



Food and Agriculture  
Organization of the  
United Nations

# FAO regional initiatives on avian influenza

*FAO Regional Office for Europe and Central Asia*

**FAO  
Virtual  
Learning  
Centers**





# FAO Virtual Learning Centers

COORDINATION UNIT IN FAO HQ

**VLC EUROPE AND CENTRAL ASIA (REU)**



**VLC LATIN AMERICA AND THE CARIBBEAN (RLC)**



**VLC ASIA AND THE PACIFIC (RAP-SAP)**



**VLC NEAR EAST AND NORTH AFRICA (RNE)**



**VLC EASTERN AFRICA (EA)**



**VLC SOUTHERN AFRICA (SFS)**



# MAIN ADVANTAGES



The image shows the top portion of a report cover. At the top left is the FAO logo (a globe with a grain stalk) and the text 'Food and Agriculture Organization of the United Nations'. The background is a colorful pattern of various icons including smiley faces, headphones, and communication symbols. In the center, a white box contains the title: 'SUMMARY OF THE REGIONAL VIRTUAL LEARNING CENTER ACTIVITIES IN EUROPE AND CENTRAL ASIA AS OF 1 JANUARY 2024'. At the bottom right, a blue box contains the text 'FAO Virtual Learning Centers'. A large QR code is positioned at the bottom left of the report cover.

- ✓ Reach out to large audiences in remote areas
- ✓ Cost-effectiveness
- ✓ Reduced environmental footprint
- ✓ Customized: region, language, etc.
- ✓ Tutored vs. Open access
- ✓ Accredited
- ✓ Certified
- ✓ Promotion and strengthening regional networks





# VLC REU key achievements in last 2 years

VLC Europe and Central Asia (REU)

Home | Courses | Regional VLCs | VLC Europe and Central Asia (REU)

The Virtual Learning Center for Europe and Central Asia (VLC REU) has been established to support the digital learning capabilities of the region. The initial focus of the VLC REU is to support animal health professionals, focusing on transboundary animal diseases (TADs) such as African swine fever, lumpy skin disease and Avian influenza and their control. Over time, the Center is foreseen to expand to plant health, aquaculture and other technical areas based on the needs of the region and will support face-to-face activities where needed. Special attention will be given to on-demand tailored courses and adaptations to local languages and context.

To contact us and to learn more about our courses and activities, please send us an e-mail to [reu-vlc@fao.org](mailto:reu-vlc@fao.org)

1 2 >



Avian influenza Preparedness course 2024

[Find out more >](#)



Курс по обеспечению готовности к оспе овец и оспе коз

[Find out more >](#)

3,200 participants

50 countries



4 VLC courses accredited

2 more planned

FAO Virtual Learning Centers

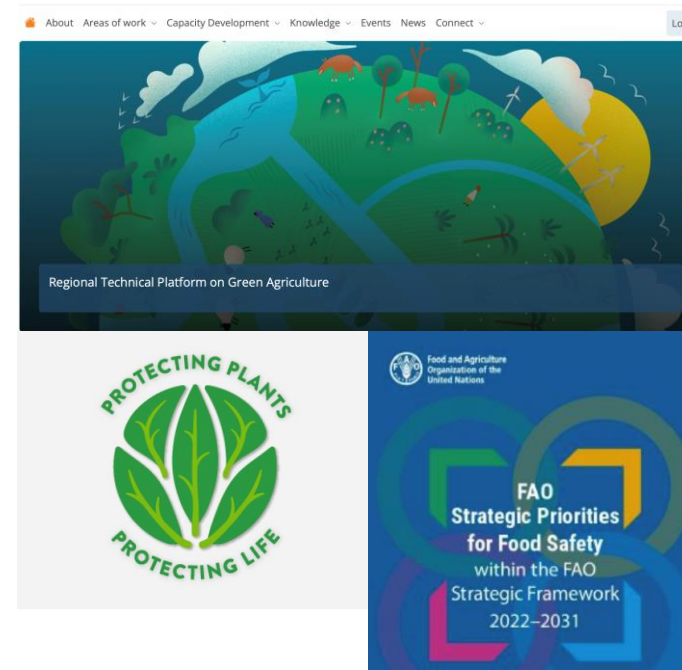
About | Regional Centers | Courses | Support | Resources



Open access versions (ASF, HPAI)

4 in development: ASF in Serbian, and IRB (EN, TR & RU)

Regional Technical Platform on Green Agriculture



Beyond AH → OH

- Food Safety
- Plant Health
- Green Agriculture
- Food Loss & Waste



# FAO Virtual Learning Centers: Online courses delivered by REU

## 2021 - 2022

ASF (RUS)

AI Preparedness (ENG)

AI Preparedness (RUS)

LSD (RUS)

Stamping Out (ENG)

OutCosT (ENG)



## 2023

ASF for Spain (2)

ASF (ENG)

AI Preparedness (UKR)

Stamping Out (RUS)

SGP (ENG)



## 2024

Intro to One Health (ENG)

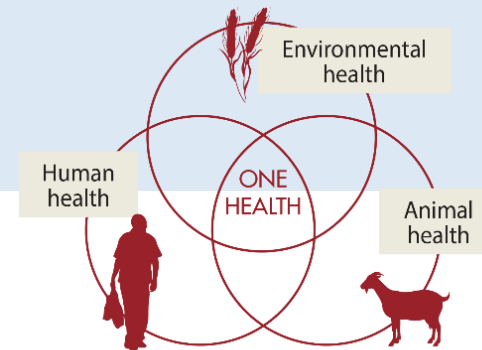
ASF (ROM)

IRB (ENG, TUR, RUS)

SGP (RUS)

AI Preparedness (ENG)

Intro to One Health (RUS)



## 2025 (developing/planned)

Food Loss & Waste (ENG)

Zoonoses (ENG)

Brucellosis (ENG & RUS)

Green Agriculture (ENG)

Food Safety (ENG)

Plant Health (ENG)

PPR (ENG)





## Online courses on Avian Influenza

Delivery dates	Course title	Language	Number of countries	Number of participants	Status
Jan-Feb. 2022	<a href="#"><u>Avian Influenza Preparedness – Global</u></a>	English	90	365	Finished
Nov-Dec 2022	<a href="#"><u>Avian Influenza Preparedness</u></a>	Russian	14	246	Finished
Mar-Apr 2023	<a href="#"><u>Avian Influenza Preparedness</u></a>	Ukrainian	1	250	Finished
Feb-March 2024	Introduction to One Health	English	45 (4 sectors: PH/WL, AH, EH, FS)	308	Finished
Oct-Nov 2024	<a href="#"><u>Avian Influenza Preparedness</u></a>	English	40	-	Ongoing
Nov-Dec 2024	Introduction to One Health	Russian	15 (4 sectors: PH/WL, AH, EH, FS)	-	Ongoing



## Past delivered courses

### Avian Influenza Preparedness course

Language: English, Russian and Ukrainian  
(plus other languages in other regions)

8 Modules & 4-week tutored course:

- ❖ Week One: Introduction to AI and Epidemiology
- ❖ Week Two: Clinical and Laboratory Diagnosis
- ❖ Week Three: Prevention and Surveillance
- ❖ Week Four: Outbreak Investigation, Response and Control

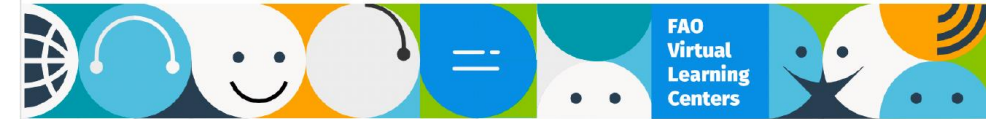
Course discussion forum and webinars

VetCEE accreditation ongoing

Open access version also available



Food and Agriculture  
Organization of the  
United Nations



### Avian Influenza Preparedness Course

The Food and Agriculture Organization of the United Nations (FAO), working together with the Friedrich-Loeffler-Institut, has developed an online training course on avian influenza (AI) preparedness. This course has been adapted, translated and delivered in multiple FAO regions to respond to the AI epidemiological situation.

COURSE LENGTH	12 hours (4 WEEKS)
PARTICIPANTS	400 (MAX)
FORMAT	TUTORED – a mix of online webinars, self-paced interactive modules, discussion forum and additional resources

#### Who is the course for?

The primary audience for the course is official and private practice veterinarians who are directly involved in the surveillance, detection, prevention and response to avian influenza.

#### What will you learn?

- Impact and importance of AI
- Epidemiology
- Pathogenesis and clinical diagnosis
- Laboratory diagnosis
- Outbreak investigation
- Prevention
- Surveillance
- Control with and without vaccination

#### What does the course involve?

The course is studied entirely online and will take approximately 12 hours to complete. Around 400 participants can take the course at the same time, and it is open for four weeks.

The course opens with a live interactive webinar, where trainees meet their trainers and are introduced to the course. Trainees then progress through eight interactive modules, enriched with photographs, exercises, and self-test questions. During the course, trainers and international experts are available through a discussion forum to answer questions and to lead discussions.

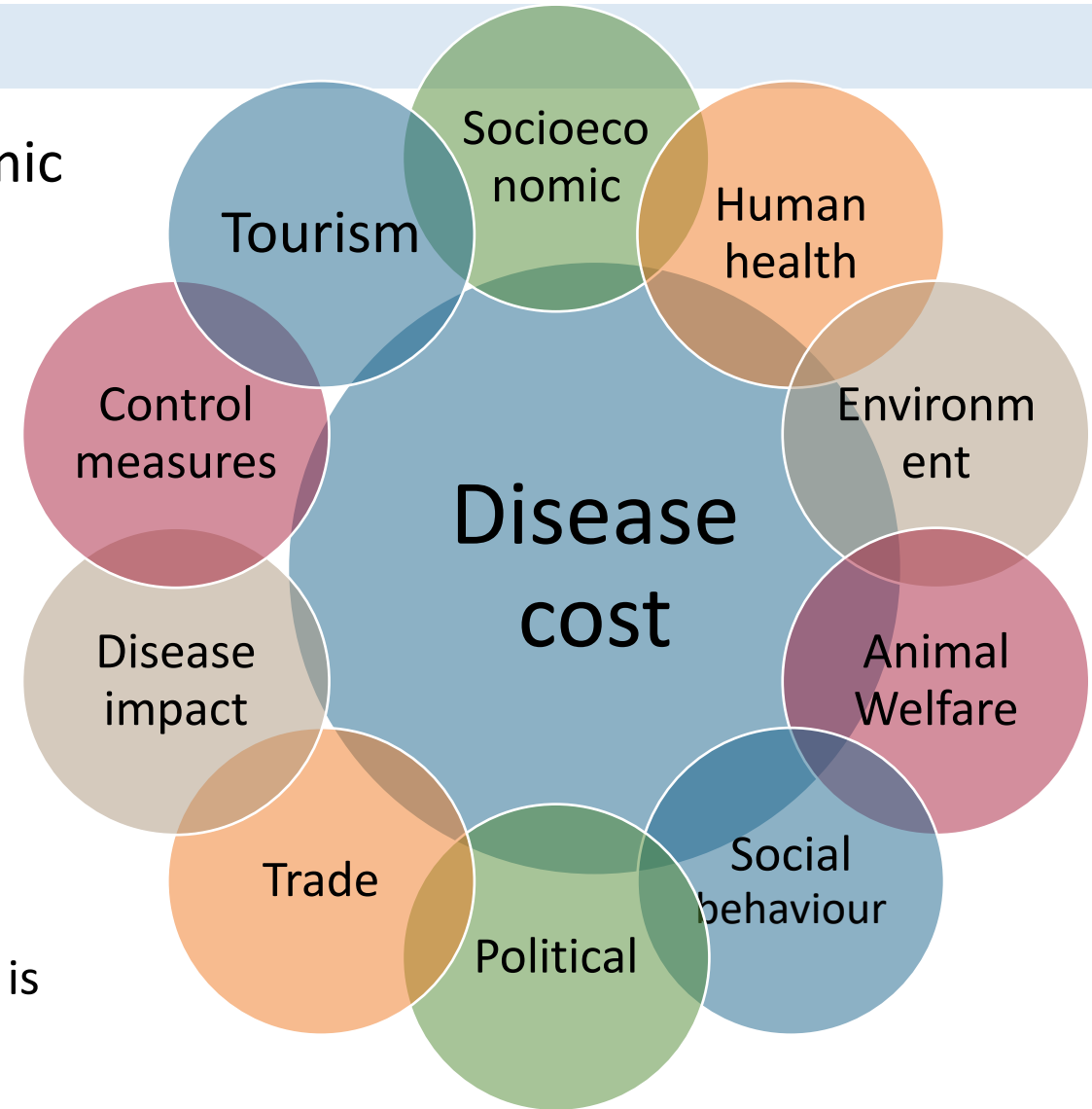
Towards the end of the course, there will be a second live interactive webinar, to discuss topics raised during the course in more detail. All trainees must complete a comprehensive assessment and finish all the coursework. Successful trainees are provided with a certificate.





## The cost of disease

- Animal diseases have important economic consequences at farm, national and regional levels
- Economic consequences vary widely across countries
  - level of spread
  - duration of the epidemic
  - the structure of the livestock industry
  - control measures applied
- However...
  - Few studies
  - Results are not comparable
  - Data required, although usually available, is not routinely collated and analyzed







Why estimate the cost of disease?

**Outbreak management**

*Preparedness  
&  
Resource allocation*

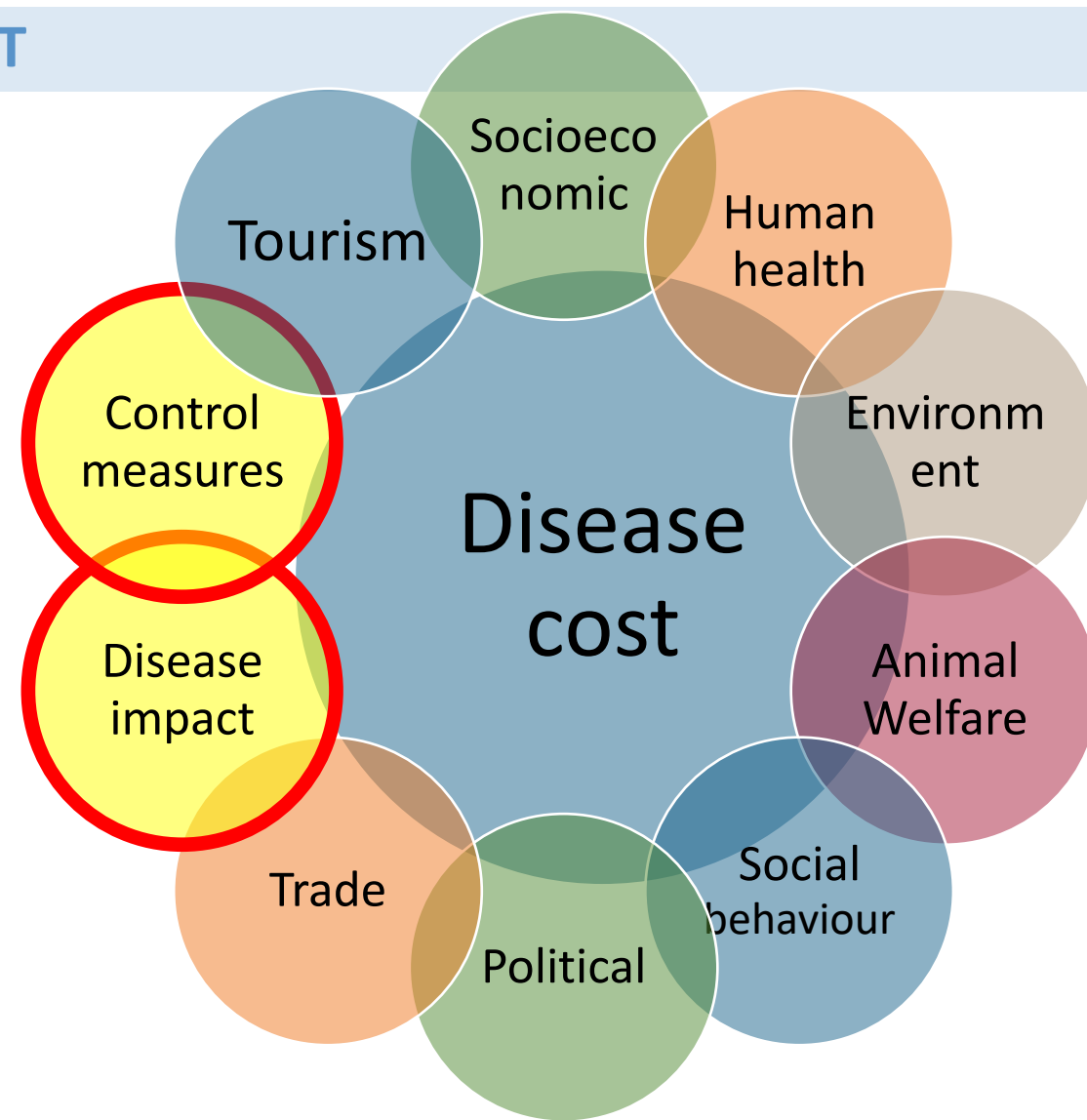
**Awareness raising & Advocacy**

*Prevention  
&  
Resource mobilization*



## FAO's solution: OUTbreak COSTing Tool: OutCosT

- What's the direct cost of outbreaks?
- What is the cost of disease management?
- What's the cost per activity?
- Who pays for what?
- What's the cost per production system?
- What would be the cost of alternative epi scenarios or management strategies?
- Standardized approach: Allows comparisons between outbreaks and scenarios
- Fast and low labour needs





## OutCosT – Key features

- Joint effort between FAO and the Autonomous University of Barcelona
- Launched in April 2022 as a new FAO corporate tool
- Excel-based
- Livestock species-specific
- Dynamic tool in continuous development
- Actual epidemics and hypothetical scenarios
- Emerging and endemic diseases
- Validated with real outbreak data
- Incorporates a simple qualitative assessment of other indirect costs
- Available [online](#) (for swine)





# The Tool: Excel spreadsheet + User Guide + Template

File Home Insert Page Layout Formulas Data Review View Tell me what you want to do... Beltr

Paste Cut Copy Format Painter Clipboard Font Alignment Number Styles Cells

G28 =dic!C496

**Overall Costs**

**Cost of African Swine Fever in Example (in EUR)**

**Food and Agriculture Organization of the United Nations**

Example has a census of 333000 sows and 3480000 fatteners and finishers distributed in 8700 farms in The outbreaks affected 117 farms in 2021. The main applied control/eradication measures are:  
 -Partial stamping out -Disinfection -Vaccination

Total cost	Total cost for the country	Percentage	Cost per farm in the country
Outbreaks	3,718,106	27.9%	427
Connected farms	9,090,062	68.2%	1,045
Vaccination /treatments	224,430	1.7%	26
Surveillance (farms)	128,676	1.0%	14.8
Wildlife	14,472	0.1%	1.7
Others	149,235	1.1%	17.2
<b>Total</b>	<b>13,324,981</b>	<b>100%</b>	<b>1,531.6</b>

**Total cost**

**Table with detailed costs:**

Outbreaks	Total cost	# Farms	Total cost
Outbreak investigation	Visit to the farm	154	16,724
	Lab technique		27,089
	Sampling material and transport		2,310
<b>Stamping out:</b>			
Destroyed animals	Sows and piglets	61	428,231
	Fatteners	79	740,857
Culling and carcass disposal		117	30,161
<b>Other measures:</b>			
Cleaning/disinfection	Personnel	117	20,580
	Materials used		7,870
Insect control and others		117	4,720
Treatments		117	391,819
<b>Direct disease Costs</b>			
	Dead animals	117	578,505
	Abortions	79	13,853
	Loss of production and others	117	0
<b>Indirect disease Costs</b>			
	Farm level	117	385,328
<b>Immobilisation</b>			
Fixed cost per day			1,070,059
Sacrifice due to welfare			121,088
<b>Epidemiologically connected farms</b>			
Diagnostic		327	76,094
Stamping out		118	6,144,076
Immobilisation		82	1,410,789
Indirect costs		118	933,376
Other	Disinfection and tests		525,727

**Total cost by type of farms**

Industrial	Commercial	Family	Backyard
1,738	2,824	2,715	9,448
5,920	9,820	8,895	2,509
240	390	360	503
346,320	67,641	14,069	202
444,150	186,543	101,520	8,844
16,077	5,784	3,883	4,437
9,872	3,864	3,750	3,294
3,100	2,300	1,250	1,220
2,015	943	725	1,037
246,456	93,012	47,592	4,759
209,446	257,043	99,471	12,886
2,585	8,079	2,731	458
0	0	0	0
7,627	289,798	96,819	11,084
729,886	231,224	103,845	5,304
75,287	29,205	15,188	1,409
8,048	16,520	16,331	33,113
3,912,118	1,500,904	689,839	61,216
650,000	598,654	148,853	13,282
634,884	214,719	75,788	17,985
167,908	178,321	169,559	11,936

Introduction INPUTS Overall cost More costs Breakdown of costs Evaluation of qualitative costs Report-1 Report-2 Report-3 Report-4

## USER GUIDE

### OUTbreak COSTing Tool (OutCosT) - Pigs The Cost of Pig Diseases

The aim of this user's guide is to provide an overview of the overall architecture and features available in the OutCosT, and to assist the reader in making use of the tool.

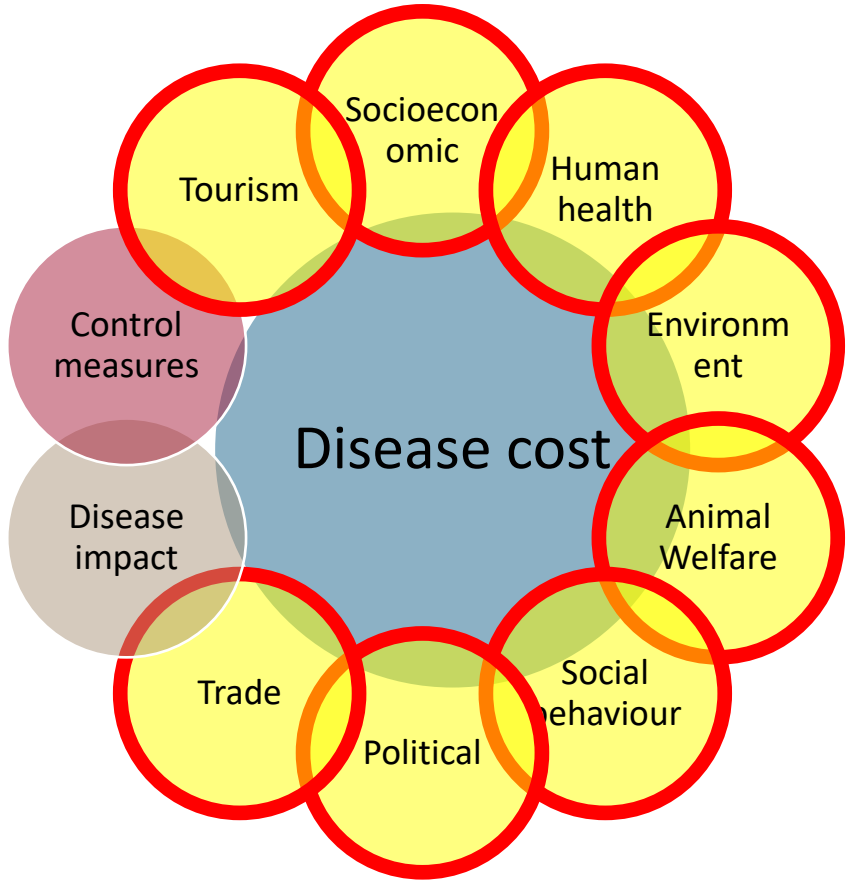
Giovanna Ciaravino, Jordi Casal, Ipek Keskin  
 prg.kidemiologia.veterinaria@uab.cat



September 2023  
Version 2.1



## Outputs: Other costs



### Other costs (qualitative evaluation)

#### Socio-economic vulnerability

	Consequences	Likelihood	Concern
Affected farms / communities do not have the adequate support	1	2	Low
Compensation for diseased / culled animals are not enough	1	2	Low
People can be forced to leave the activity	3	1	Moderate
The zone is dependent of livestock business. People can be forced to emigrate to the city	1	1	Low

#### Human Health:

	Consequences	Likelihood	Concern
The disease is a frequent and/or severe zoonoses	0	0	Null
Indirectly can affect the human health (increase of AMR, pollution...)	2	1	Low
The disease or the control measures increases mental disturbances of farmers and related people	2	1	Low

#### Environment:

	Consequences	Likelihood	Concern
Disease can also affect wildlife animals	4	2	Extreme
Disease can modify the ecological balance or affect an endangered species	1	1	Low
The control/eradication measures have an effect on the environment	1	1	Low

#### Animal Welfare

	Consequences	Likelihood	Concern
The disease has an important effect on the welfare of affected animals	2	2	Moderate
The control measures have an important effect on the welfare of affected animals	1	2	Low

#### Social Behaviour:

	Consequences	Likelihood	Concern
Reduction in the consumption of pork products (decrease of prices)	2	1	Low

## OutCost Poultry preliminary results

	Bulgaria, 2022		Bolivia, 2023		Chile, 2023		Panamá, 2023		Guinea, 2023	
<b>Outbreaks (commercial)</b>	18		17		175		-		111	
<b>Outbreaks (backyard)</b>	-		17		12		4		not included	
<b>Animals in affected farms</b>	738,555		591,952		1,497,259		90		412,928	
<b>COSTS</b>	Cost (EUR)	%	Cost	%	Cost	%	Cost	%	Cost	%
• <i>Outbreaks</i>	4 072 503	91.4%	3 780 123	70.4%	8,169,576	26.7%	106,724	22.3%	2,268,396	90.3%
• <i>At-risk farms</i>	324 344	7.3%	983 814	18.3%	15,832,693	51.7%	157,890	33.0%	17,137	0.7%
• <i>General population</i>	0	0.0%	243 397	4.5%	0	0.0%	0	0.0%	114553	4.6%
• <i>Surveillance (farms)</i>	1 472	0.0%	2 245	0.0%	0	0.0%	0	0.0%	0	0.0%
• <i>Wildlife</i>	447	0.0%	692	0.0%	847,480	2.8%	517	0.1%	19315	0.8%
• <i>Coordination &amp; Others</i>	15 474	0.3%	318 892	5.9%	5,325,000	17.4%	86,167	18.0%	7,296	0.3%
• <i>Training &amp; Awareness</i>	39 848	0.9%	42 476	0.8%	442,362	1.4%	126,553	26.5%	84,675	3.4%
<b>TOTAL</b>	4 454 087	100.0%	5,371,639	100.0%	30,617,110	100.0%	477,851	100.0%	2,511,372	100.0%
<b>Cost per affected farm</b>	247 449		157,989		163,728		119,463		22,625	



## How to visit and contact us



You can visit  
the **VLCs platform** here:

<https://virtual-learning-center.fao.org/>

Please, contact us [REU-VLC@fao.org](mailto:REU-VLC@fao.org)

 Food and Agriculture  
Organization of the  
United Nations

 Продовольственная и  
сельскохозяйственная организация  
Объединенных Наций

**SUMMARY OF THE  
REGIONAL VIRTUAL  
LEARNING CENTER  
ACTIVITIES IN EUROPE  
AND CENTRAL ASIA AS  
OF 1 JANUARY 2024**

**СВОДНАЯ ИНФОРМАЦИЯ  
О ДЕЯТЕЛЬНОСТИ  
РЕГИОНАЛЬНОГО  
ВИРТУАЛЬНОГО УЧЕБНОГО  
ЦЕНТРА В ЕВРОПЕ И  
ЦЕНТРАЛЬНОЙ АЗИИ  
НА 1 ЯНВАРЯ 2024 ГОДА**

**FAO  
Virtual  
Learning  
Centers**

**Виртуальные  
учебные  
центры  
ФАО**

