Centre for Cultivated Plants (JKI)

# Use Related Evaluation Methods, One Health Approaches





# Sampled animals and samples taken



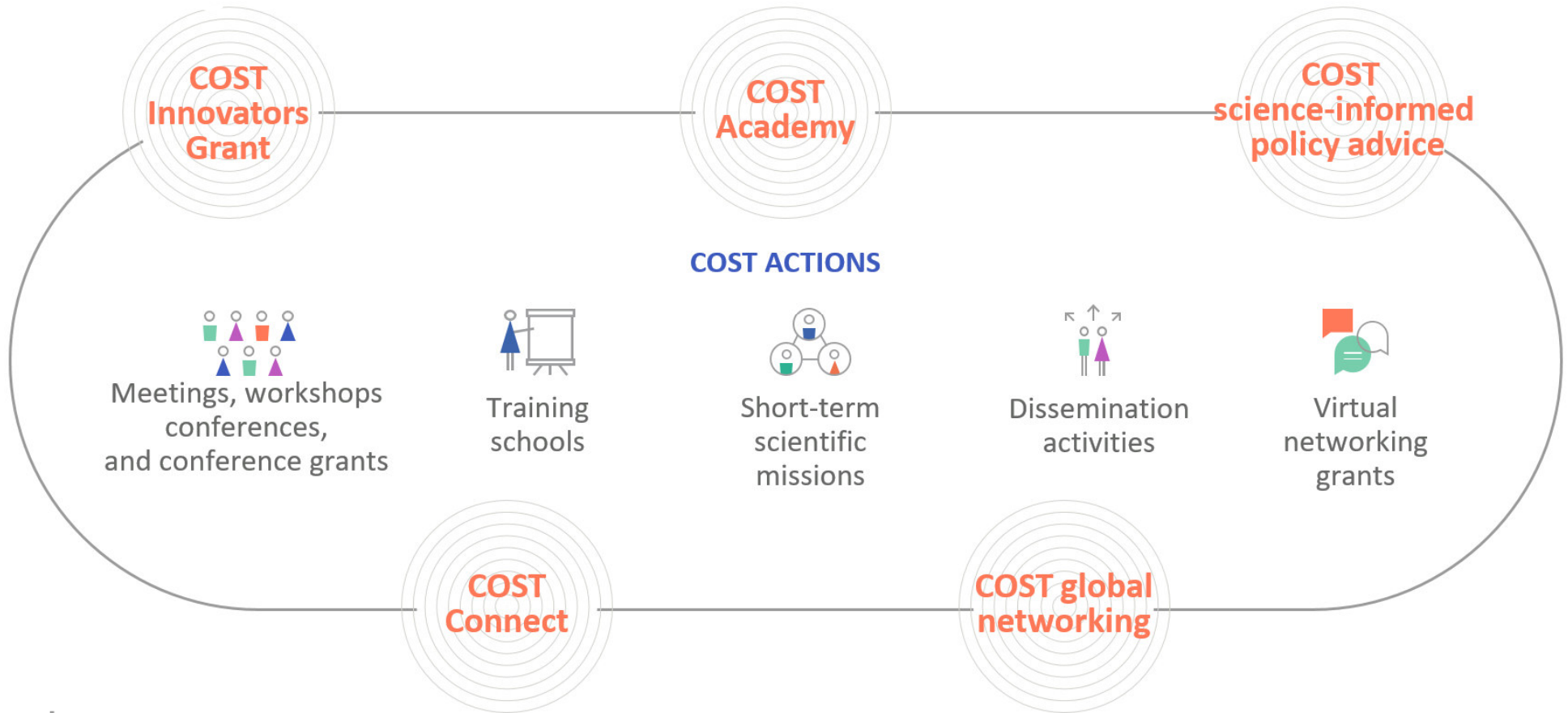
- Data on hunting and zootechnical issues for individual animal (recorded in LIMS)
- Subsamples analysed on biological, chemical and physical parameters
- Current - Publication of the results in scientific publications
- Medium-term - Information material for hunters and interested parties
- Long-term - correlations between biological and/or chemical pathogens

LIMS - laboratory information system

# Bundling expertise and knowledge



# COST Actions





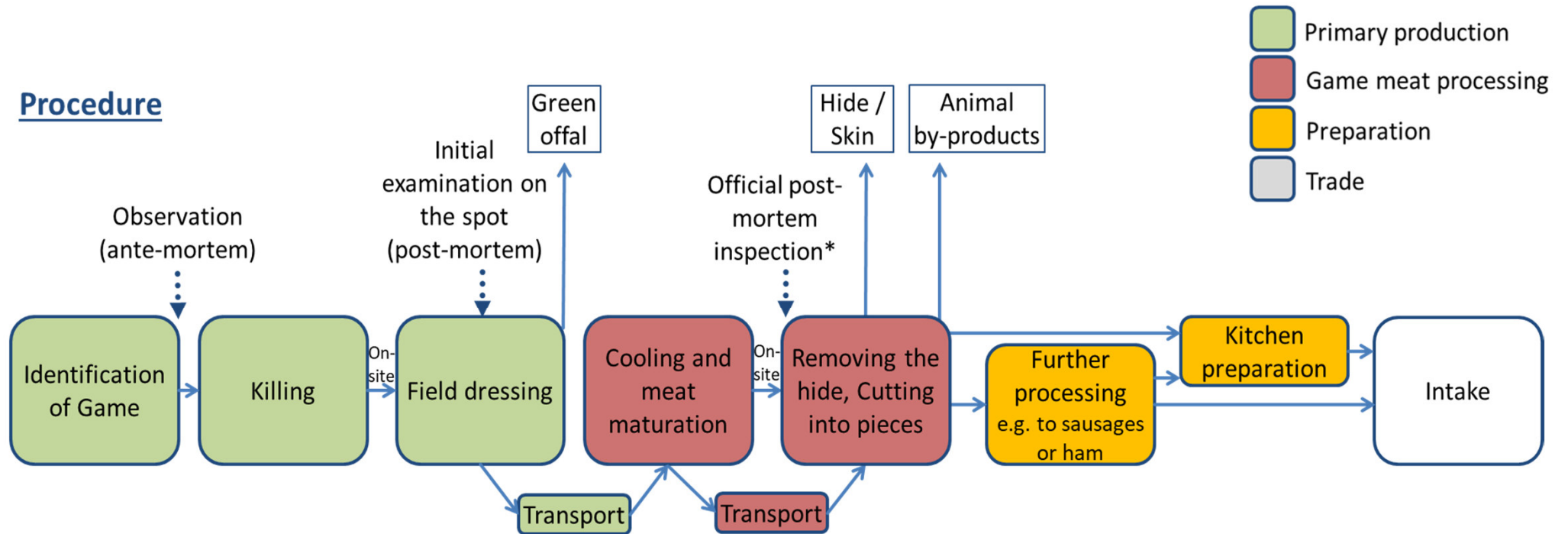
# **The Cost Action SafeGameMeat**

## **Scientific approach**

# The game meat chain

product flows in Europe

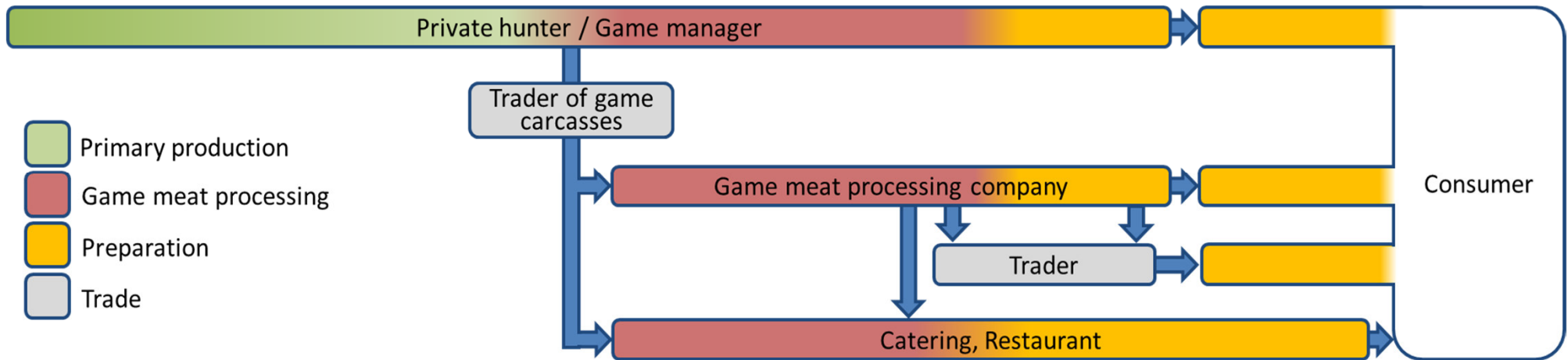
## Procedure



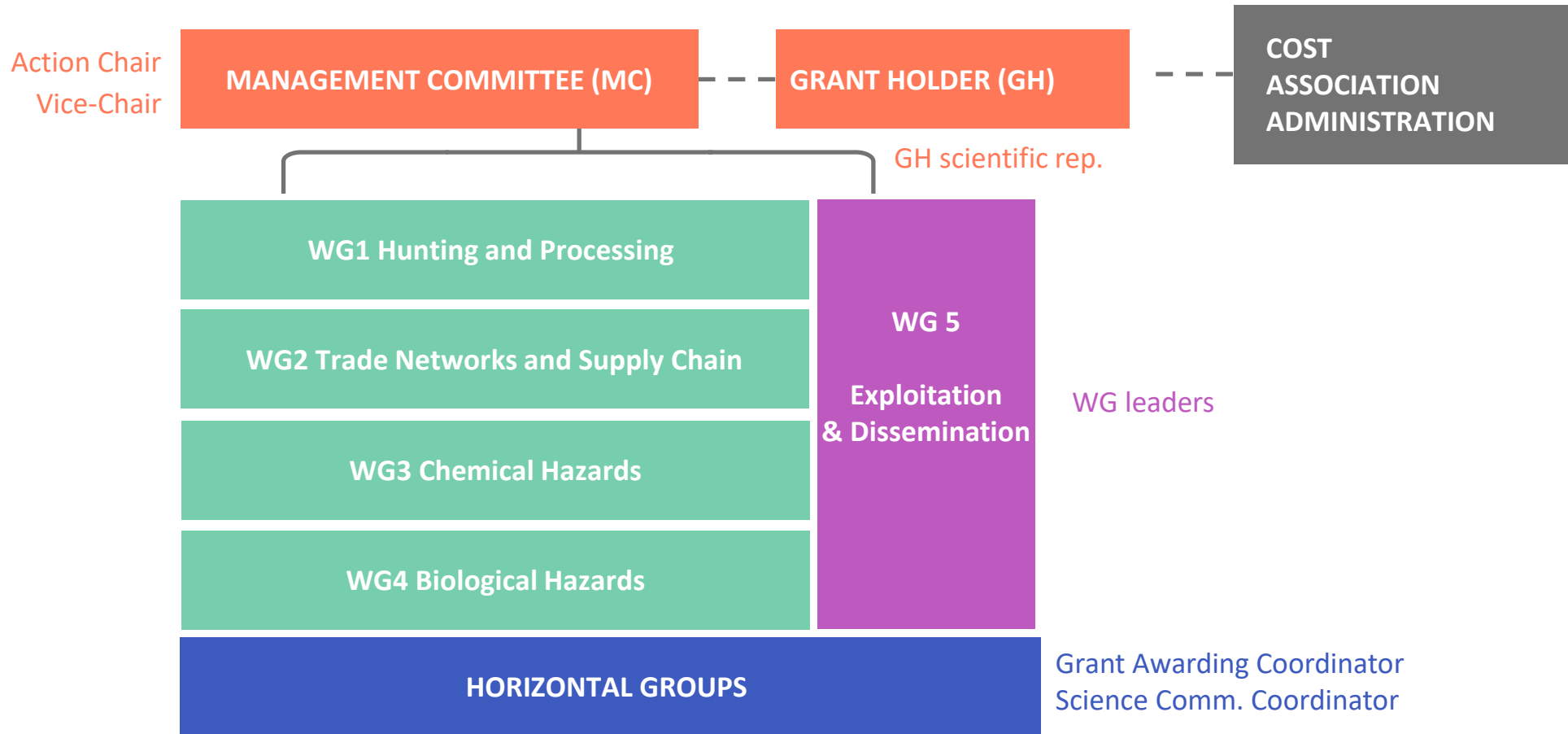
# The game meat chain

product flows in Europe and parties involved

## Involvement parties



# COST Action structure



# Working group 1 - Hunting and Processing

## ...to assess the European hunting sector



Pixabay

- national legal frameworks
- training schemes
- practices of official game meat inspections
- hunting bag

Differences in key aspects of hunting between European countries

Country	Finland (without Åland)	France	Germany	Greece	Italy	Romania	Spain	Switzerland	United Kingdom
Number of active hunters*	302988	1313000	388529	160000	533000	60000	850000	27502	400000
Number of active hunters per 1000 inhabitants	55.1	20.2	4.7	15.3	8.8	3.1	18.2	3.2	5.9
Owner of game / hunting right	land owner	land owner	land owner	state	state (most of area)	land owner	land owner	state	land owner
Hunting system	District hunting	District hunting	District hunting	Licence hunting	District hunting	District hunting	District hunting	Cantonal: District or Licence hunting	District hunting
Administrative hunting year	1.8.-31.7.	1.7.-30.6.	1.4.-31.3.	not available	Calendar year	15.5.-14.5.	Calendar year	1.4.-31.3.	Calendar year
Yearly national hunting statistics available	Ungulates	Yes							
	Other mammals	Yes	No	Yes	Yes, but not public	Only regional data	Yes	Yes	Yes
	Birds								Only for several hunting grounds
Game species with hunting season**	49 (many others can be killed as pest species)	89	57 (sum of national and 16 federal hunting laws)	36	46	56	46	≈ 49 (sum of national and 26 cantonal hunting laws)	not available

\* pay regular hunting fee

\*\* no special permit from local authority necessary, without hybrids, *Corvus corone corone* and *C.c. corvix* treated as one species

## Working group 2 – Trade Network and Supply Chain

...to map trade networks of the game meat chain and to review cross-cultural game meat consumption habits.



Pixabay

**Table 7.** Game meat consumption according to different source

Reference	Game meat consumption (g/person/day)
(Haldimann et al., 2002)	50
(Jarzynska y Falandysz, 2011)	50-100
(Kosnett, 2009)	40-100
(Iqbal et al., 2009)*	24.4-40.7
(EFSA, 2010)	28
ENIDE (AESAN, 2011)	170.89
(Sevillano Morales et al., 2011)*	45-50

\*Data considered to be the most reliable due the representativeness of the survey.

(AESAN-2012-002)

**Table 2.** Mean intake ( $X \pm S$ ) of meat from rabbit, partridge, deer and boar in hunters, non-hunters and total (kg/person/year).

	Rabbit	Partridge	Deer	Boar
Non Hunter	1.14 ± 1.59	0.49 ± 0.61	1.46 ± 4.67	0.81 ± 1.51
Hunter	2.27 ± 2.76	1.01 ± 1.05	2.77 ± 5.27	2.57 ± 4.99
<b>Total</b>	<b>1.85 ± 2.45</b>	<b>0.82 ± 0.94</b>	<b>2.28 ± 5.09</b>	<b>1.92 ± 4.15</b>

(Sevillano Morales et al. 2018)



# WG 3 – Chemical hazards – environmental contaminants

Should legislation regarding maximum Pb and Cd levels in human food also cover large game meat?

Mark A. Taggart, Manuel M. Reglero, Pablo R. Camarero, Rafael Mateo\*

Instituto de Investigación en Recursos Cinegéticos, IREC (CSIC-UCLM-JCCM), Ronda de Toledo s/n, 13071 Ciudad Real, Spain

*Bull Vet Inst Pulawy* 57, 197-201, 2013  
DOI: 10.2478/bvip-2013-0036

## ORGANOCHLORINE PESTICIDES AND POLYCHLORINATED BIPHENYLS IN GAME ANIMALS FROM POLAND

ALICJA NIEWIADOWSKA, TOMASZ KILJANEK, STANISŁAW SEMENIUK,  
AND JAN ŻMUDZKI

NEWS

### Chemische Belastung: Wildbret soll nicht mehr verkauft werden

Eine neue Richtlinie und chemische Verunreinigungen führen dazu, dass kein Wildbret von der Sau in einem bayerischen Landkreis verkauft werden soll.

Technology  
Wild boar as a PFAS trap | hot online  
May 8, 2023

Studie enthüllt

### Atombomben lassen unsere Wildschweine bis heute strahlen

Fast 38 Jahre nach Tschernobyl sind immer noch Wildschweine in Baden-Württemberg radioaktiv verseucht. Eine Ursache neben der Reaktorkatastrophe wurde bisher allerdings übersehen.



# WG 3 – Chemical hazards – organic contaminants

## Environmental Contaminant Concentrations in Canada Goose (*Branta canadensis*) Muscle: Probabilistic Risk Assessment for Human Consumers

KATHERINE HORAK,<sup>1\*</sup> RICHARD CHIPMAN,<sup>2</sup> LISA MURPHY,<sup>3</sup> AND JOHN JOHNSTON<sup>4</sup>

<sup>1</sup>U.S. Department of Agriculture, Animal and Plant Health Inspection Service, National Wildlife Research Center, Fort Collins, Colorado 80521; <sup>2</sup>U.S. Department of Agriculture, National Rabies Management Program, Concord, New Hampshire 03301; <sup>3</sup>Department of Pathobiology, School of Veterinary Medicine, University of Pennsylvania, Kennett Square, Pennsylvania 19348; and <sup>4</sup>U.S. Department of Agriculture, Food Safety and Inspection Service, Fort Collins, Colorado 80526, USA

## ORGANOCHLORINE PESTICIDES AND POLYCHLORINATED BIPHENYLS IN GAME ANIMALS FROM POLAND

ALICJA NIEWIADOWSKA, TOMASZ KILJANEK, STANISŁAW SEMENIUK, AND JAN ŻMUDZKI

Brominated flame retardants and toxic elements in the meat and liver of red deer (*Cervus elaphus*), wild boar (*Sus scrofa*), and moose (*Alces alces*) from Latvian wildlife

D. Zacs<sup>a,\*</sup>, J. Rjabova<sup>a,b</sup>, L.E. Ilkere<sup>a</sup>, K. Bavrins<sup>a</sup>, V. Bartkevics<sup>a,b</sup>

<sup>a</sup>Institute of Food Safety, Animal Health and Environment „BIOR”, Leļupes iela 3, Rīga LV-1076, Latvia  
<sup>b</sup>University of Latvia, Department of Chemistry, Jelgavas iela 1, Rīga LV-1004, Latvia

Accumulation of diastereomers of anticoagulant rodenticides in wild boar from suburban areas: Implications for human consumers

Enrique Alabau<sup>a</sup>, Gregorio Mentaberre<sup>b,c</sup>, Pablo R. Camarero<sup>a</sup>, Raquel Castillo-Contreras<sup>b</sup>, Inés S. Sánchez-Barbudo<sup>a</sup>, Carles Conejero<sup>b</sup>, María S. Fernández-Bocharán<sup>a</sup>, Jorge R. López-Olvera<sup>b</sup>, Rafael Mateo<sup>a,\*</sup>

<sup>a</sup>Instituto de Investigación en Recursos Cinegéticos, IREC (CSIC, UCLM, JCCM), Ronda de Toledo 12, 13005 Ciudad Real, Spain

<sup>b</sup>Wildlife Ecology & Health Group (WEHG) and Servicio de Ecopatología de Fauna Salvaje (SEFaS), Universitat Autònoma de Barcelona (UAB), Bellaterra, 08193 Barcelona, Spain

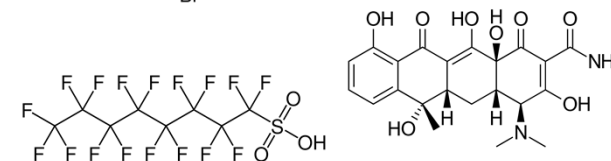
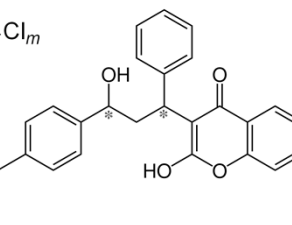
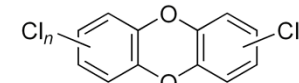
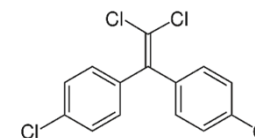
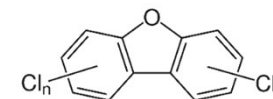
<sup>c</sup>Serra Hunter Fellow, Wildlife Ecology & Health group (WEHG) and Departamento de Ciencia Animal, Escuela Técnica Superior de Ingeniería Agraria, Universidad de Lleida, 25198 Lleida, Spain

## Contamination of wild boars' (*Sus scrofa*) muscles with tetracycline antibiotic from oral-delivered rabies vaccine baits

Anna Gajda, Ewelina Nowacka – Kozak and Andrzej Posyniak

Department of Pharmacology and Toxicology, National Veterinary Research Institute, Pulawy, Poland

Check for updates



Impact of environmental pollution on PCDD/F and PCB bioaccumulation in game animals<sup>☆</sup>

Malgorzata Warenik-Bany<sup>\*</sup>, Sebastian Maszewski, Szczepan Mikołajczyk, Jadwiga Piskorska-Pliszczynska

National Veterinary Research Institute, Department of Radiobiology, Partyzantow 57, 24-100 Pulawy, Poland

Organochlorine pesticides and NDL-PCBs in wild boars from flatland region with intensive agricultural activities

Jelena Petrović, Brankica Kartalović, Jovan Mirčeta, Jasna Prodanov Radulović, Radomir Ratajac & Krešimir Mastanjević

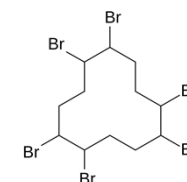


Articles

## Presence of organic halogenated compounds, organophosphorus insecticides and polycyclic aromatic hydrocarbons in meat of different game animal species from an Italian subalpine area

Francesco Arioli, Federica Ceriani, Maria Nobile, Roberto Viganò, Martina Besozzi, Sara Panseri & ...show all  
Pages 1244-1252 | Received 19 Mar 2019, Accepted 13 May 2019, Published online: 13 Jun 2019

Cite this article | <https://doi.org/10.1080/19440049.2019.1627003> | Check for updates



# WG3 - Chemical Hazards – Introduction of Metals by Ammunition



Breast muscle sample of grouse impacted by lead shots. (McAuley et al. (2018) doi: 10.1080/23311843.2018.1557316

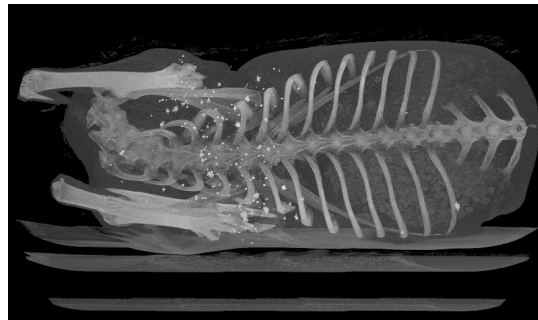
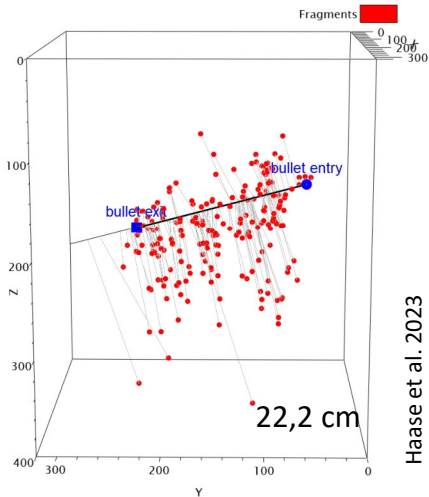


## NOTIFICATION 2024.1178

Lead in deer salami from Italy

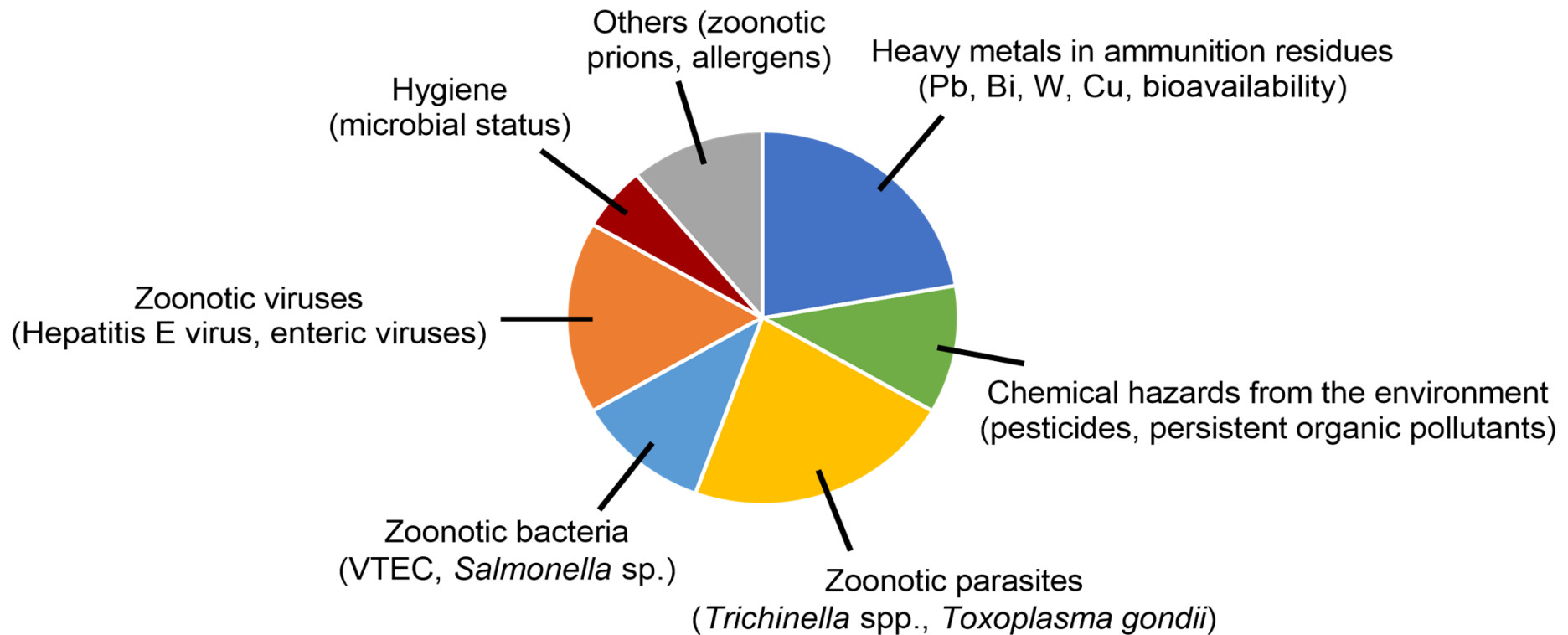
notified 20 FEB 2024 by Austria | last update 4 MAR 2024 EC validated

<b>Reference</b>	2024.1178
<b>Subject</b>	Lead in deer salami from Italy
<b>Notification type</b>	Food
<b>Notification basis</b>	Official control on the market
<b>Classification</b>	Alert notification
<b>Risk decision</b>	Serious
<b>Risk</b>	
<b>Risk decision</b>	<b>Serious</b>



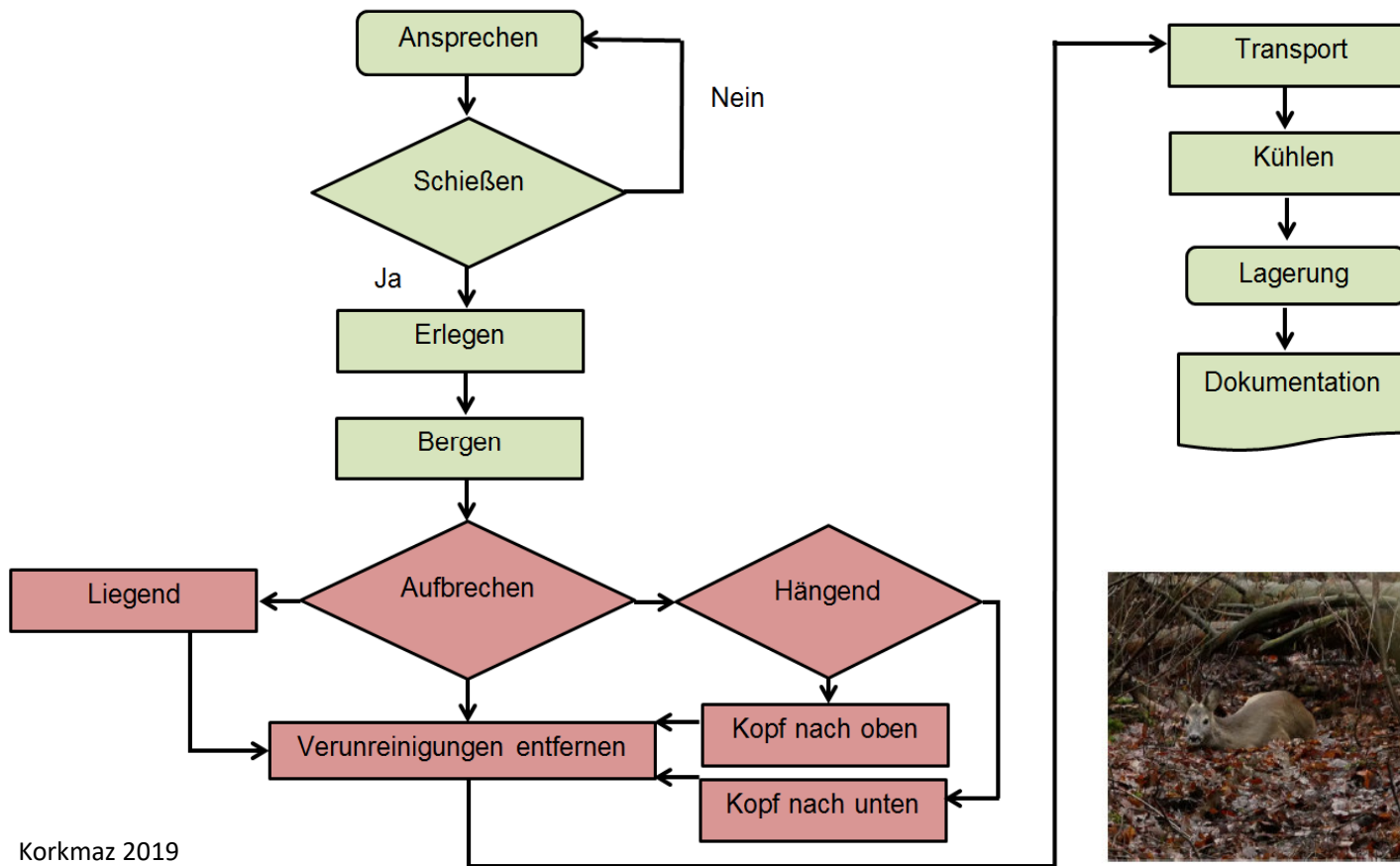
Haase et al. 2023

## WG4 - Biological Hazards – Zoonotic Meatborne Pathogens



Most relevant food safety risks of hunted game meat according to expert elicitation by the proposers

# WG4 - Biological Hazards – Hygiene



Korkmaz 2019

## Between others...

- cross-contamination
- rinse or not to rinse?
- transportation
- Storage e.g. game larders
- trained person



Fotos BfR



# CA 22166 Synopsis



www.supplychain247.com



# COST Action SafeGameMeat (CA22166)

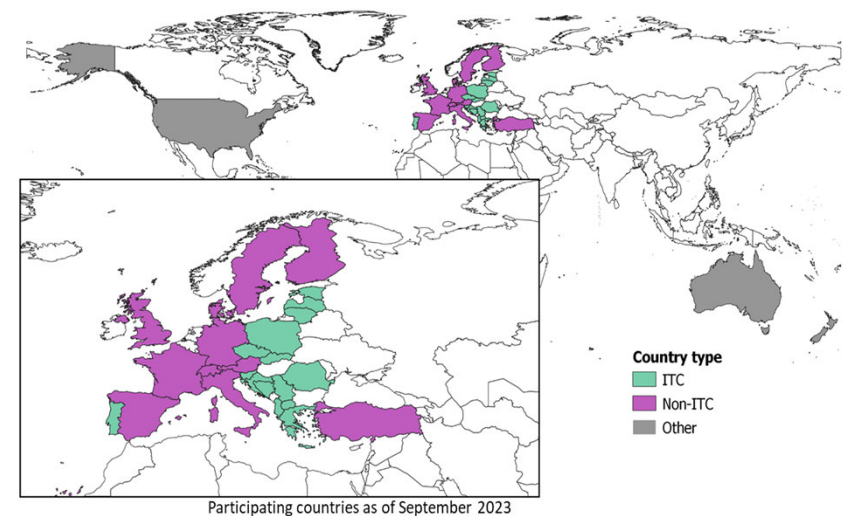


## Main aims are

To establish a (long-lasting) network of experts.

To promote and harmonize food safety standards in a growing European game meat market.

<b>Start</b>	<b>29th September 2023</b>
<b>Duration</b>	<b>4 years</b>
<b>Currently</b>	<b>more than 100 members</b>
<b>Budget</b>	<b>about 600 000 Euros</b>



- Gender balance
- Inclusiveness Target Countries (ITC)
- Young Researchers and Innovators (YRI)

# Application

# Becoming a part of the Action!

The screenshot shows the website for COST Action CA22166, "Safety in the Game Meat Chain (SafeGameMeat)". The header includes the COST logo and navigation menus for "COST Actions", "Funding", "COST Academy", and "About". A prominent "Open call Fund your network" button is visible. The main content area features a "Description" tab selected, with a detailed text block explaining the action's goals and a "Description" section. To the right, an "Action Details" sidebar lists key dates: MoU (07/23), CSO Approval date (12/05/2023), Start date (29/09/2023), and End date (28/09/2027). Below this, a "How can I participate?" section lists steps, with "Apply to join your Working Groups of interest" circled in red. The bottom of the page shows a breadcrumb trail: Home > Browse Actions > Safety in the Game Meat Chain (SafeGameMeat).

**Open call**  
Fund your network

SEARCH e-COST MENU

## CA22166 - Safety in the Game Meat Chain (SafeGameMeat)

Downloads

Home > Browse Actions > Safety in the Game Meat Chain (SafeGameMeat)

**Description** Management Committee Main Contacts and Leadership Working Groups and Membership

### Description

With 7 million hunters in the EU alone, hunting is a commonly performed activity in most European countries. However, scientific knowledge on the food safety of game meat and the game meat production chain in Europe is limited. Although the game meat market is small compared to that of livestock meat, almost monthly a notification in the European Rapid Alert System for Food and Feed arises.

Applying a transnational and multidisciplinary One-Health approach, the COST Action "Safety in the Game Meat Chain" will enable the exchange of experiences and concepts through networking, thereby promoting the strengthening and harmonization of food safety standards in a growing European game meat market. The network will consist of all relevant stakeholders along the game meat chain and aims to determine differences and similarities between European countries in hunting practice and education, game meat processing and inspection, trading, legislation, and game meat consumption investigating all stages of the supply chain, from the wild animal to the consumer, "from forest to fork". A particular focus is on the identification and assessment of known and emerging chemical and biological risks that are of regional, national or global importance and pose a hazard to human health associated with the consumption of game meat.

Overall, the network aims to support informed decisions in regional, national and international risk assessment, management and communication on game meat safety by creating a comprehensive knowledge base and providing concrete recommendations for action, which will contribute to strengthening food safety and consumer protection across Europe.

**Action keywords**

hunting - zoonoses - hygiene - contaminants and residues - wildlife

#### Action Details

- MoU - 07/23
- CSO Approval date - 12/05/2023
- Start date - 29/09/2023
- End date - 28/09/2027

#### How can I participate?

- Read the Project Description [MoU](#)
- Inform the Main Proposer/Chair of your interest ([email](#))
- Apply to join your Working Groups of interest**
- Please note, Management Committee nominations are carried out through the [COST National Contact Points](#)

COST Action CA22166 is funded by the EU.

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[bfr.bund.de/de/wissenschaftsmagazin\\_bfr2go.html](http://bfr.bund.de/de/wissenschaftsmagazin_bfr2go.html)


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