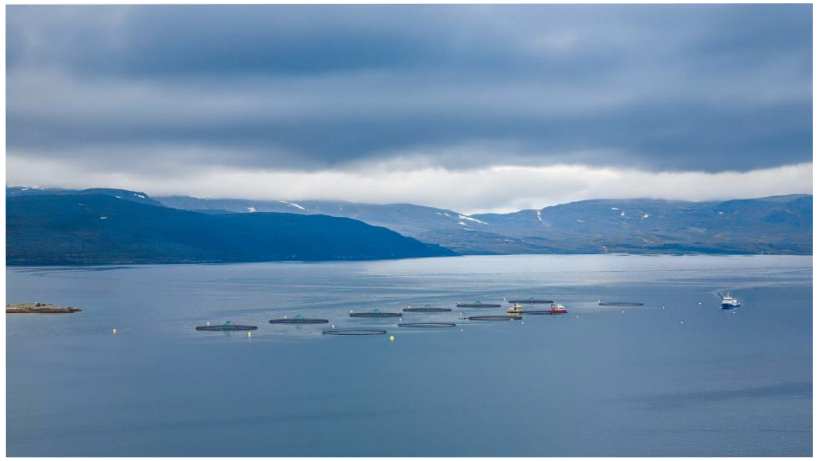




Economics to support decision:

facts from the WOAH Collaborative Center on Economics for Animal Health

Didier Raboisson, Cecilie Walde, Jonathan Rushton

Veterinærinstituttet
Norwegian Veterinary Institute

ROSLIN

GBADs
Animal health metrics for sustainable food systems

World Organisation for Animal Health
Founded as OIE

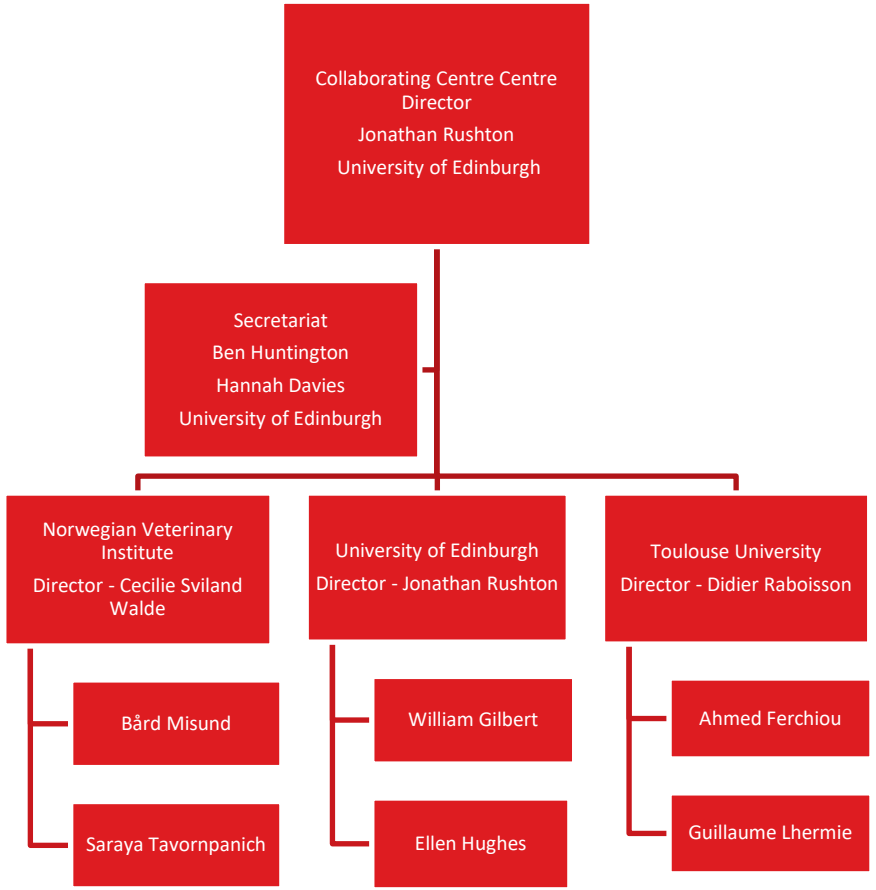
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THE UNIVERSITY of EDINBURGH

32nd Conference of the Regional Commission for Europe

Riga, September 2026

WOAH - Collaborative Centre on Economics for Animal Health (CCEAH) for Europe



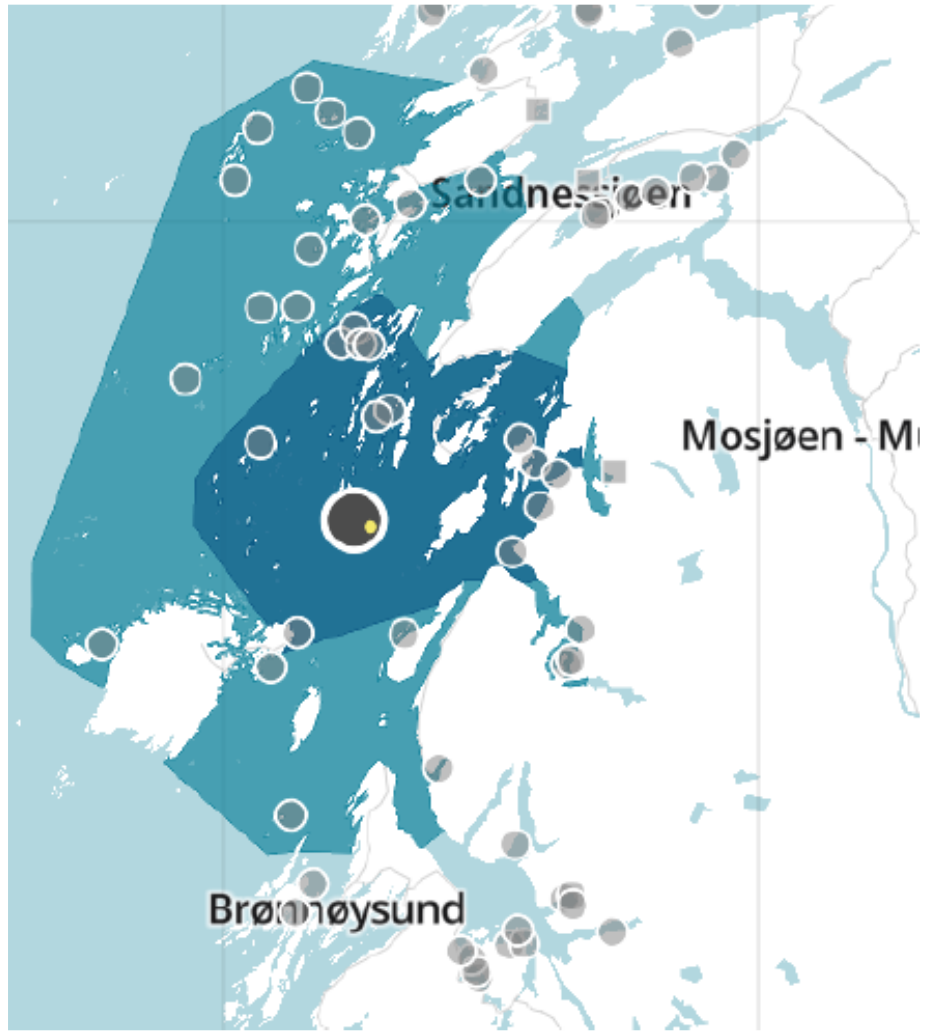
- Farm level Burden of Animal Diseases
  - Population : biomass and value
  - Productivity change over time
  - Animal Health Loss Envelope
  - Attribution of the disease burden by cause
- Key points
  - Estimation based on data to support decision making and review evidence of *ex-ante* or *ex-post*
  - Centre is linked to the WOAH CCEAH for Americas
  - We seek to support a similar Centre for the WOAH Asia/Pacific region

01 EAH to support decision making

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1- The issue: PD in Norway, several outbreaks

- Autumn-Winter 2023:
  - Aug-Oct 2023: 900,000 2.5-3 kg salmons depopulated
  - Nov-Dec 2023:
    - 1.3 M 1,2-1,4 & 750,000 1.4-1.6 kg salmons depopulated
    - Crude estimation loss: € 40-50 M
  - Appeal against the depopulation
    - Norwegian Food Safety Authority asks Norwegian Veterinary Institute for a Cost-Benefit Analysis of depopulation as measure to control PD in non-endemic area

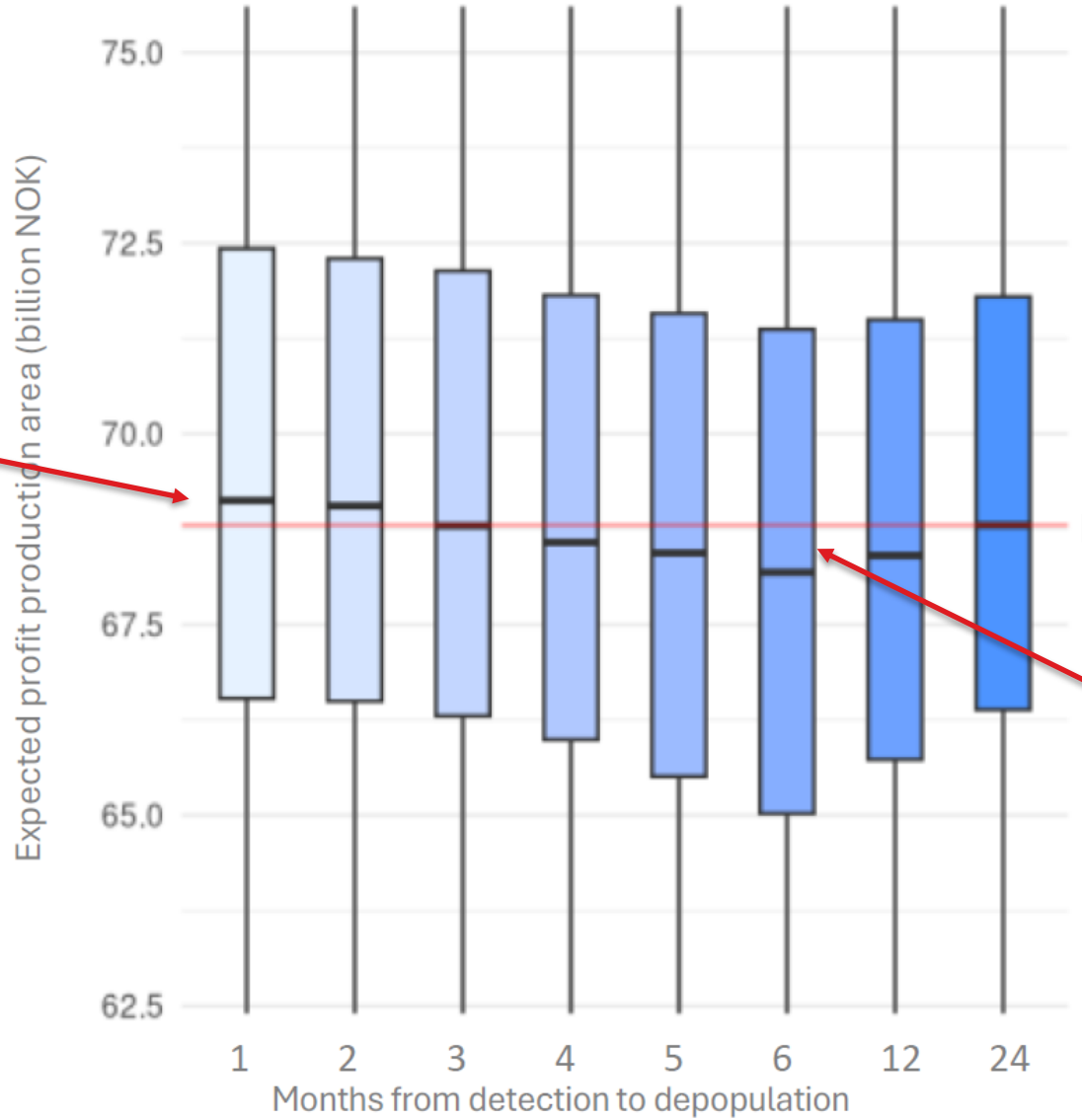


- Method
  - Epidemiological model + partial budgeting approach
  - Data from Directorate of Fisheries 2019-2022

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1- The results: PD in Norway

Immediate (1) vs no depopulation (24) expected short term average benefit of €44.57 million for the area



No depopulation

Average expected cost of €109.36 million if depopulation is delayed by 6 months compared to immediate depopulation

- Conclusions:
  - Depopulation as quick as possible

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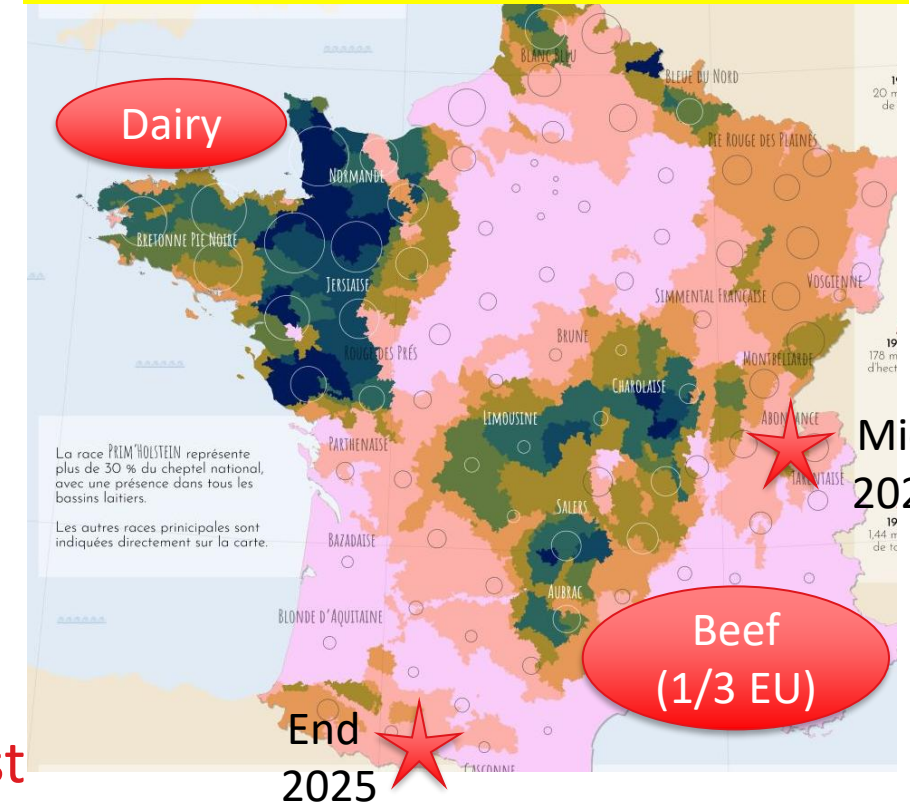
2- The issue: LSD in France, 2 waves of outbreaks & limitations of exports







Exportation of cattle: €2.23 billions
(22% out of the value produced by farms)

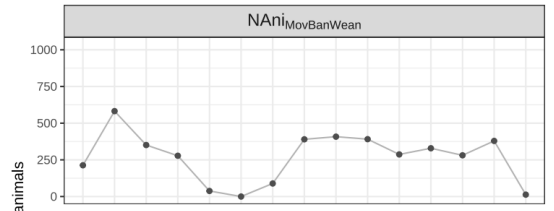


Ratio cost of the policy / benefices of cattle exportation ?

Share of the policy cost between farmers and government ?

Stochastic bioeconomic model of LSD in South-West France for End 2025- Early 2026

Data : national markets & official animal record



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2- The results: LSD in France

	Cost (x€1,000,000)				
	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Depopulation	2.4	2.4	2.4	2.4	2.4
Vaccination	11.1	11.1	11.1	11.1	11.1
Vaccination side effect	1.2	1.2	**2.5**	**4.3**	1.2
Animal movement restriction	10.2	10.2	10.2	10.2	**14.6**
Extra support for movement bans		**4.5**	4.5	4.5	4.5
Total Governement	13.5	18.0	18.0	18.0	18.0
Total Farmers	11.4	6.9	12.7	14.5	15.8
Grand total	**24.9**	**24.9**	**30.7**	**32.5**	**33.8**
(share Govt / Farmers)	(54/46)	(72/18)	(59/41)	(56/44)	(53/47)

To sum up :

For South West : 959 animals culled and **€25-€34 millions**

Value of cattle exportation : **€2.23 billions**

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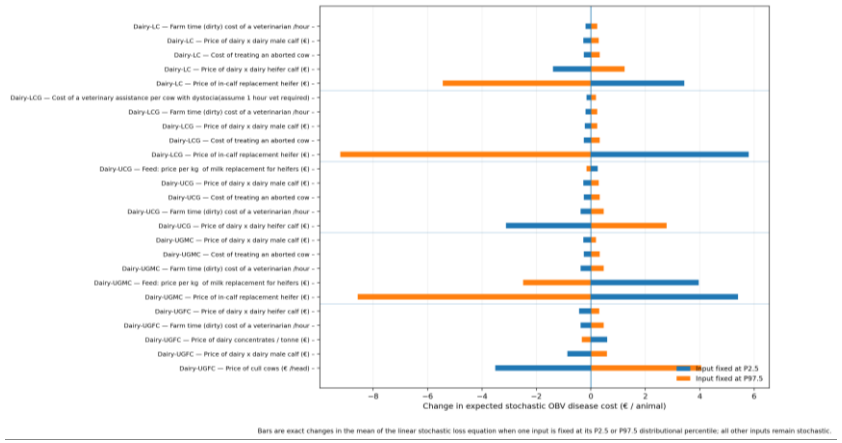
3- The issue: Orthobunyavirus in France, mid 2026

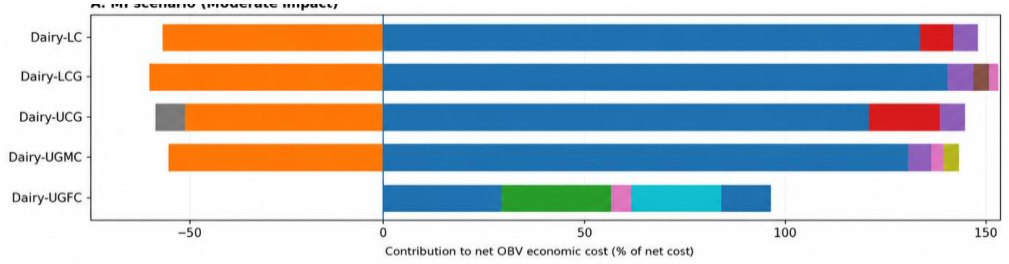
- Close to Schmallenberg virus of early 2010's
  - Limited data available But
    - Update of the previous model + stochasticity
    - Assumptions on 2026 GM/prices and on OBV impact
    - OBV impact based on difference in GM
  - Update as data becomes available

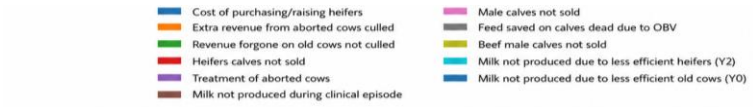
3- The results: Orthobunyavirus in France

Submitted to Transboundary and Emerging Diseases

	Mean	95%PI	
Dairy-LC	€33.60	€32.71-	€34.58
Dairy-LCG	€33.51	€33.02-	€34.02
Dairy-UCG	€34.50	€33.88-	€35.18
Dairy-UGMC	€37.40	€34.28-	€40.90
Dairy-UGFC	€69.27	€65.21-	€72.47
Charolais-C	€35.22	€34.36-	€36.01
Limousin-C	€34.66	€33.82-	€35.45
Blonde-C	€36.08	€35.23-	€36.84
Salers-C	€31.44	€30.47-	€32.34
Charolais-F	€49.89	€48.90-	€50.83
Sheep-GLCW	€29.97	€25.39-	€35.19
Sheep-EL	€23.29	€19.99-	€27.02
Sheep-Dairy	€38.09	€33.89-	€42.61







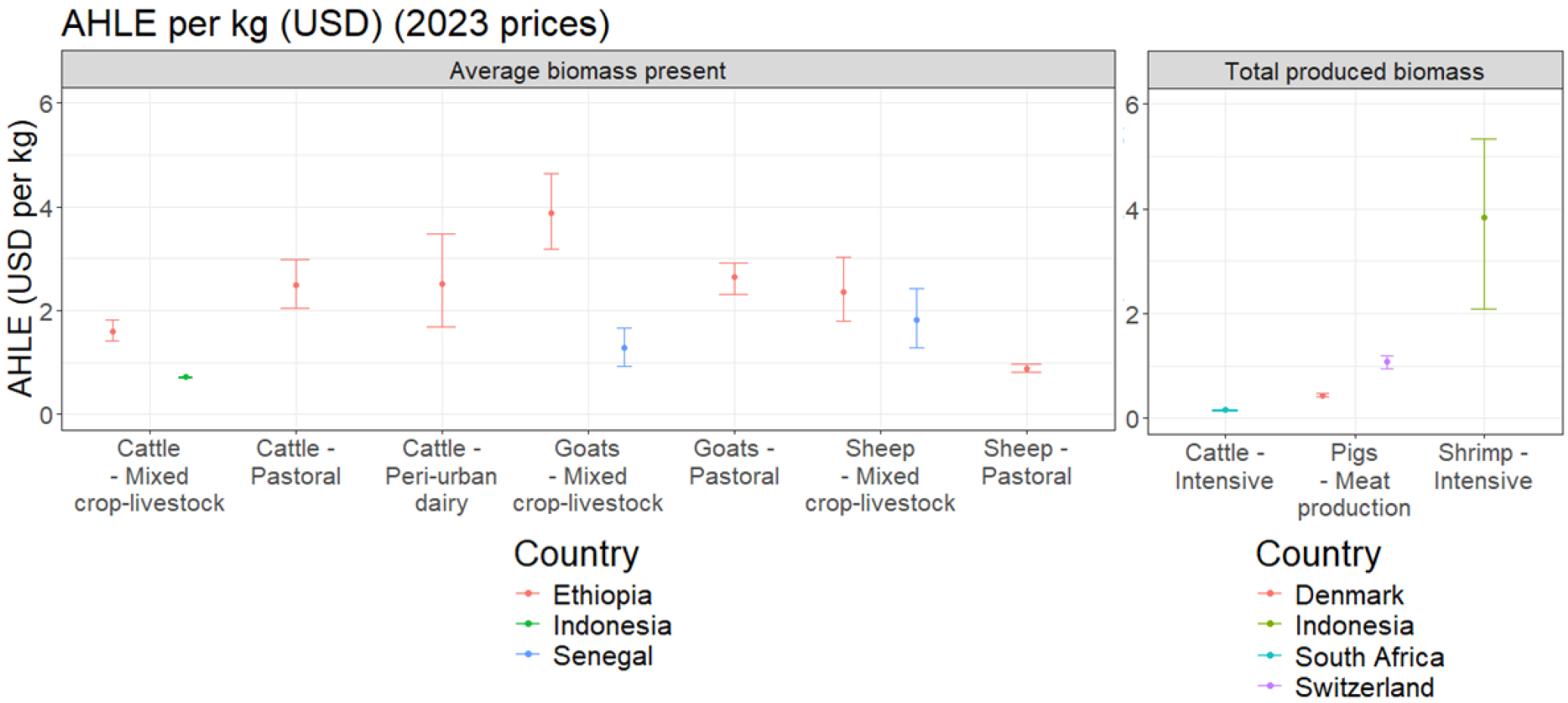
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4- The issue: disease burden across livestock systems and causes

- Ongoing studies of the impact of animal diseases in livestock and aquatic species in Europe, Africa, Asia and the Americas
- In Europe work is being completed on pig sector disease burden in Great Britain, Denmark, Switzerland and the Republic of Ireland
- In addition in depth work has been done in Ethiopia, Senegal, South Africa and Indonesia
- These studies allow comparisons of disease burdens in similar systems across geographies
- There has also been work on the economic burden of AMR in Denmark and Ethiopia

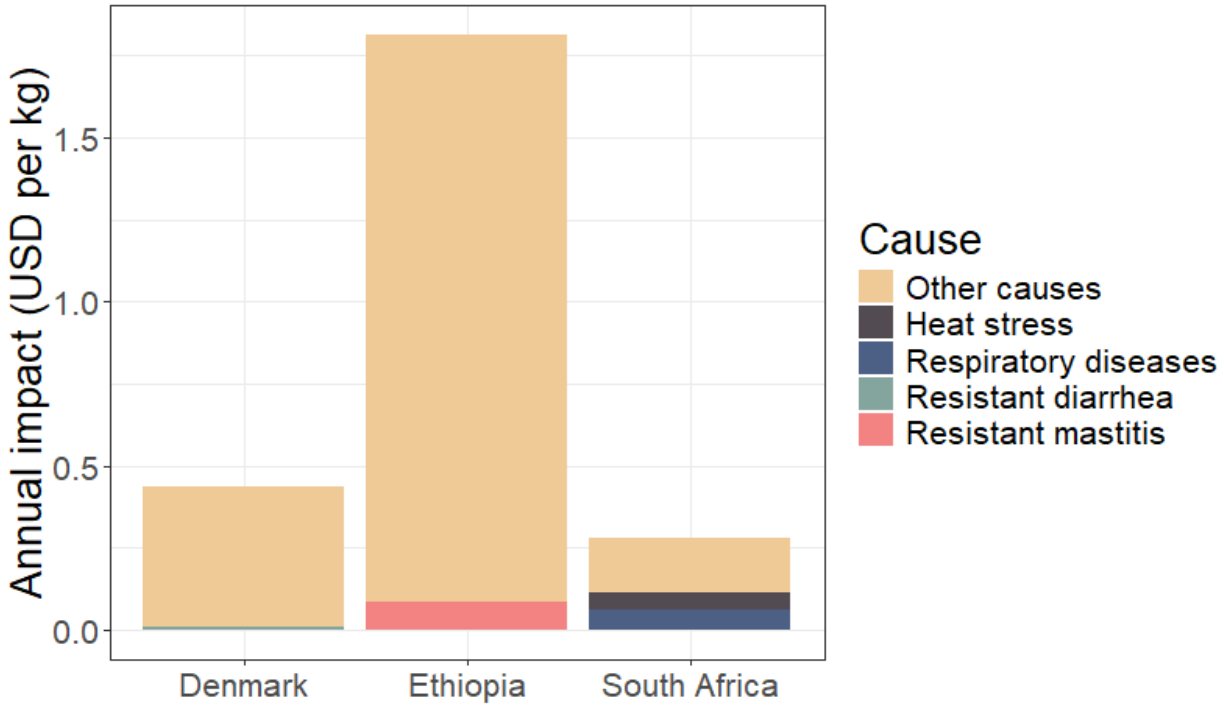
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4- Comparing AHLE across species and systems



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4- Attributing the AHLE to cause



Denmark:
limpact of post-weaning diarrhoea resistant to antimicrobials on the pork sector

Ethiopia:
Impact of antibiotic-resistant mastitis on the cattle sector

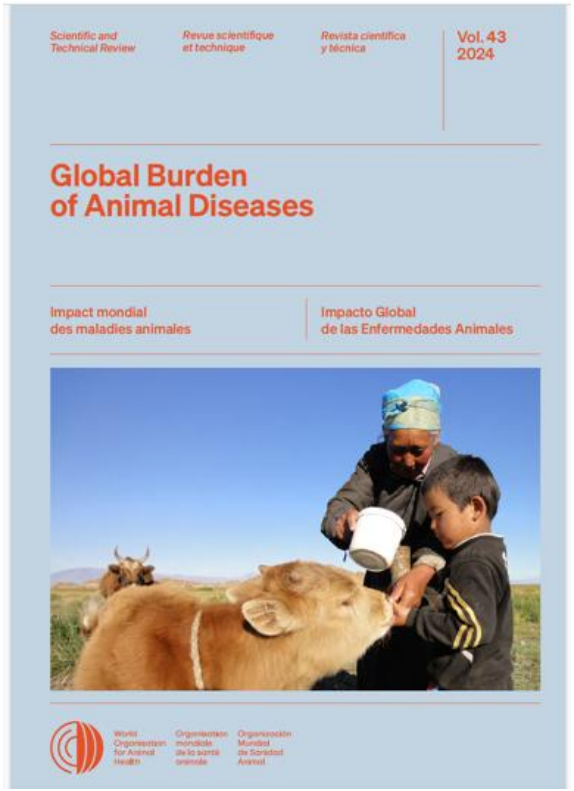
South Africa:
impact of heat stress and bovine respiratory disease complex on beef cattle in feedlots

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Meyer et al, 2025

4- GBADs products

GBADs special edition

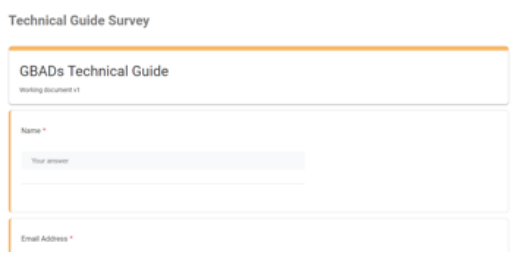


https://www.woah.org/en/document/vol-43-global-burden-of-animal-diseases/

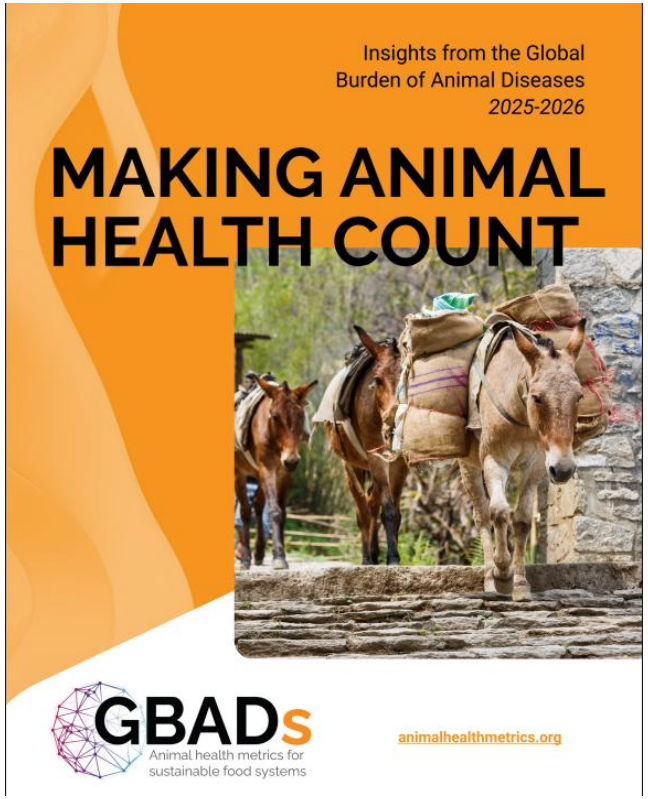
GBADs Technical guide

Version 1.1 Released 19th January 2026
Available via the **GBADs** website - https://animalhealthmetrics.org/gbads-technical-guide-v1-1/





GBADs annual report



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02 Your turn now!

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CEEAH in future

- Which diseases would you priorities for economic assessment?
- What are, in your view, the main limitations to conducting economic assessments in your country?
- What type of information would be most useful to better support investment decisions, disease prevention and/or eradication?

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Thanks for your attention

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