FIERAVICOLA, Fiera di Rimini

4 maggio 2023

Environmental impact of poultry and rabbit production

Impatto ambientale delle produzioni avicunicole

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UNIVERSITAT POLITÈCNICA DE VALÈNCIA


IL BUONO, IL BRUTTO, IL CATTIVO
SUITE
COMPOSED BY
ENNIO MORRICONE

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1. **This is VERY important**
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Greenhouse gases

Lack of snow condemns Italy's Po to a desperately dry summer

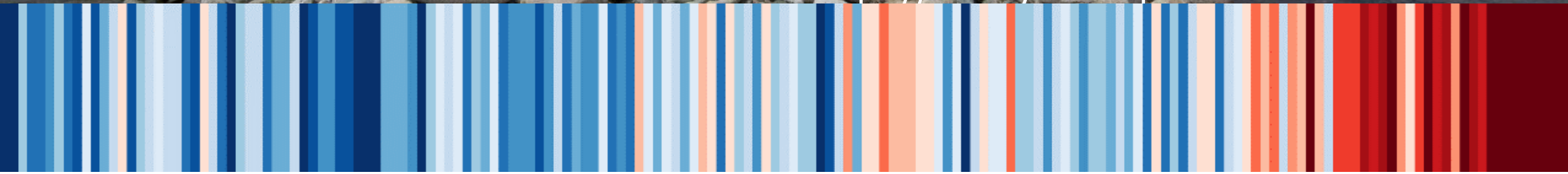
Italy's largest river, that's home to fishers and boats, feeds rich farmlands, powers turbines and quenches local populations across its banks and delta, is already as low as it was last summer, sparking fears of precariously dry months ahead with thos...

By PAOLO SANTALUCIA Associated Press
April 24, 2023, 4:01 AM

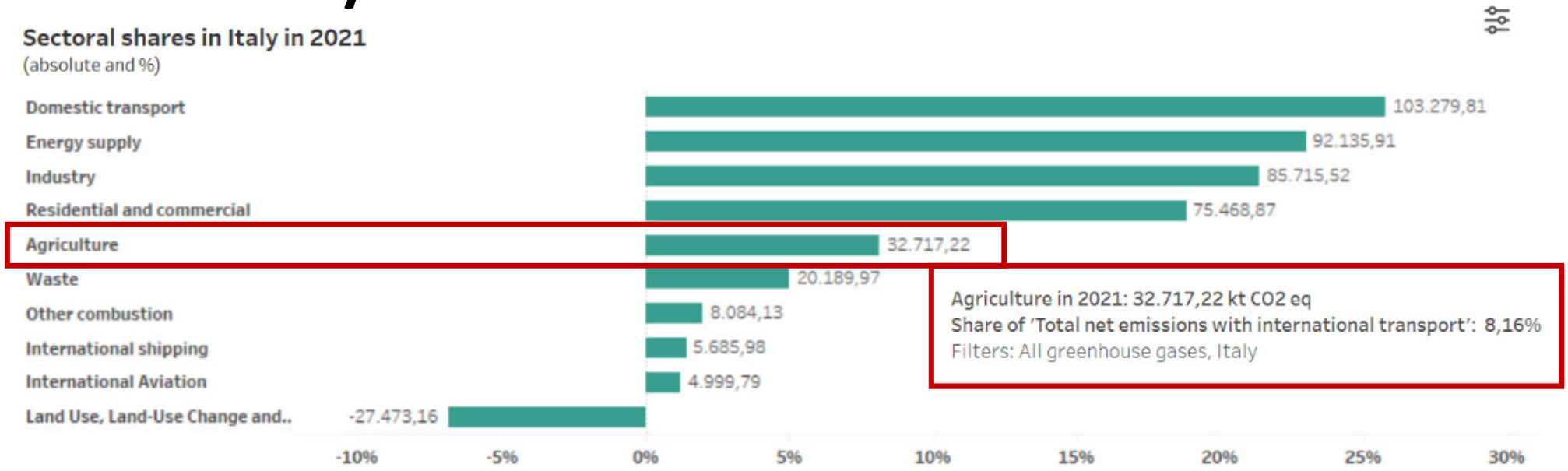
1850 → 2022

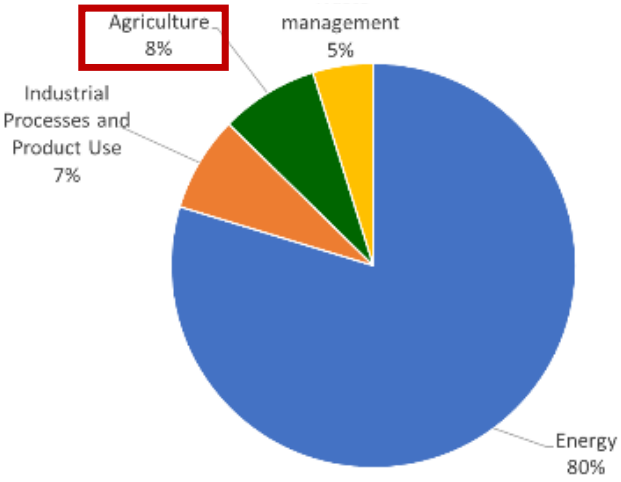
Year

https://showyourstripes.info

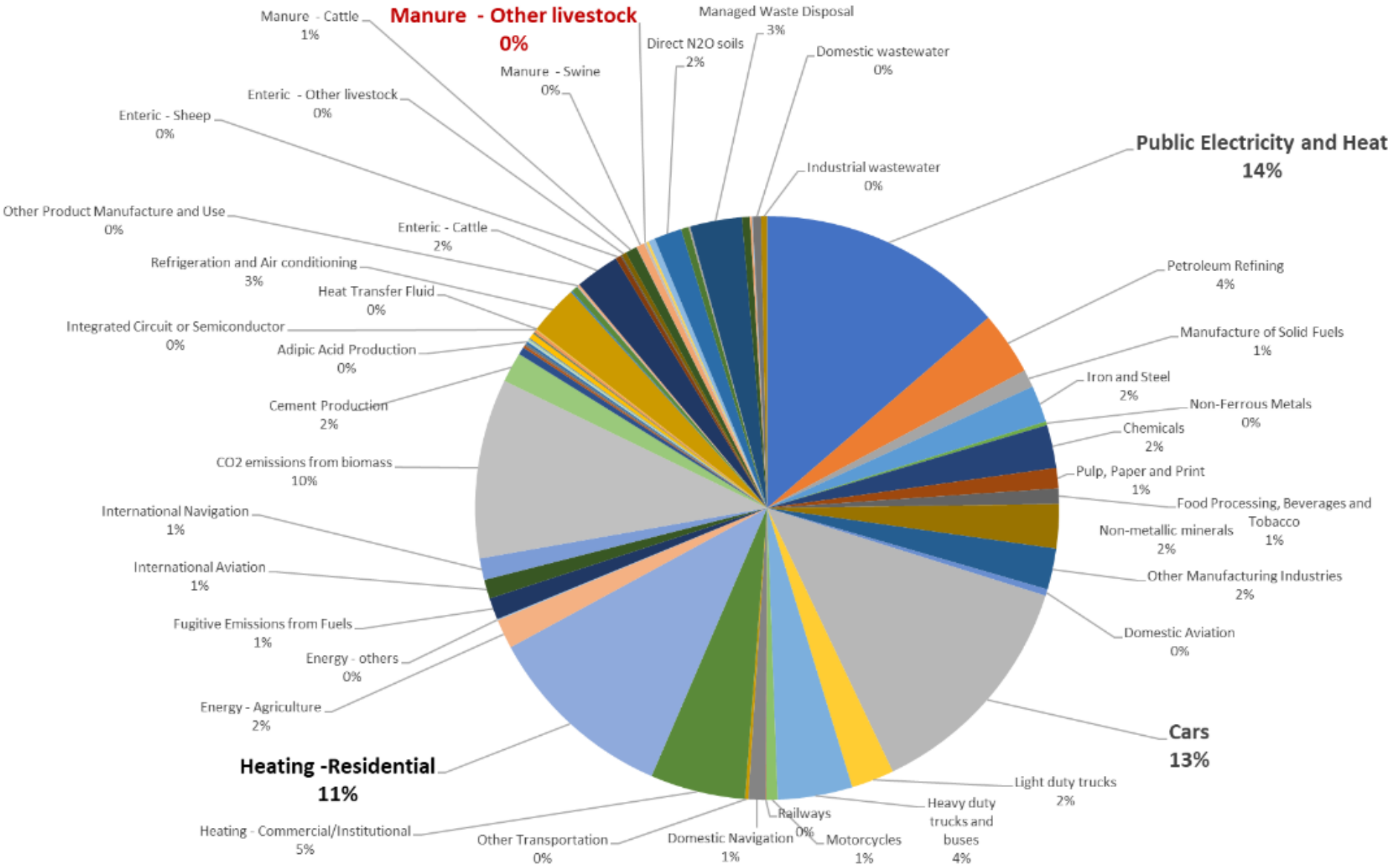


GHG in Italy



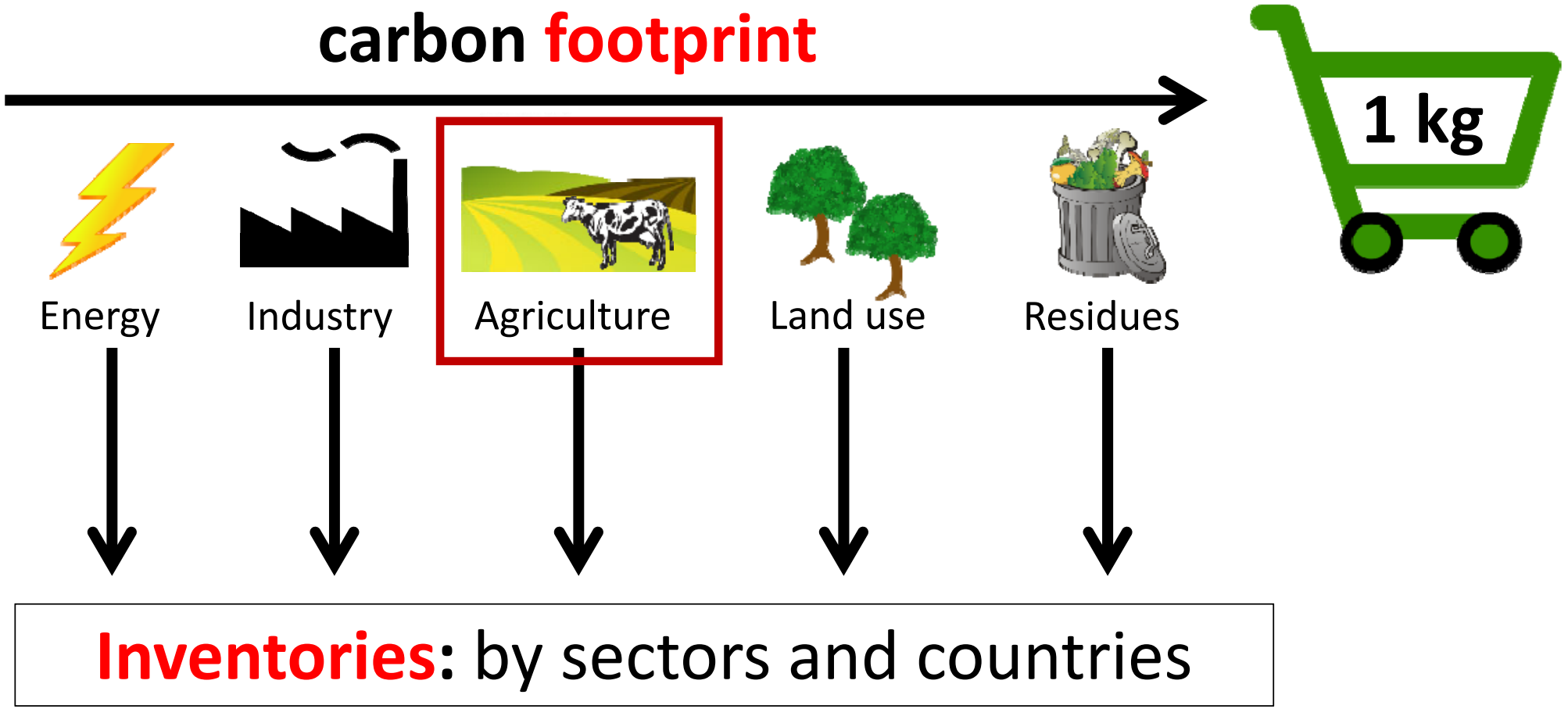


https://www.eea.europa.eu/data-and-maps/data/data-viewers/greenhouse-gases-viewer

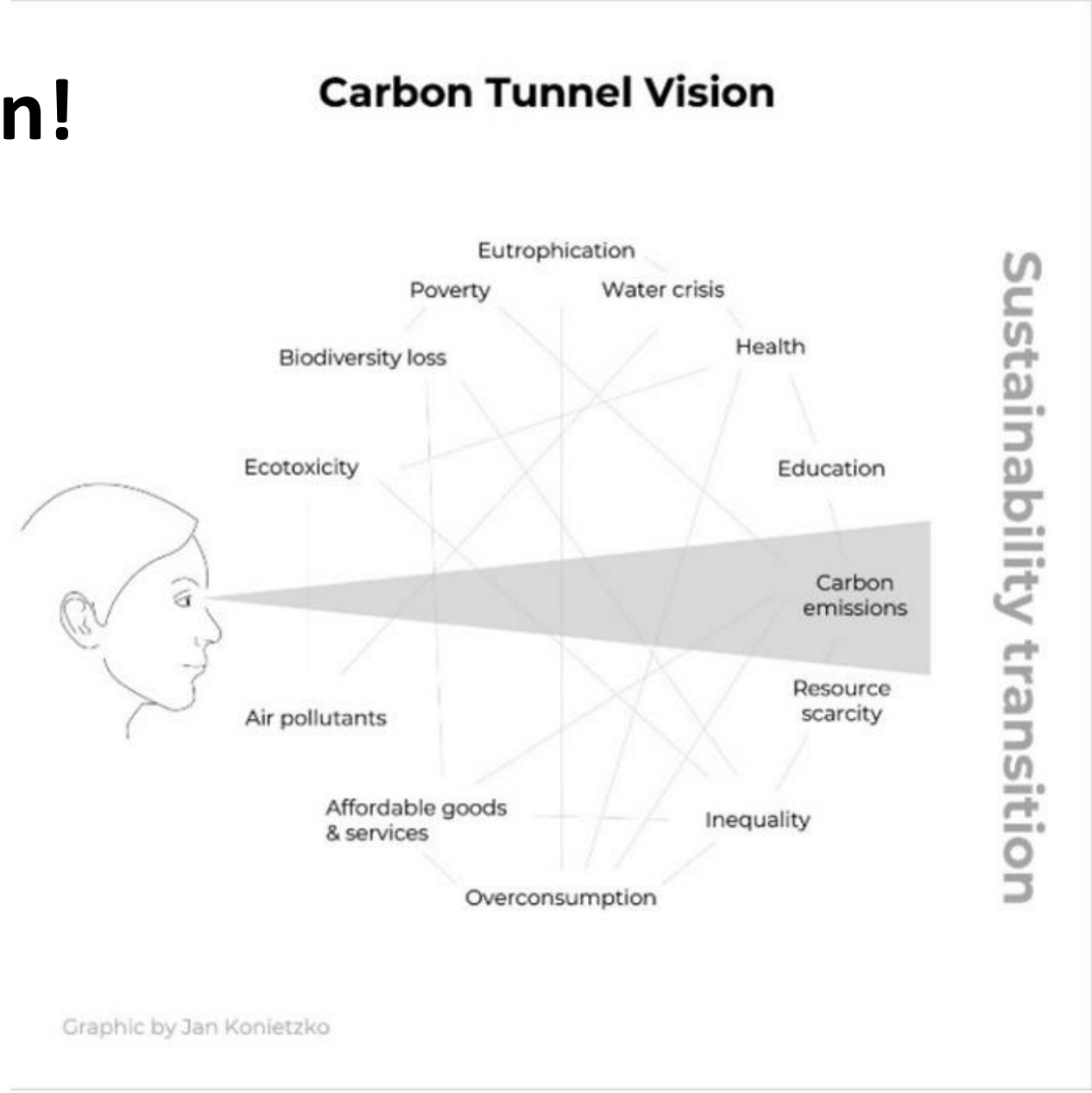


https://www.eea.europa.eu/data-and-maps/data/data-viewers/greenhouse-gases-viewer

Inventories vs Carbon footprint

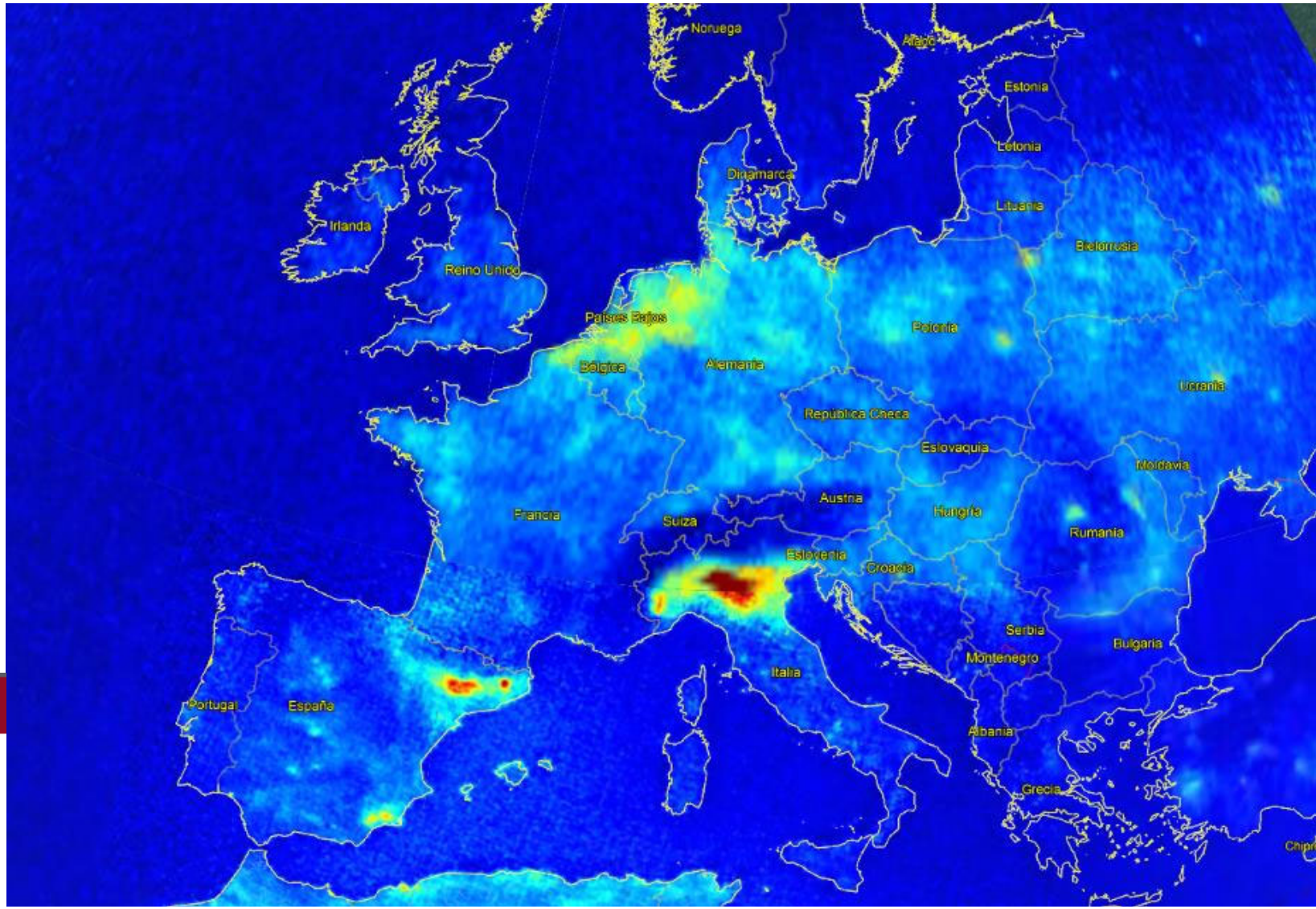


Don’t stick to carbon!



https://twitter.com/pablorros_/status/1477380688479461388/photo/1

Ammonia…



MENU nature

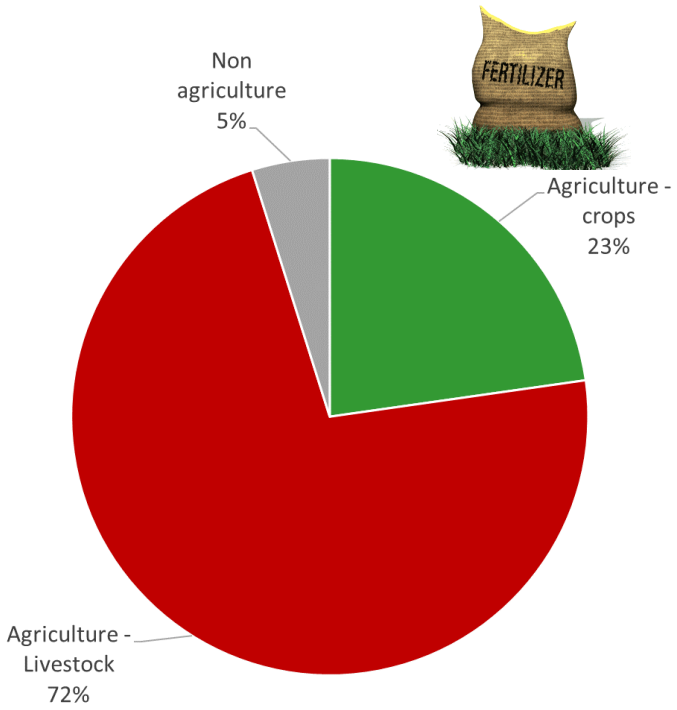
Letter | Published: 05 December 2018

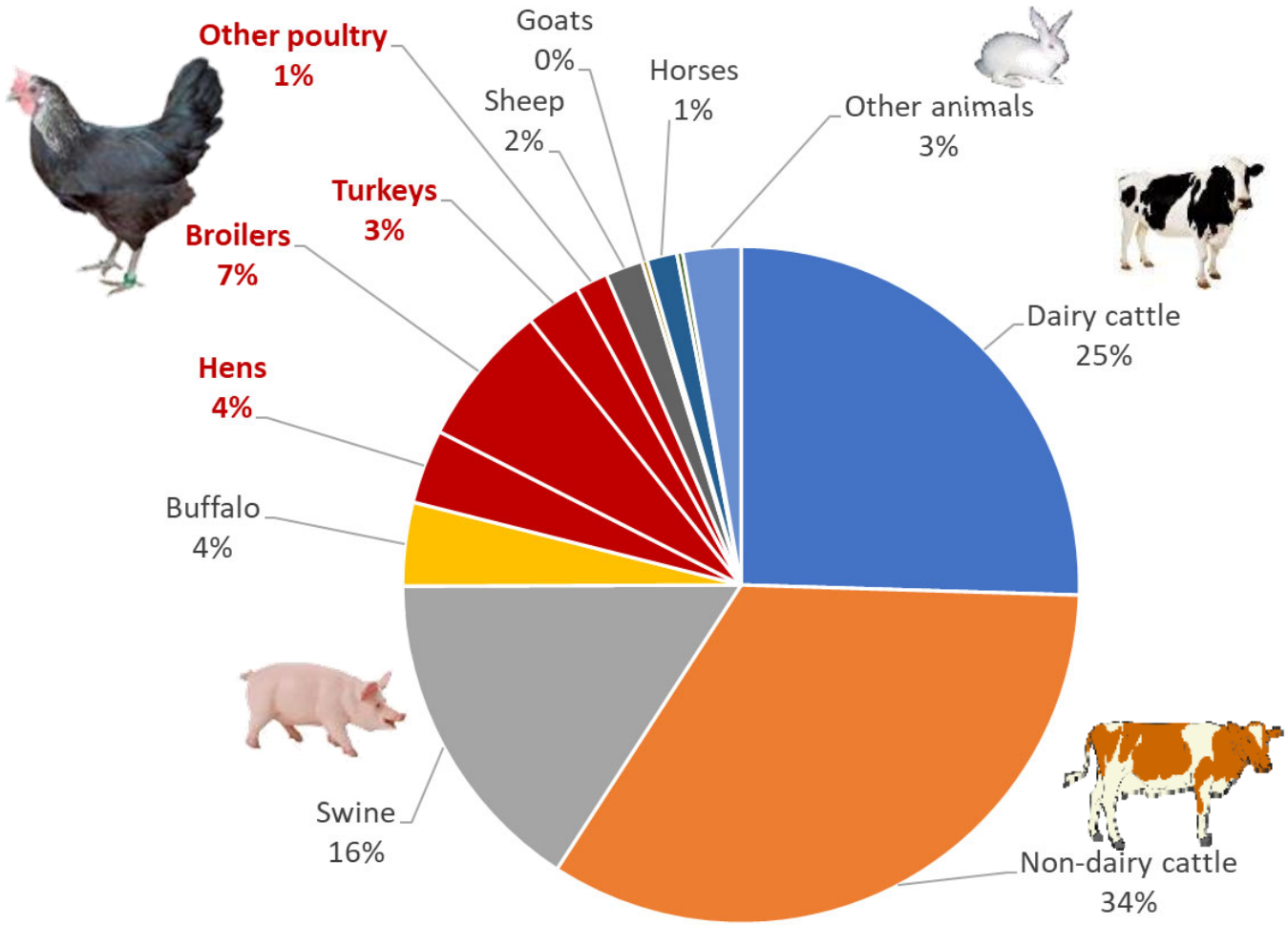
Industrial and agricultural ammonia point sources exposed

Martin Van Damme, Lieven Clarisse, Simon Whitburn, Juliette Hadji-Lazaro, Daniel Hurtmans, Cathy Clerbaux & Pierre-François Coheur

Nature **564**, 99–103 (2018) | Download Citation

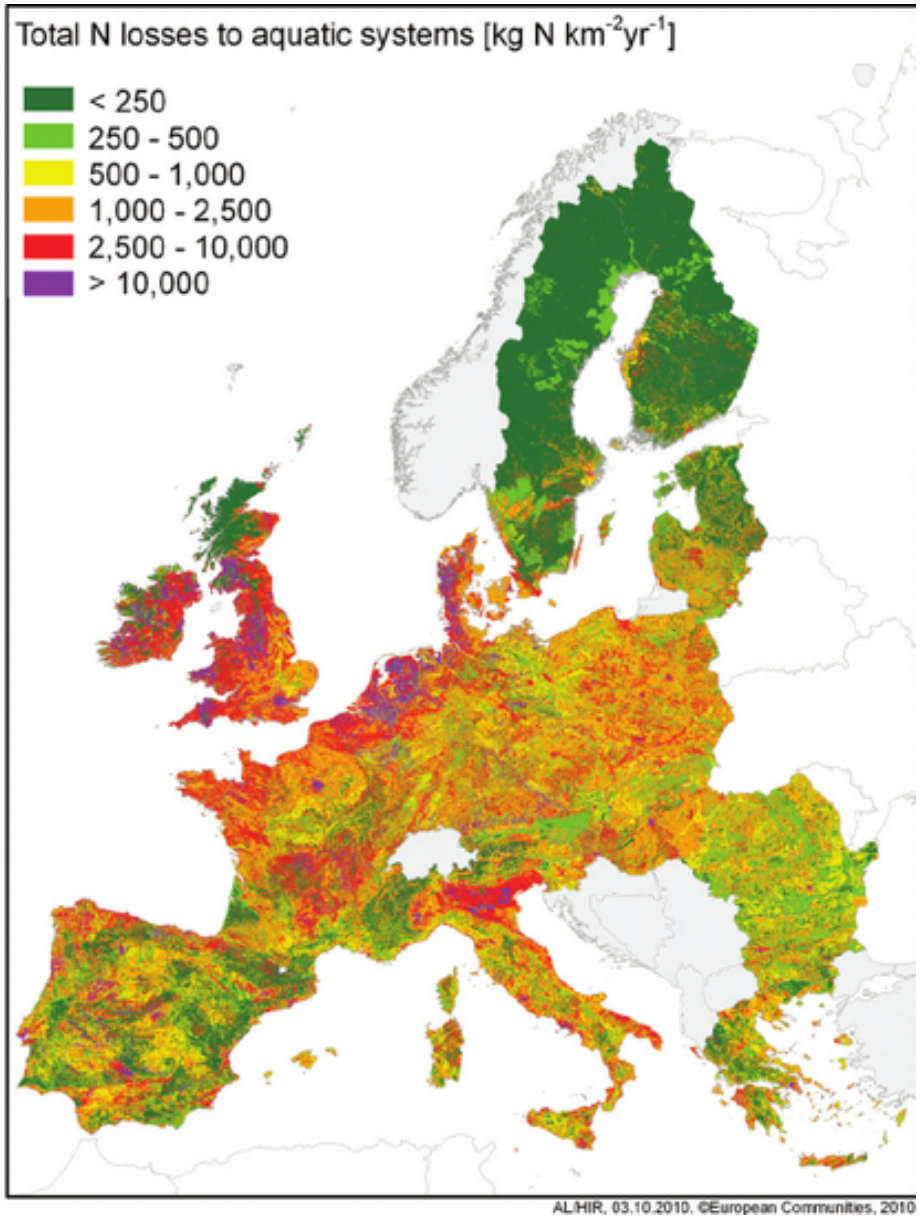
Ammonia emissions in Italy



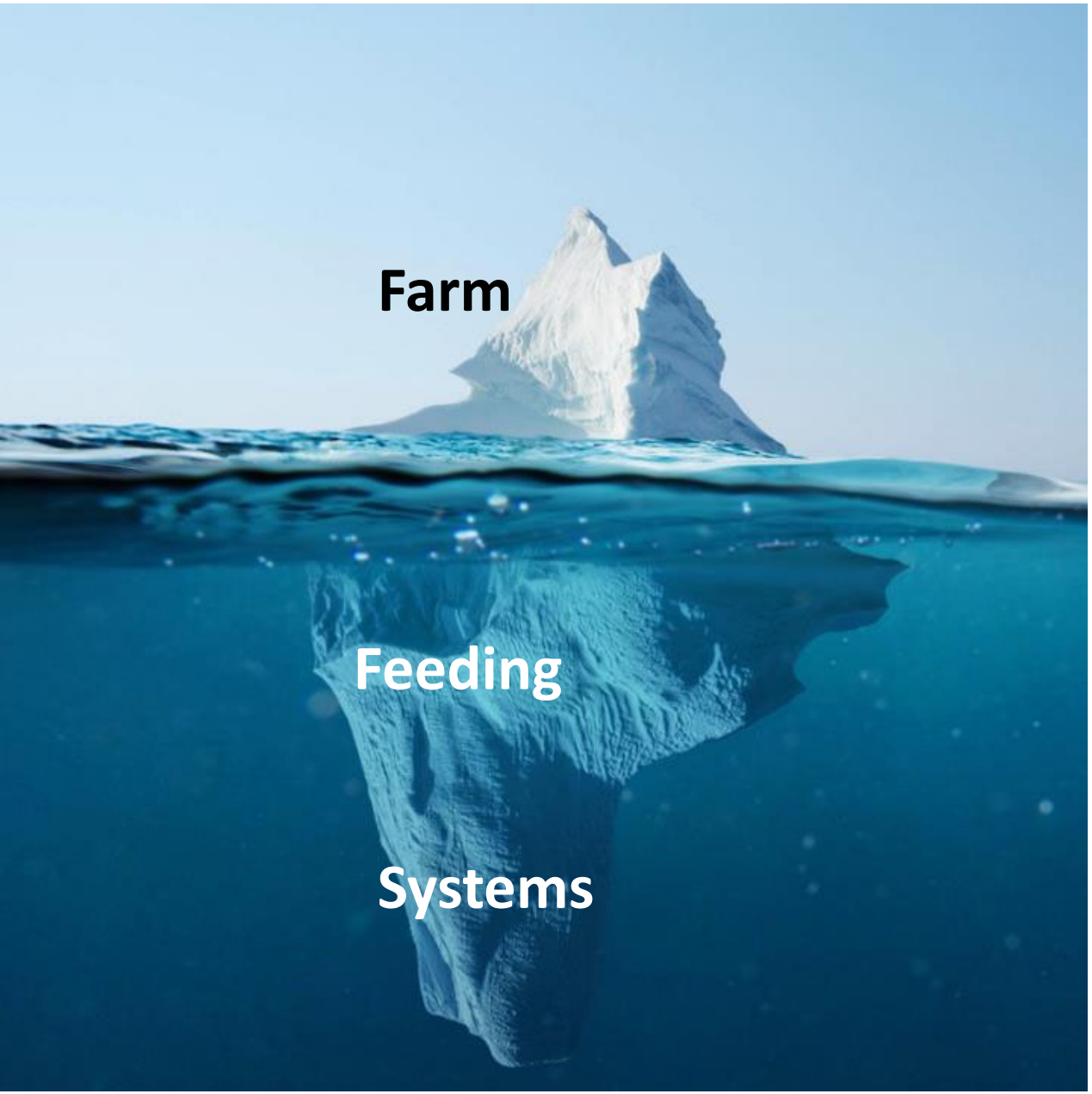


https://www.eea.europa.eu/data-and-maps/dashboards/air-pollutant-emissions-data-viewer-4

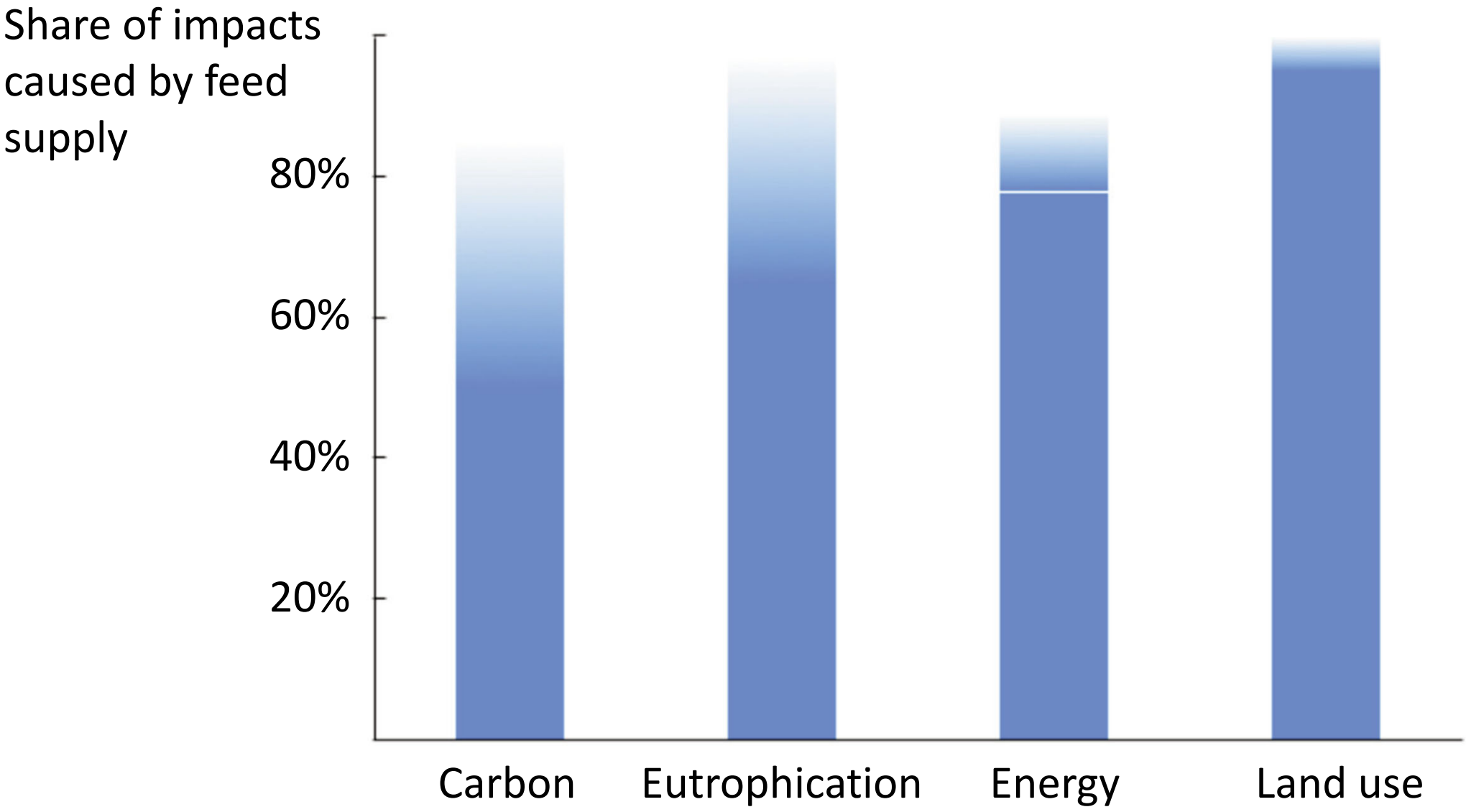
Groundwater pollution (nitrates)



Sutton and Billen (2011)
http://www.nine-esf.org/node/360/ENA-Book.html



Beyond the farm boundaries



Monogastric animals

http://dx.doi.org/10.12706/itea.2020.039

The military's contribution to climate change

Categories: Blog, Military and the environment, Military emissions blogs, Slider, Topic · June 16, 2021

A lack of transparency makes it hard to calculate the true scale of military emissions but it's clear they are significant.

https://ceobs.org/the-militarys-contribution-to-climate-change/

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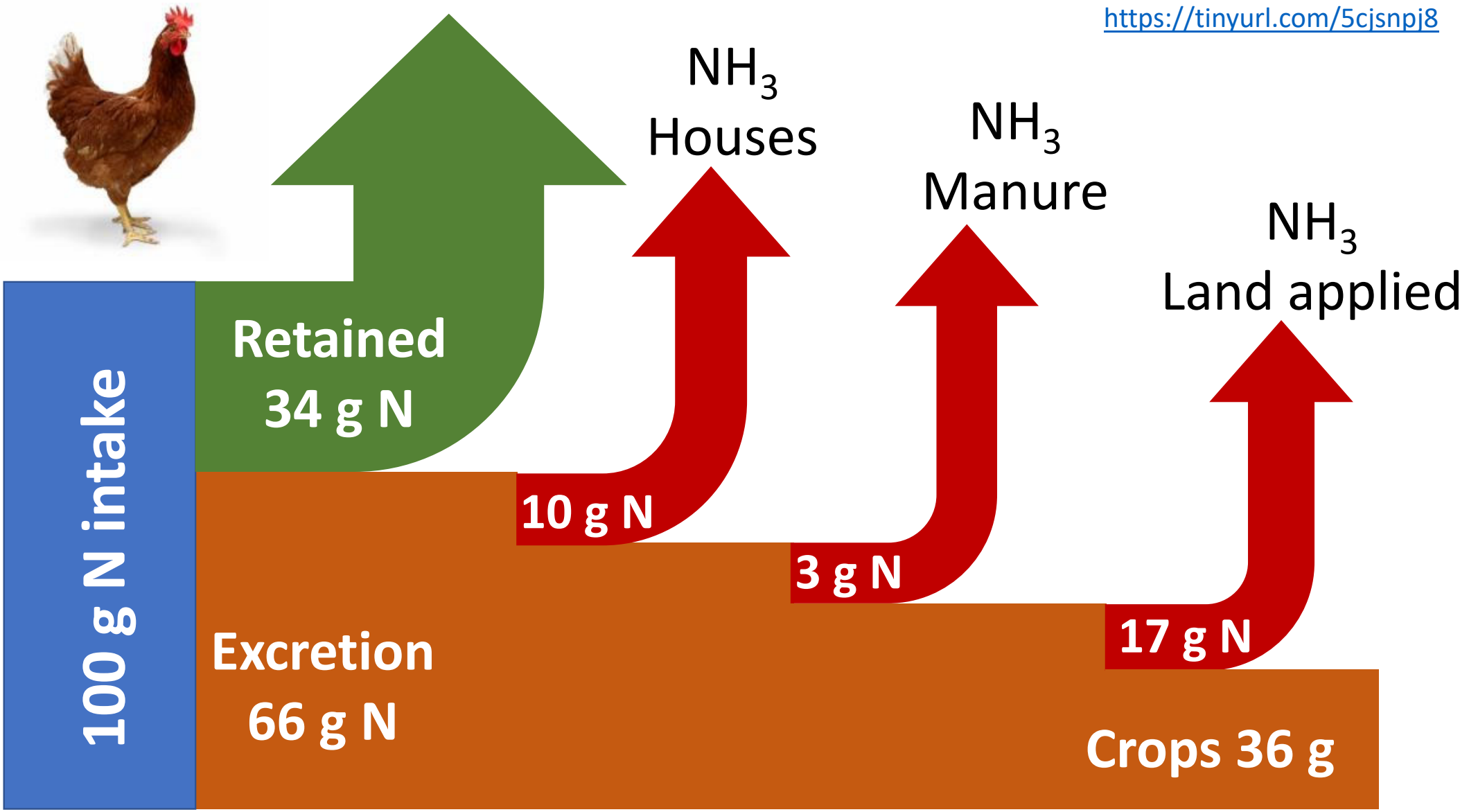
Spanish Ministry of Agriculture
https://tinyurl.com/5cjsnpj8



Spanish Ministry of Agriculture
https://tinyurl.com/5cjsnpj8

100 g N intake

Retained
49 g N

Excretion
51 g N

NH_3
Houses

8 g N

NH_3
Manure

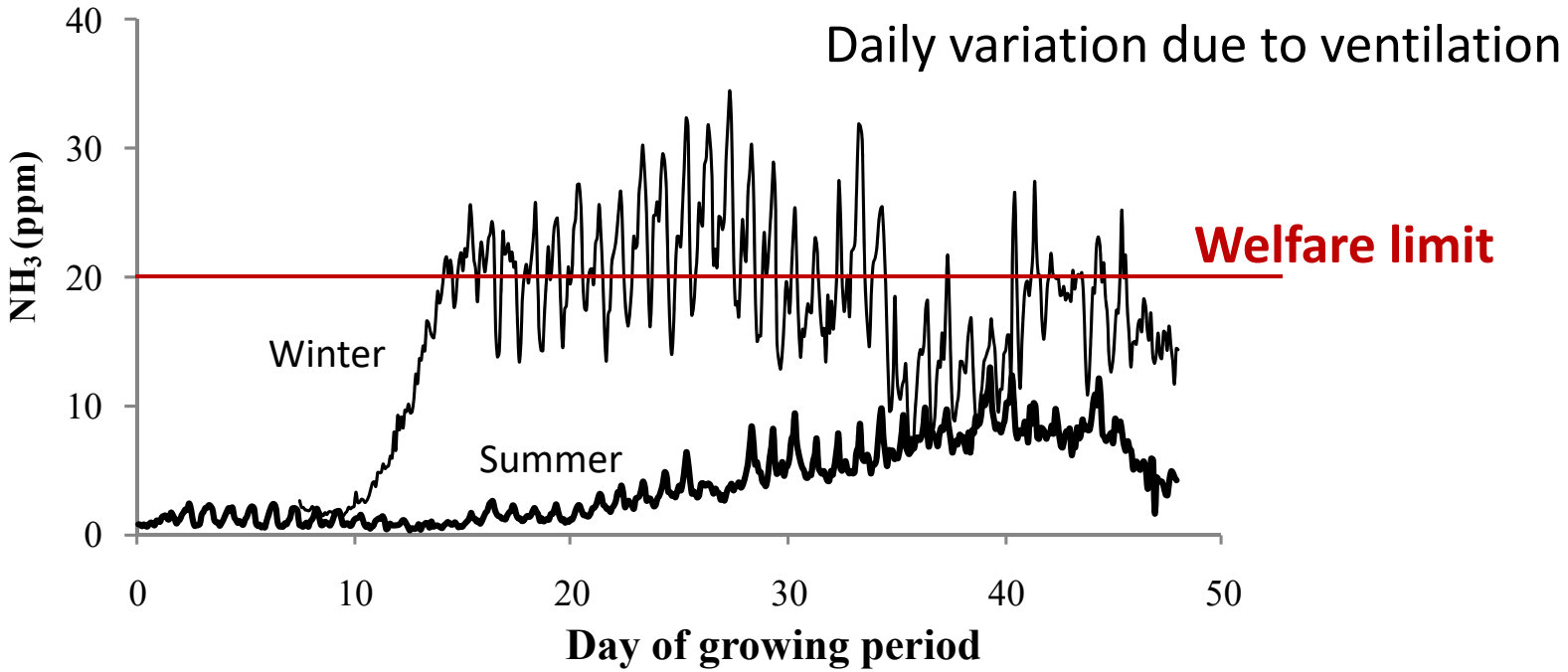
9 g N

NH_3
Land applied

8 g N

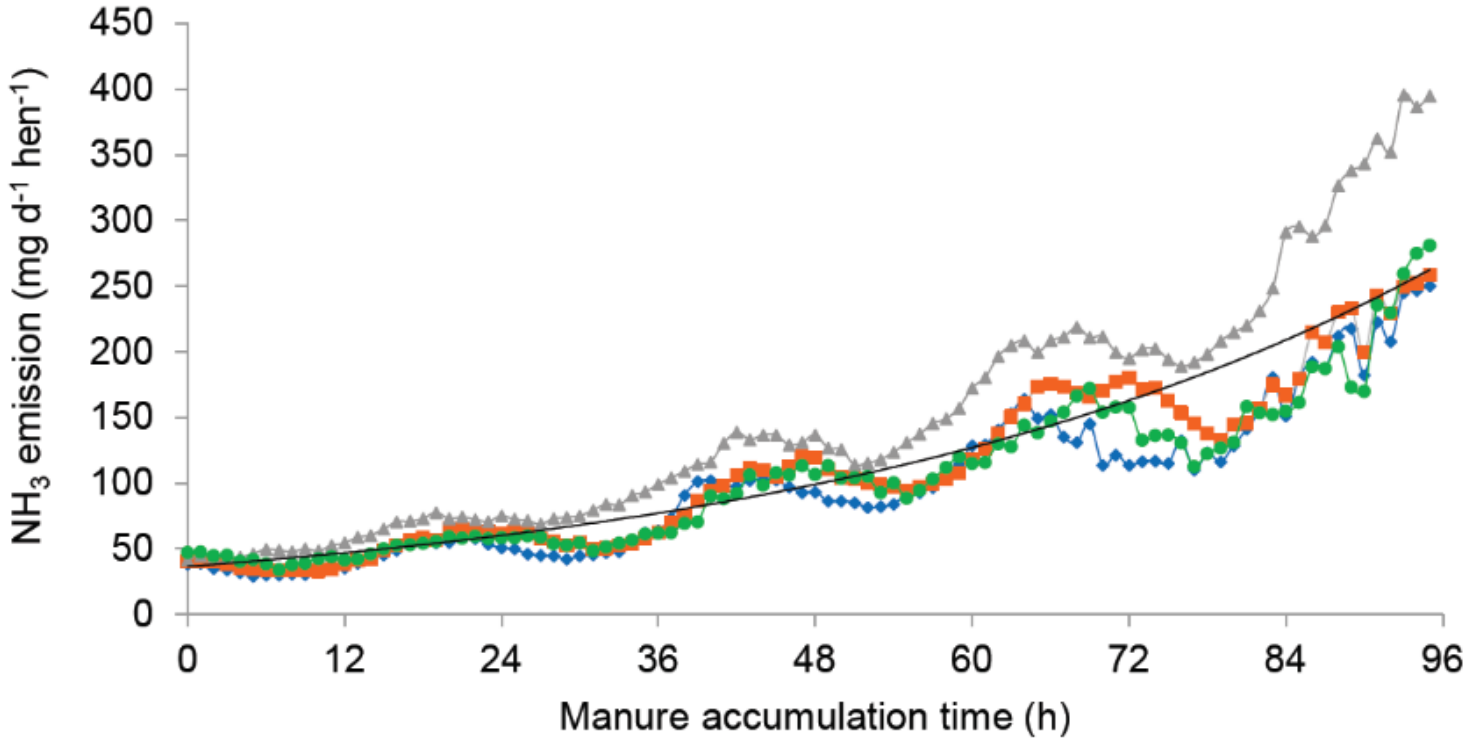
Crops 26 g

Emissions from broilers look like…



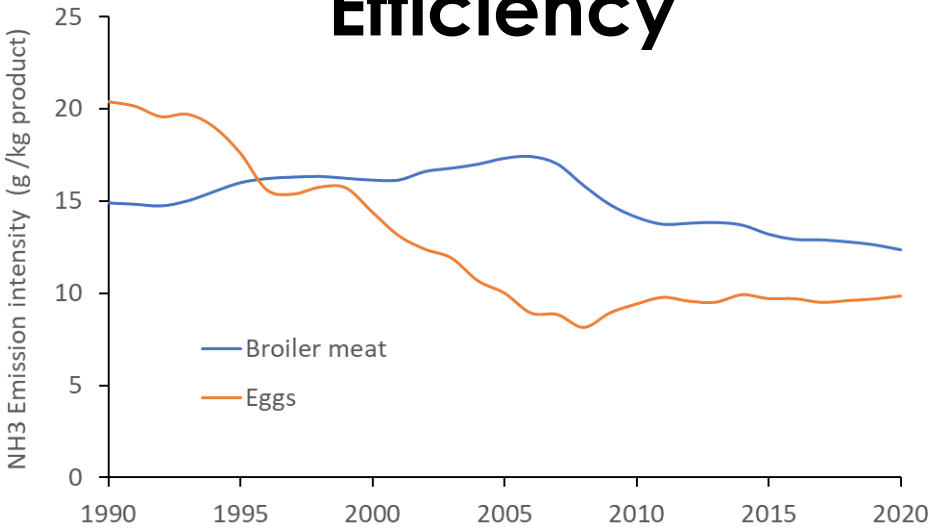
Calvet et al. (2011)
https://www.sciencedirect.com/science/article/pii/S0032579119419433

Emissions from hens look like…



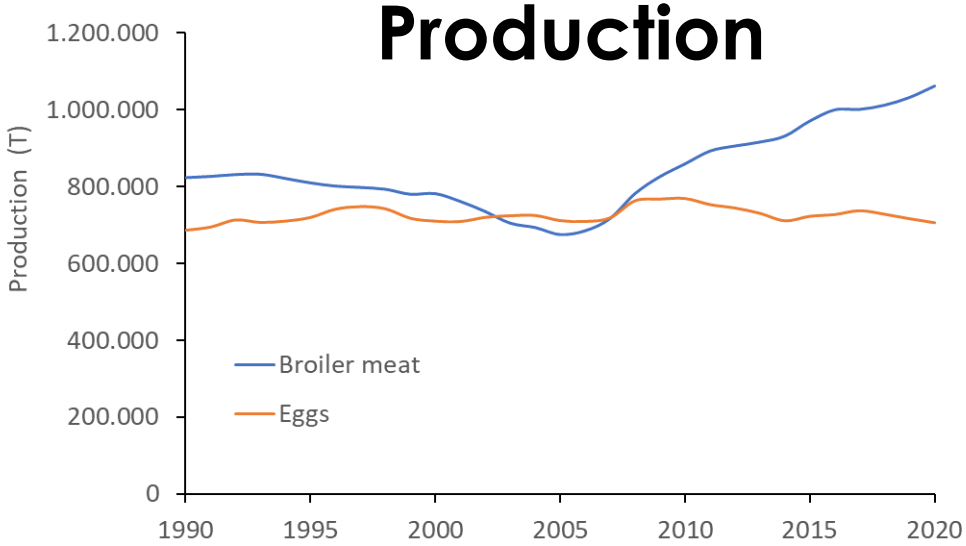
Rosa et al. (2021) -PhD Thesis
https://addi.ehu.es/handle/10810/52939

Efficiency



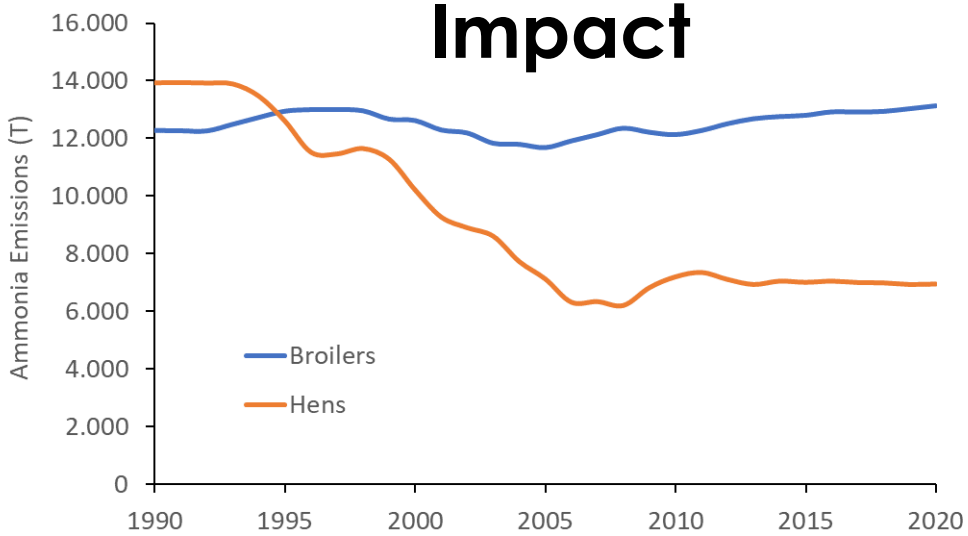
X

Production



=

Impact



Data: FAO and Italian emisión inventory

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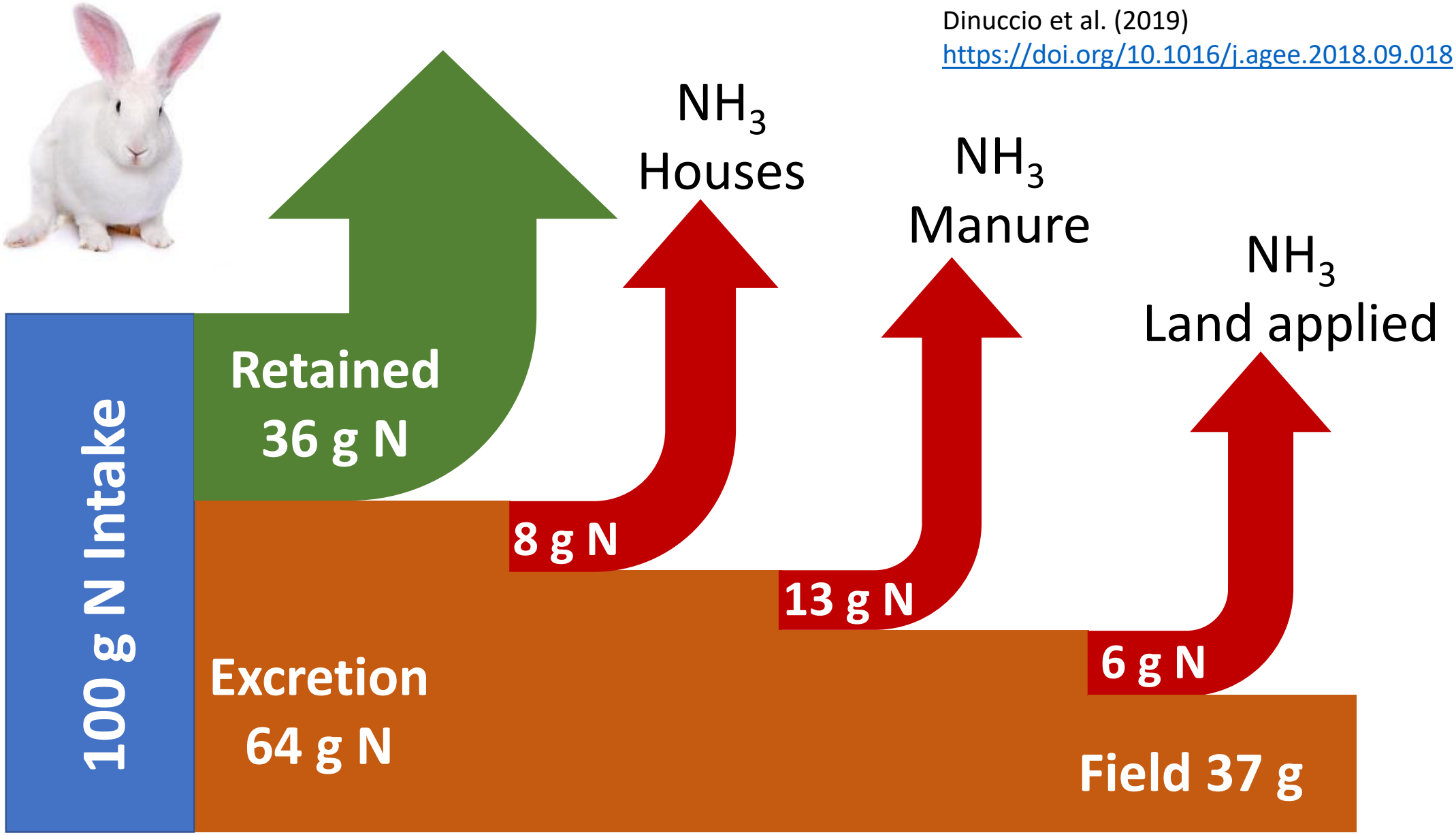
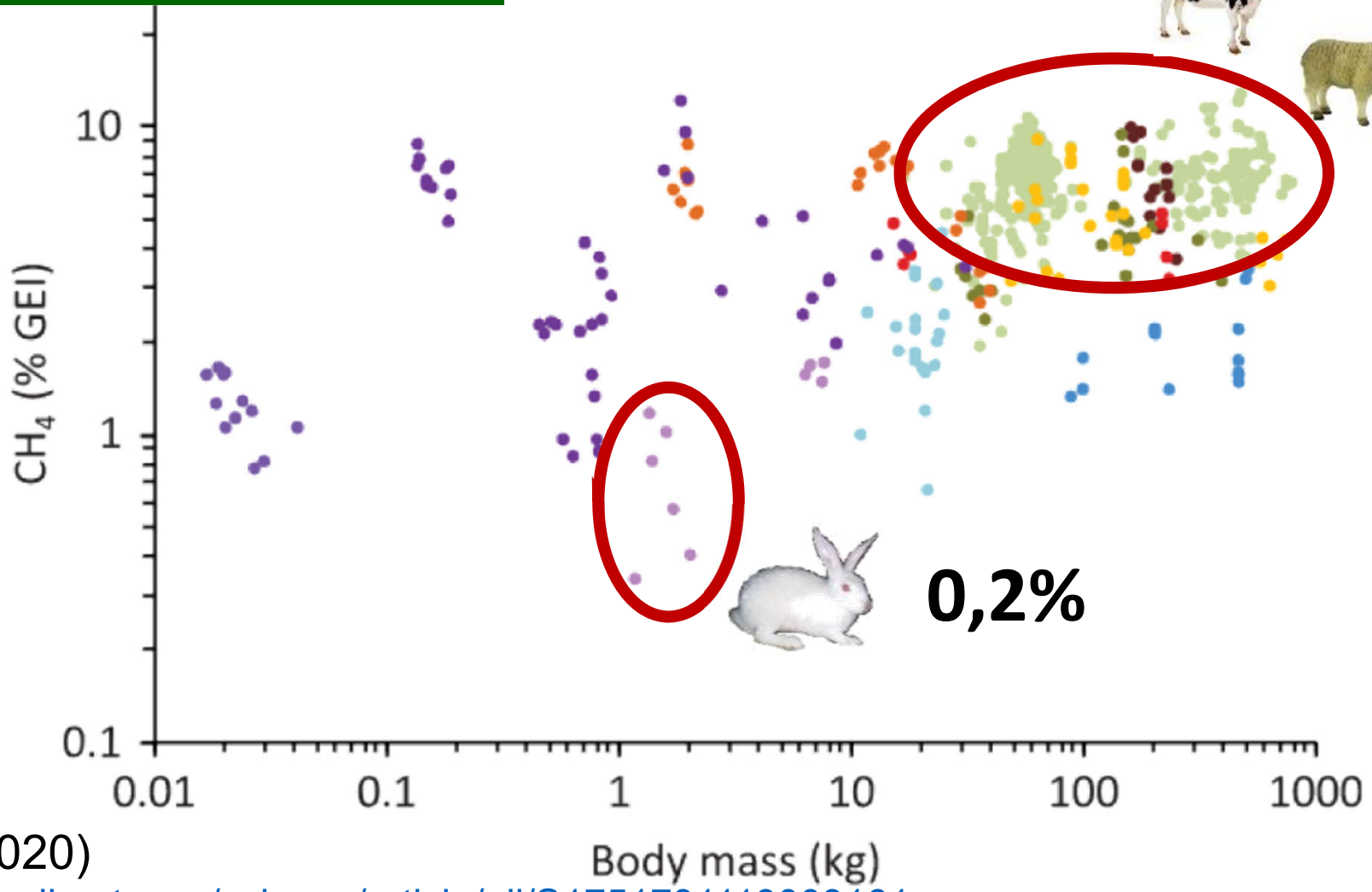


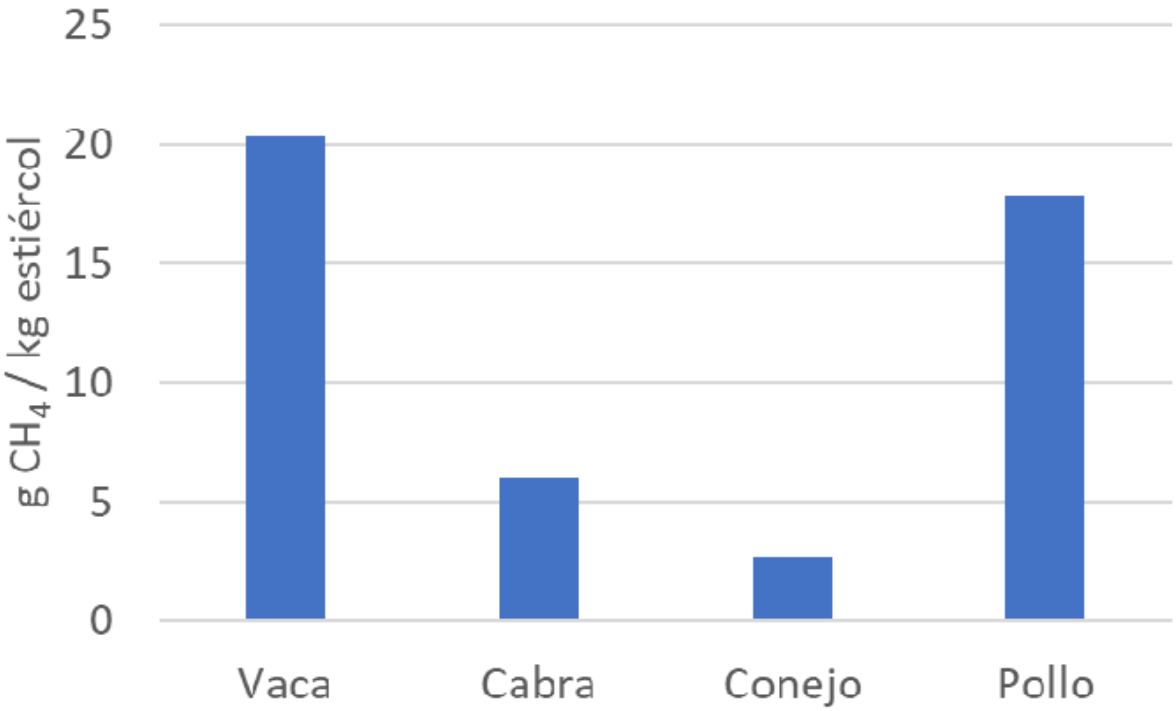
Dinuccio et al. (2019)
https://doi.org/10.1016/j.agee.2018.09.018

Enteric Methane



Clauss et al. (2020)
https://www.sciencedirect.com/science/article/pii/S1751731119003161

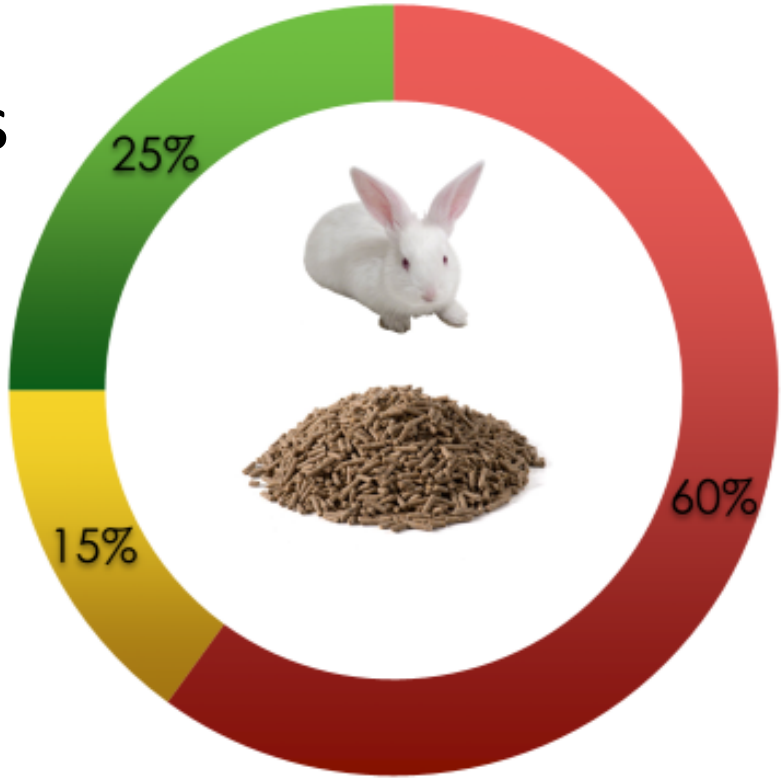
Methane from manure



Hidayat et al. (2021)
https://iopscience.iop.org/article/10.1088/1755-

Feeding impacts

Human-edible crops

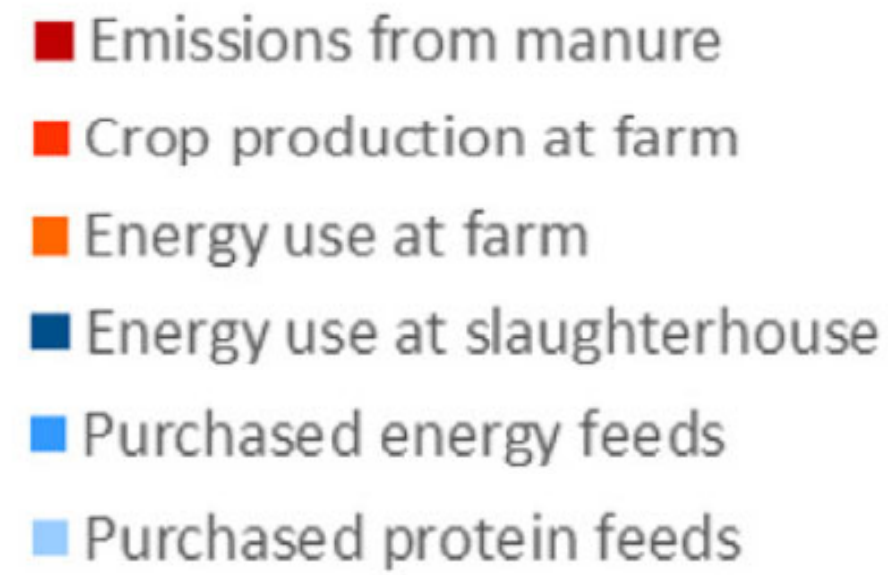


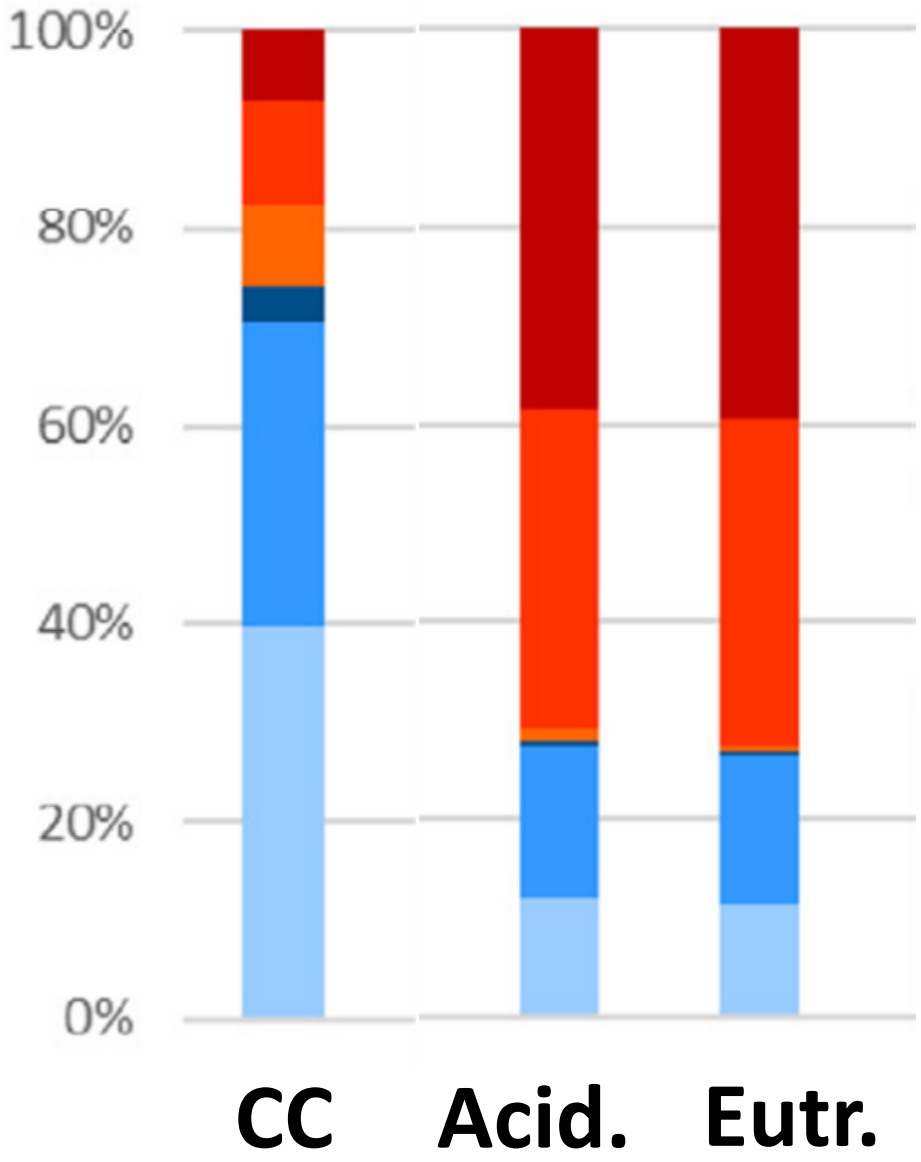
By-products

Non-edible crops

Rabbit Footprint

Origins





Cesari et al. (2018)
https://doi.org/10.1016/j.meatsci.2018.07.011

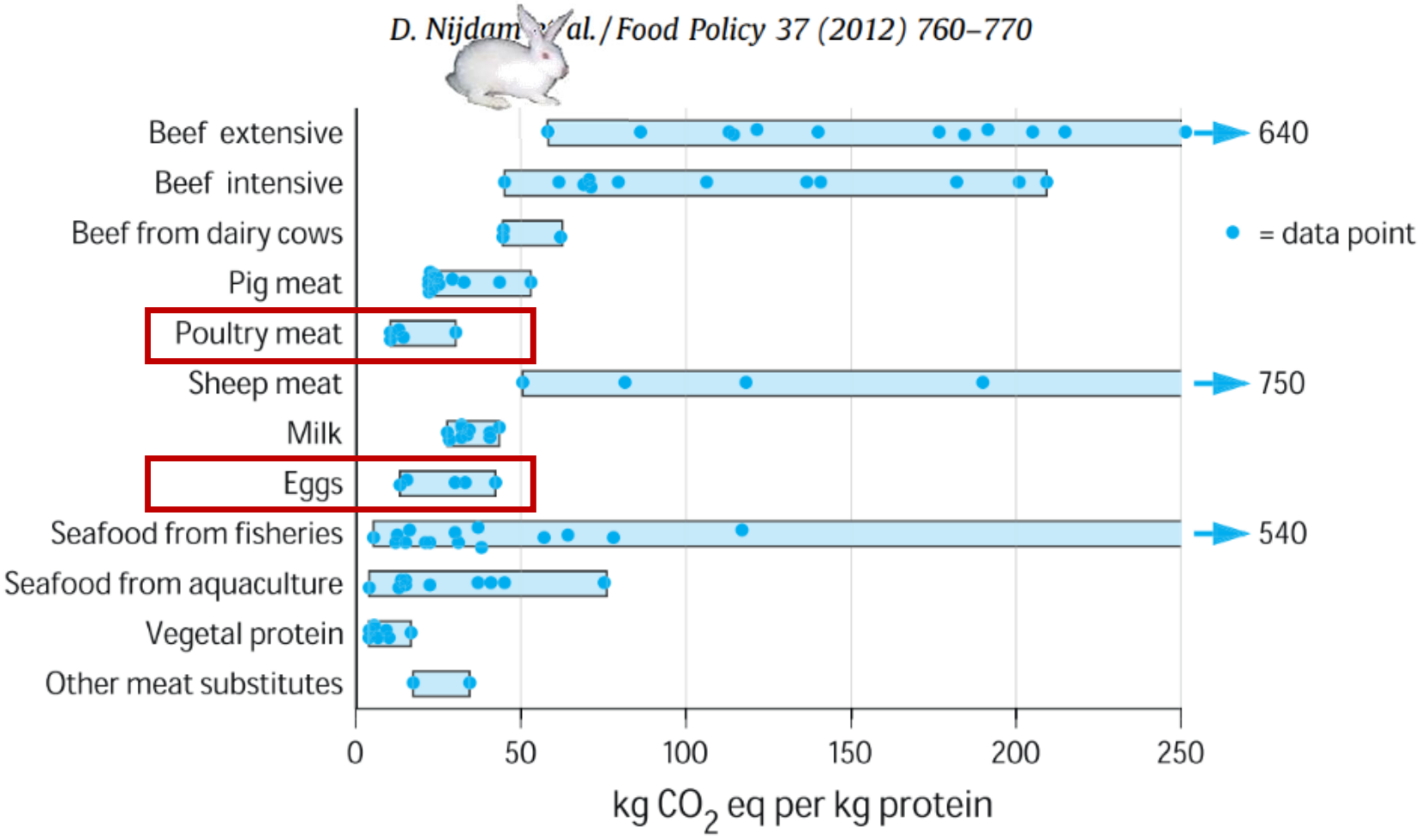


Fig. 1. Carbon footprints per kilogram of protein.

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#1 - LOOK AT WHAT YOU DO

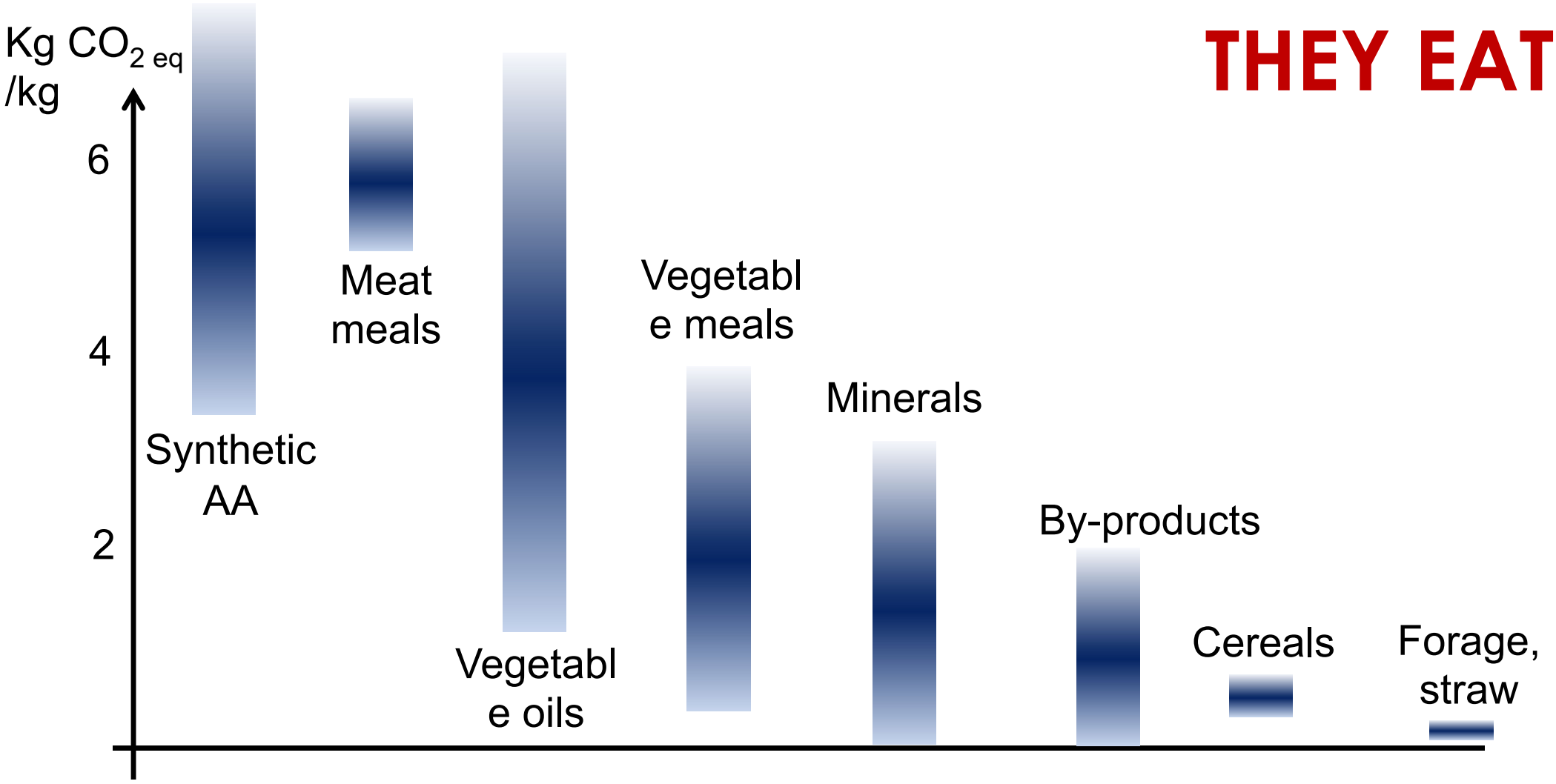
Efficiency

- Keep improving
  management, facilities, nutrition genetics.

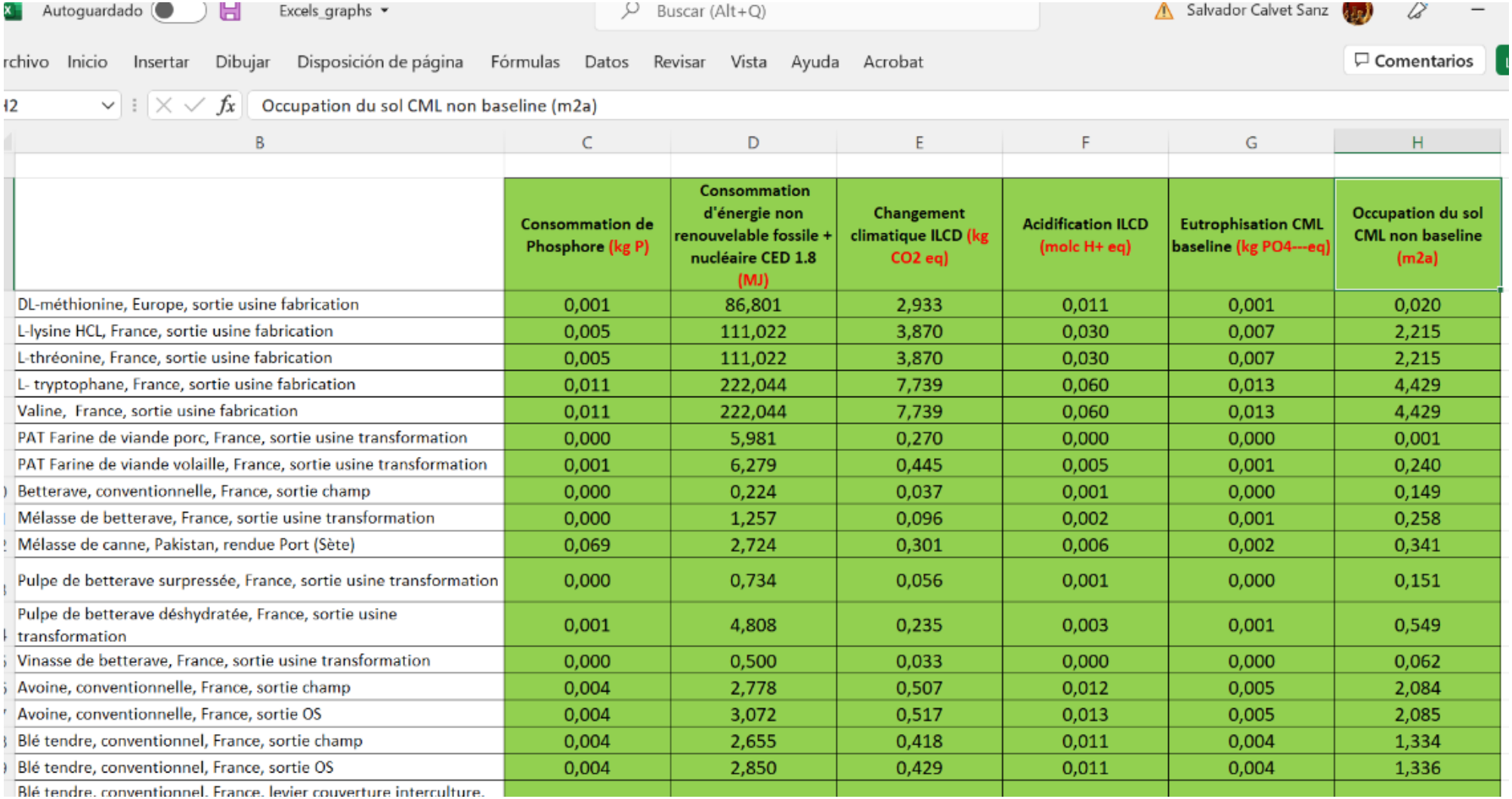
Manure management

- Avoid losses
- Optimize use as fertiliser
  amount, timing, application form

#2 – LOOK AT WHAT THEY EAT



Wilfart et al. (2016)
DOI:10.1371/journal.pone.0167343



	Consommation de Phosphore (kg P)	Consommation d'énergie non renouvelable fossile + nucléaire CED 1.8 (MJ)	Changement climatique ILCD (kg CO2 eq)	Acidification ILCD (molc H+ eq)	Eutrophisation CML baseline (kg PO4---eq)	Occupation du sol CML non baseline (m2a)
DL-méthionine, Europe, sortie usine fabrication	0,001	86,801	2,933	0,011	0,001	0,020
L-lysine HCL, France, sortie usine fabrication	0,005	111,022	3,870	0,030	0,007	2,215
L-thréonine, France, sortie usine fabrication	0,005	111,022	3,870	0,030	0,007	2,215
L- tryptophane, France, sortie usine fabrication	0,011	222,044	7,739	0,060	0,013	4,429
Valine, France, sortie usine fabrication	0,011	222,044	7,739	0,060	0,013	4,429
PAT Farine de viande porc, France, sortie usine transformation	0,000	5,981	0,270	0,000	0,000	0,001
PAT Farine de viande volaille, France, sortie usine transformation	0,001	6,279	0,445	0,005	0,001	0,240
Betterave, conventionnelle, France, sortie champ	0,000	0,224	0,037	0,001	0,000	0,149
Mélasse de betterave, France, sortie usine transformation	0,000	1,257	0,096	0,002	0,001	0,258
Mélasse de canne, Pakistan, rendue Port (Sète)	0,069	2,724	0,301	0,006	0,002	0,341
Pulpe de betterave surpressée, France, sortie usine transformation	0,000	0,734	0,056	0,001	0,000	0,151
Pulpe de betterave déshydratée, France, sortie usine transformation	0,001	4,808	0,235	0,003	0,001	0,549
Vinasse de betterave, France, sortie usine transformation	0,000	0,500	0,033	0,000	0,000	0,062
Avoine, conventionnelle, France, sortie champ	0,004	2,778	0,507	0,012	0,005	2,084
Avoine, conventionnelle, France, sortie OS	0,004	3,072	0,517	0,013	0,005	2,085
Blé tendre, conventionnel, France, sortie champ	0,004	2,655	0,418	0,011	0,004	1,334
Blé tendre, conventionnel, France, sortie OS	0,004	2,850	0,429	0,011	0,004	1,336
Blé tendre, conventionnel, France, levier couverture interculture,						

#3 – Use technology smartly

Plans for next year?

XVIth European Poultry Conference

VALENCIA, SPAIN 24th-28th June 2024

https://epc2024.com

13TH WORLD RABBIT CONGRESS

TARRAGONA 2-4 OCTUBRE 2024

FIERAVICOLA, Fiera di Rimini

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