

Scientific perspectives on the sustainable development of our relationship with farm animals

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Alternative title...

**Animal welfare is part of the solution
and not part of the problem**



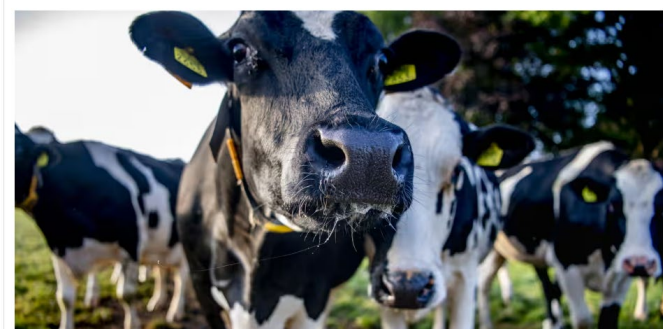
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It is responsible for 1/3 of greenhouse gas emissions, uses 1/2 of habitable land and 4/5 of all water consumption. (Kortleve et al, 2024)

Have we reached 'peak meat'? Why one country is trying to limit its number of livestock

Dutch farms are feeling the squeeze from EU rules and need to make sweeping changes to the farm system - could a huge producer like the US follow suit?



EU pumps four times more money into farming animals than growing plants

CAP scheme, which pays more to farms that occupy more land, drives 'perverse outcomes for a food transition', says study



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The welfare of animals and farmers is suffering also.

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Farmers' suicides: the rising human cost of the EU's agriculture crisis



Everybody wants it to be better



Not at all important 1
Not very important 7
Don't know 1

Animal welfare –
One more thing to
solve!

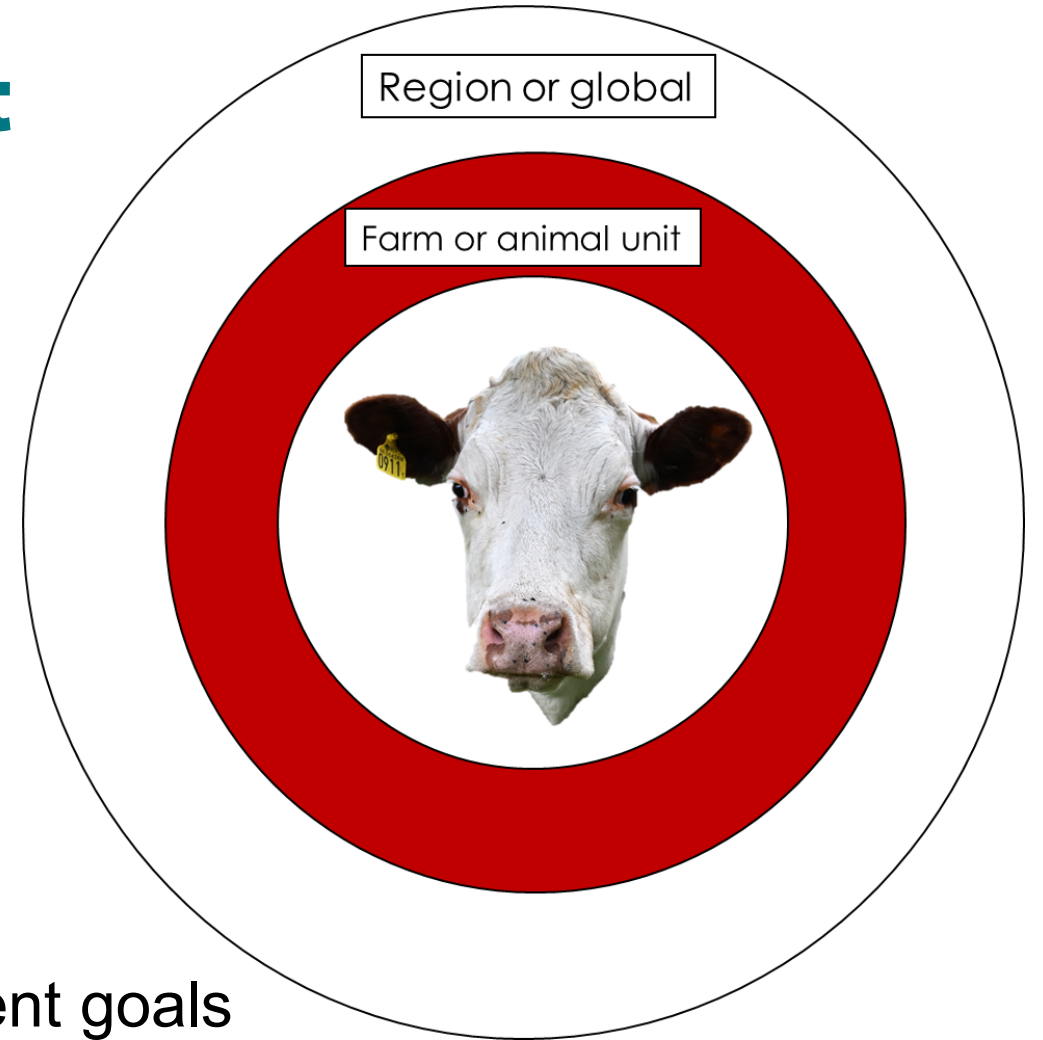
of Europeans
ve that the welfare
med animals should
etter protected in
country than it is
Eurobarometer, 2023



GLOBAL AGENDA FOR
SUSTAINABLE LIVESTOCK

Good animal welfare is at the core of sustainable development

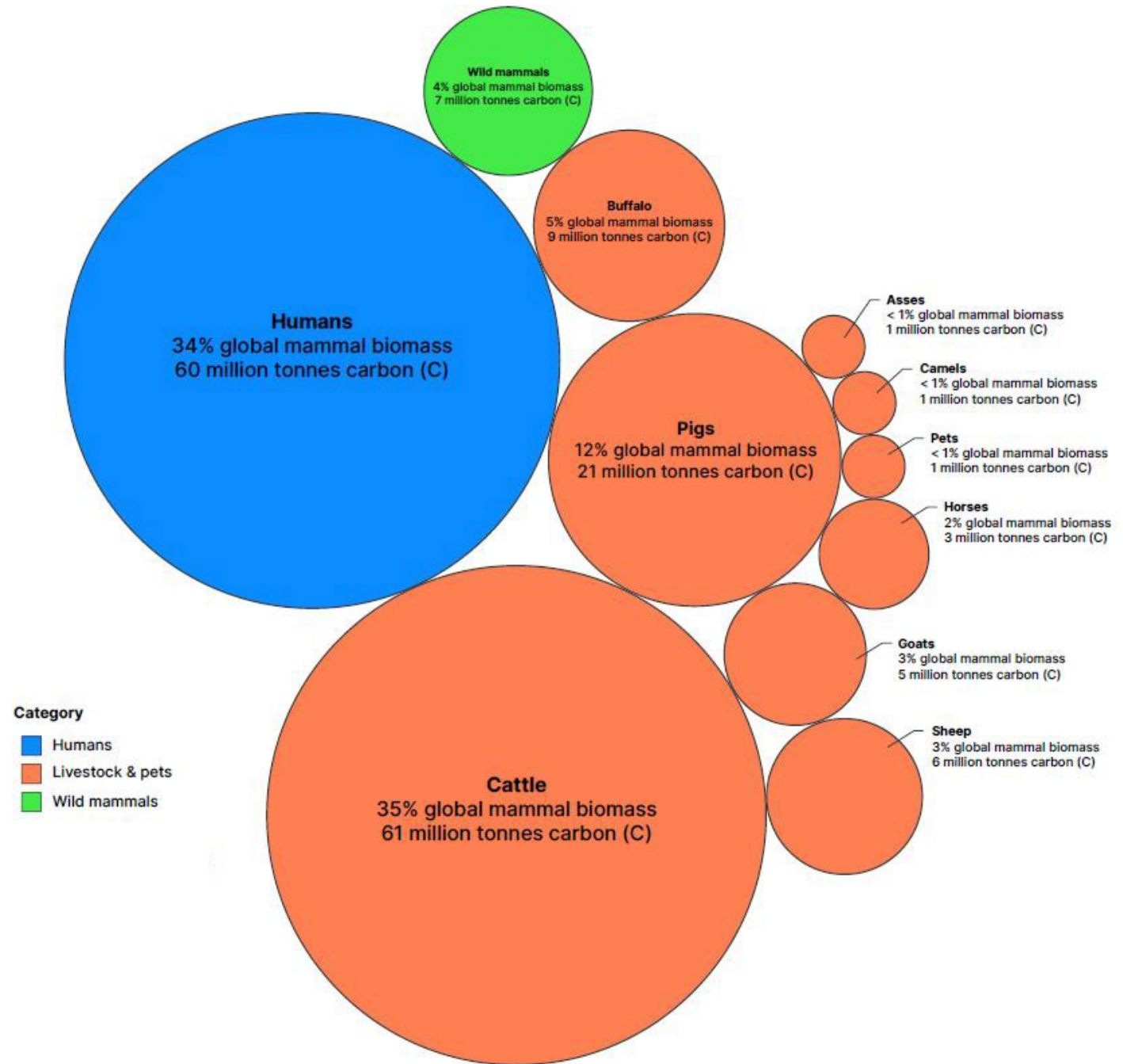
- Animal welfare assessment
- Animal welfare and the sustainable development goals
- A method to identify synergies and conflicts



**Farms animals are
such a big part of
the biomass on our
planet we have to
work with them -
not against them**

Figure: Biomass of farm mammals
significantly outweighs humans and
wild mammals

(Adapted from Richie and Roser, 2021)

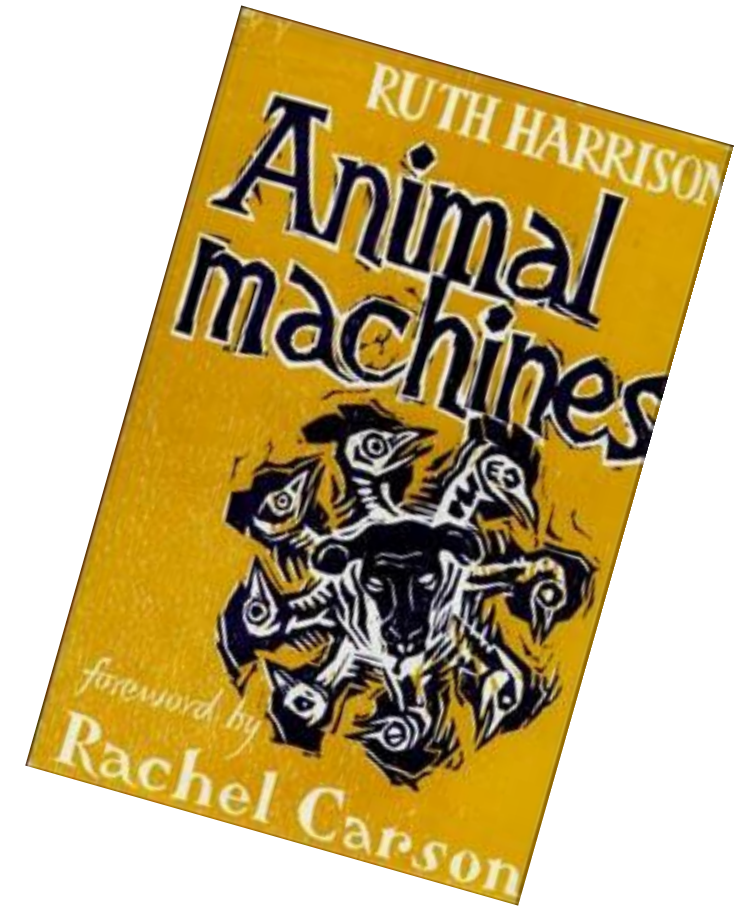


A brief history of animal welfare science

People have been dependent on animals for a long time - Taking care of them to the best of their knowledge



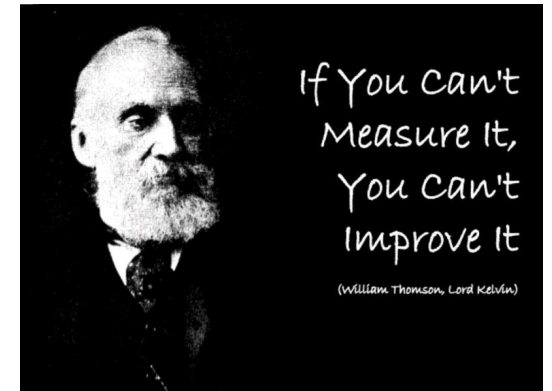
Animal welfare is not a term that came from science but arose out of society's concern about the way animals were treated



“Welfare is a wide term that embraces both physical and mental well-being of the animal. Any attempt to evaluate welfare, therefore, **must take into account the scientific evidence** concerning the feelings of animals that can be derived from their structure, functions and also from their behaviour.” (Brambell report, 1965)

Assessing animal welfare became central

The first publication to include the term "assessment" appears to be an appendix to the Brambell report (1965) called "*The assessment of pain and distress in animals*".

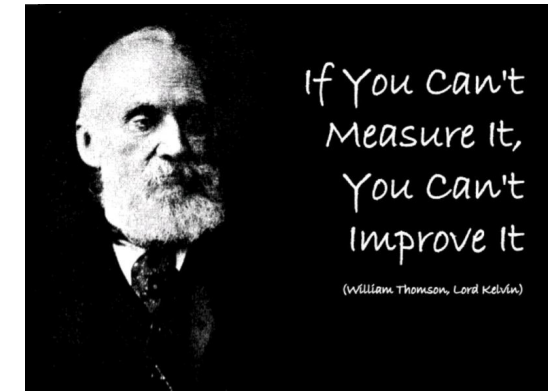


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Experimental studies to quantify motivation



Continued animal welfare concern

Trust
(country of origin)

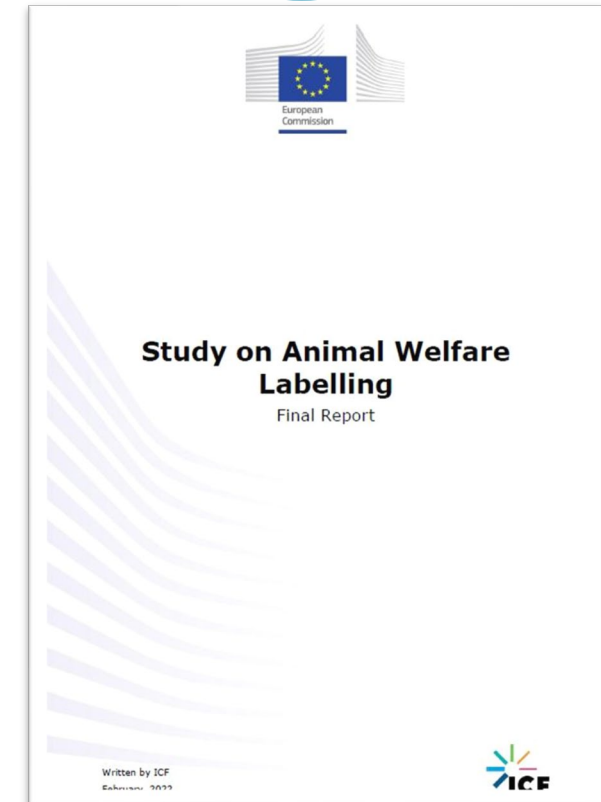


Business
opportunities

Report on The Business Benchmark on
Farm Animal Welfare 2024 Consultation
August 2024



Labelling

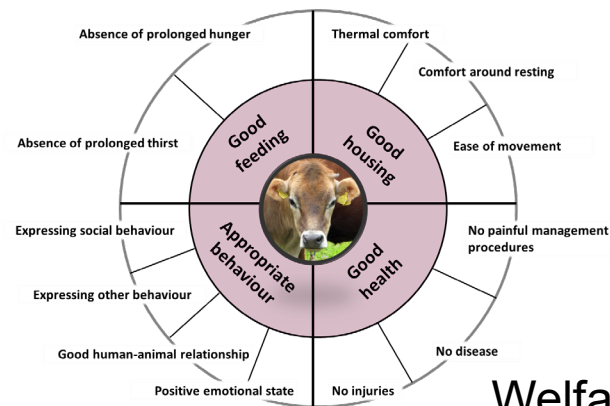


**Coordinated research efforts to identify
valid, reliable and feasible indicators
(animal-based – outcome measures)**

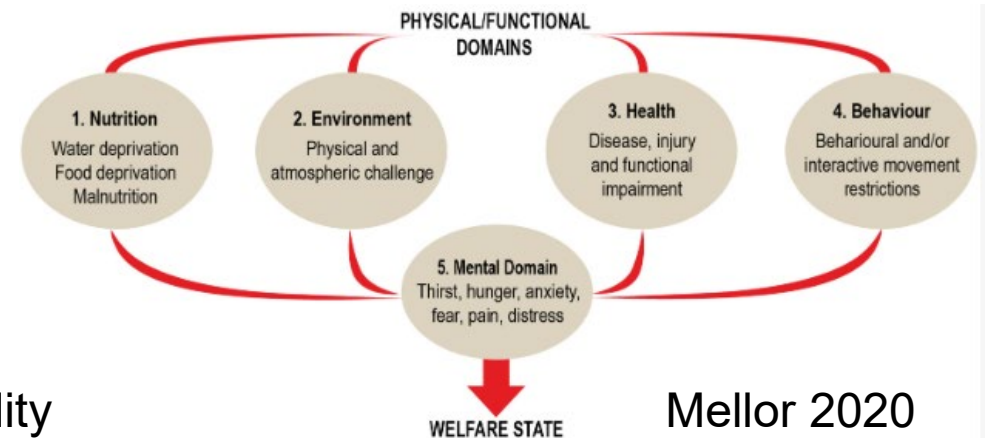
Coordinated research efforts to identify valid, reliable and feasible indicators (animal-based – outcome measures)



...and to cover the different dimensions or domains of animal welfare

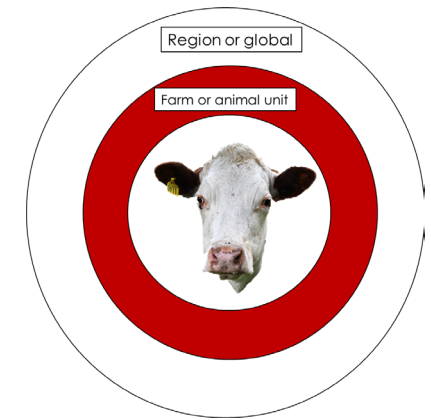


Welfare Quality



Mellor 2020

Indicators can link animal welfare to sustainability



High production; risk of production diseases, fewer lactations per cow, need for replacements heifers.

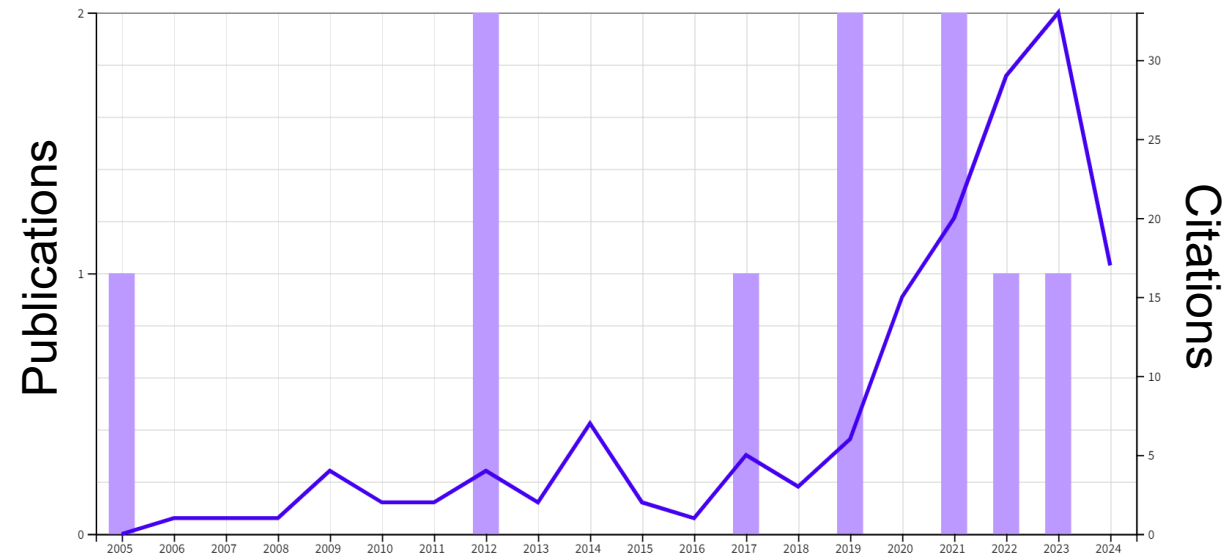


Stress; immunosuppression, increased use of antimicrobials, and development of resistance.



Poor welfare; less effective use of resources (energy, nutrients) so more resources need to be provided.

Animal Welfare and Sustainable Development



Web of Science publications with (Animal Welfare)
and (Sustainable Development) the title

© 2019 Universities Federation for Animal Welfare
The Old School, Brewhouse Hill, Wheathampstead,
Hertfordshire AL4 8AN, UK
www.ufaw.org.uk

Animal Welfare 2019, 28: 465-485
ISSN 0962-7286
doi: 10.7120/09627286.28.4.465

A bibliometric analysis of past and emergent trends in animal welfare science

R Freire^{†} and CJ Nicol[‡]*

Their analysis of key words show a recent broadening of animal welfare findings to include conservation and sustainability

Agenda 2030



In 2015, 193 countries imagined a future (2030) that would be rid of poverty and hunger, and safe from the worst effects of climate change and loss of biodiversity. 17 goals, 169 targets.

A common framework

17 goals, 169 targets.



A common framework

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

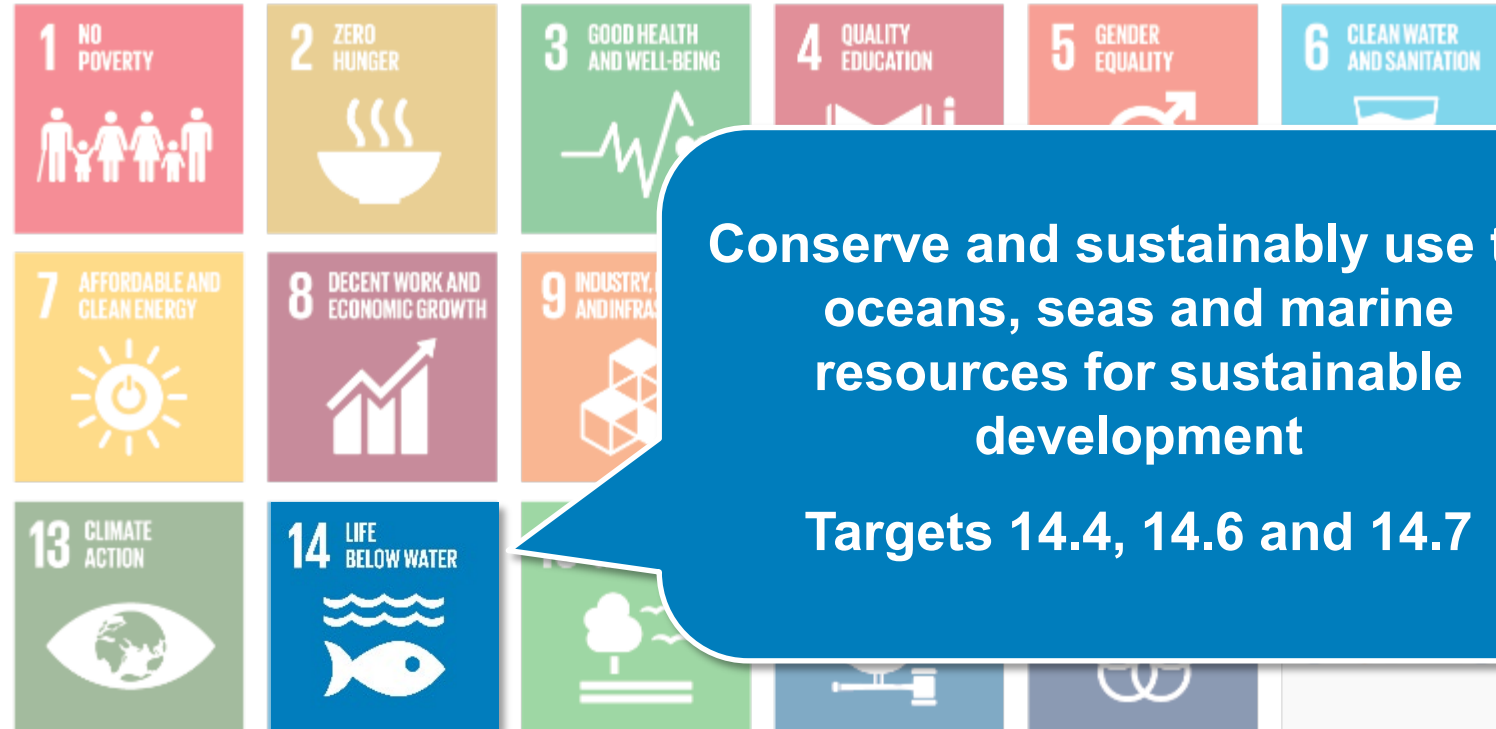
Ensure sustainable consumption and production patterns



Animals are not mentioned in these two goals

A common framework

17 goals, 169 targets.



Fish are mentioned here, mainly in relation to sustainable management or overfishing

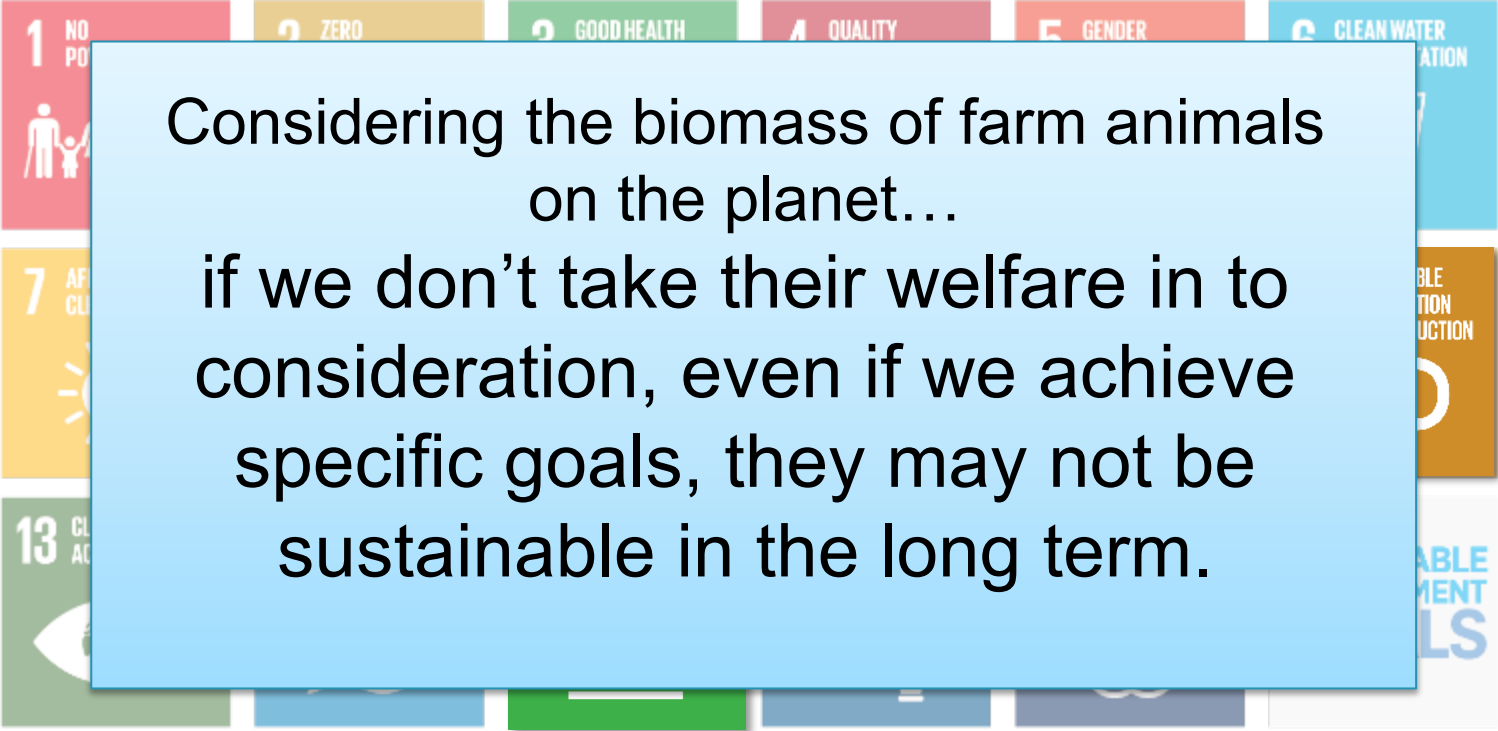
A common framework

17 goals, 169 targets.



Animals are mentioned here, mainly in relation to maintaining genetic resources and productivity

A common framework

The background of the slide features a grid of colorful squares, each representing a Sustainable Development Goal (SDG). Visible icons include: 1. No Poverty (red square with a person icon), 2. Zero Hunger (yellow square with a fork and knife icon), 3. Good Health and Well-being (green square with a heart icon), 4. Quality Education (pink square with a graduation cap icon), 5. Gender Equality (orange square with a person icon), 6. Clean Water and Sanitation (light blue square with a water drop icon), 7. Affordable and Clean Energy (yellow square with a sun icon), 8. Decent Work and Economic Growth (orange square with a person icon), 9. Industry, Innovation and Infrastructure (blue square with a gear icon), 10. Reduced Inequalities (blue square with a person icon), 11. Sustainable Cities and Communities (blue square with a city skyline icon), 12. Responsible Consumption and Production (blue square with a recycling symbol icon), 13. Climate Action (green square with a leaf icon), 14. Life Below Water (blue square with a fish icon), 15. Life on Land (green square with a tree icon), 16. Peace, Justice and Strong Institutions (blue square with a scale icon), 17. Partnerships for the Goals (blue square with a handshake icon).

Considering the biomass of farm animals
on the planet...
if we don't take their welfare in to
consideration, even if we achieve
specific goals, they may not be
sustainable in the long term.

Awareness is increasing

In 2022 the UNEA adopted a resolution on the animal welfare-environment-sustainable development nexus



‘Strong governance should safeguard the well-being of both wildlife and domesticated animals with rules on animal welfare embedded in transnational trade’

The One Health Triad

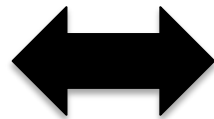


Developing a method to guide research and activities at the animal welfare - sustainable development interface

Animal Welfare

Animal welfare means the physical and mental state of an animal in relation to the conditions in which it lives and dies

(WOAH)



Sustainable Development



Animal Welfare and the United Nations Sustainable Development Goals

Linda Keeling^{1*}, Håkan Tunón², Gabriela Olmos Antillón³, Charlotte Berg¹, Mike Jones², Leopoldo Stuardo⁴, Janice Swanson⁵, Anna Wallenbeck¹, Christoph Winckler⁶ and Harry Blokhuis¹



sustainability

2021, 13, 3328. <https://doi.org/10.3390/su13063328>

Animal Welfare and the United Nations' Sustainable Development Goals—Broadening Students' Perspectives

Gabriela Olmos Antillón^{1,*} , Håkan Tunón² , Daiana de Oliveira³, Michael Jones² , Anna Wallenbeck³ , Janice Swanson⁴, Harry Blokhuis³  and Linda Keeling³ 

A global study to identify a potential basis for policy options when integrating animal welfare into the UN Sustainable Development Goals

Linda J. Keeling^{1*}, Elizabeth A. Marier², Gabriela Olmos Antillón³, Harry J. Blokhuis¹, Birgitta Staaf Larsson⁴ and Leopoldo Stuardo²

TYPE Original Research

PUBLISHED 29 August 2022

DOI 10.3389/fanim.2022.974687

THE BASIC IDEA...

Interaction	Name	Explanation
+3	Indivisible	Inextricably linked to the achievement of another goal
+2	Reinforcing	Aids the achievement of another goal
+1	Enabling	Creates conditions that further another goal
0	Consistent	No significant positive or negative interactions
-1	Constraining	Limits options on another goal
-2	Counteracting	Clashes with another goal
-3	Cancelling	Makes it impossible to reach another goal

Nilsson et al. (2016), Weitz et al. (2018)

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THE BASIC IDEA...

SDG1: End poverty in all its forms everywhere



Rate the impact of ending poverty on improving animal welfare



Rate impact of improving animal welfare on ending poverty



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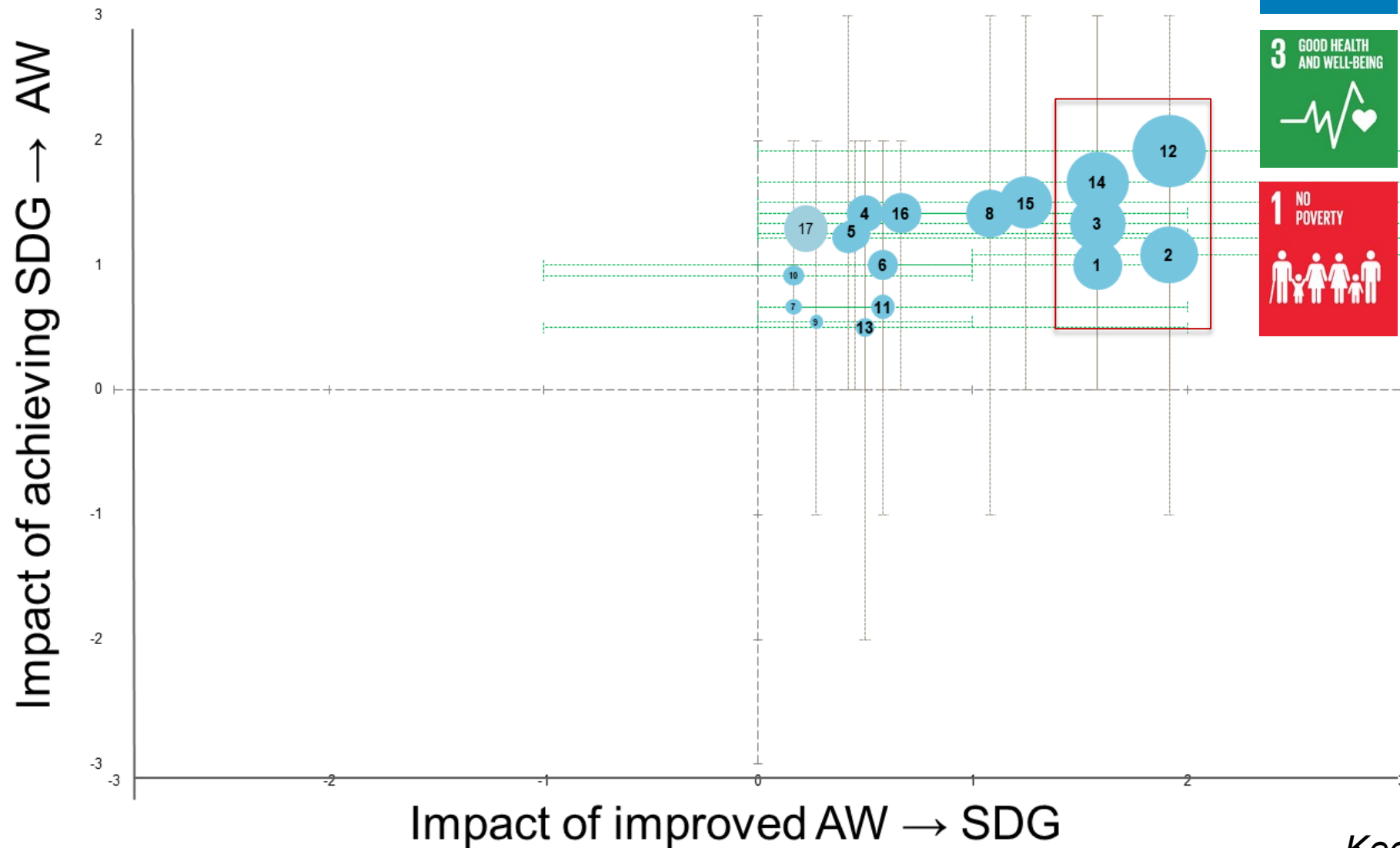
Repeat for each SDG



Asked participants to think big: all animal species, contexts and globally



On average we found large positive impacts (mean and range)



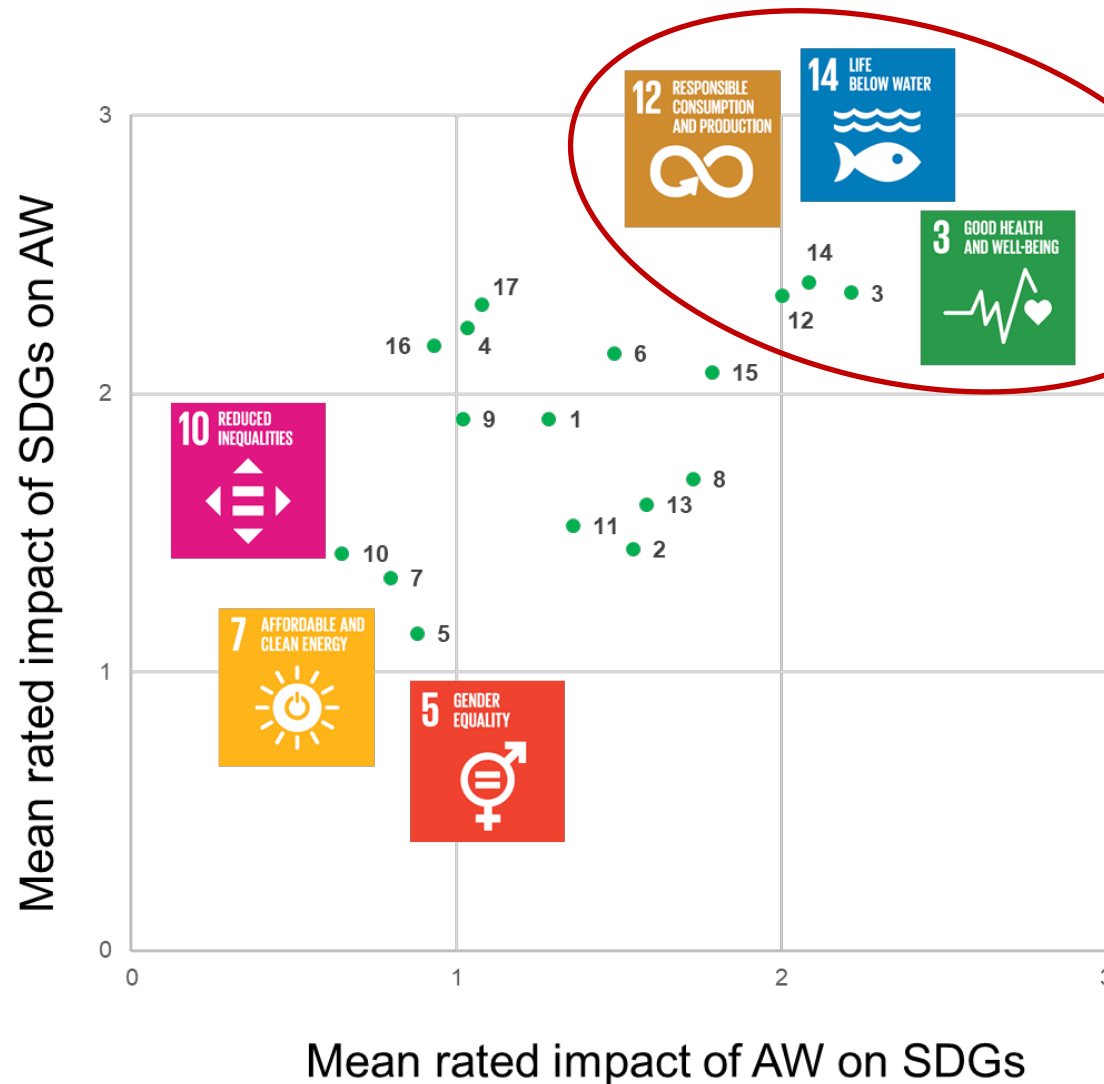
A '*map*' to identify potential synergies and conflicts and to identify potential allies

***People or organisations who don't work with animal
welfare as partners for animal scientists***

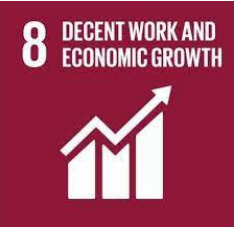




Zoonoses
Anthrozoology
One Health
One Welfare



Identify potential allies
working in areas
where there are the
strongest
co-benefits



Worker environment in slaughterhouses
Human-animal interactions
New markets, trade

Identify potential allies working in
areas where the
benefits are mutual

Co-benefits make collaboration
equally worthwhile for both
partners

AW om SDG 
SDG on AW 



Applying the method further...

Steps to develop and implement approach

- 1) Select specific context (limit the scope)
- 2) Involve a diverse range of people and competences
- 3) Iterative process of scoring and gathering evidence, decisions
- 4) Identify indicators to monitor progress



1) Define a specific context

Species

Country or region

Housing system or
specific type of management

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Species

Country or region

Housing system or
specific type of management

Examples

Antimicrobial Resistance (Nguyen-Thanh et al. 2024).

Working equids and aquaculture (student case studies)



2) A broad range of participants to score

Diverse competences, preferably all stakeholders categories.

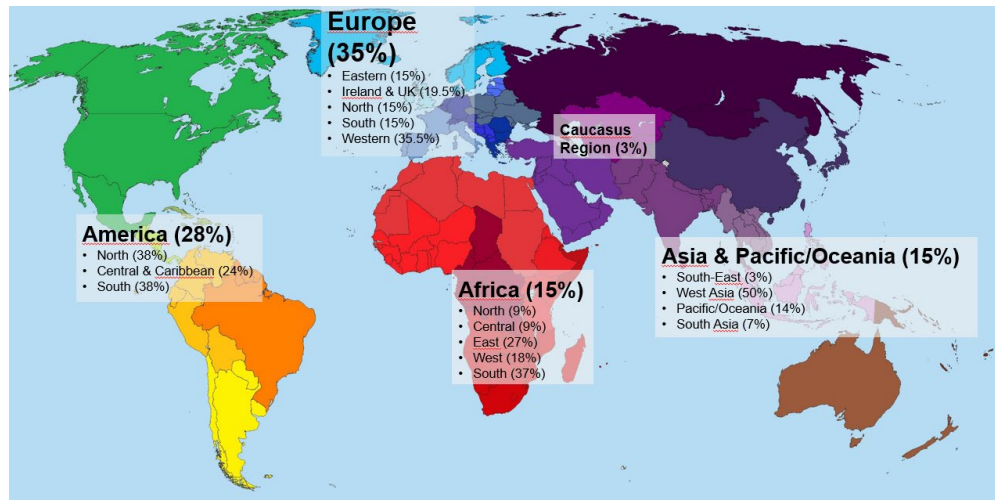
The diversity should be sufficient to raise all relevant issues (social, environmental, economic, and animal science)

2) A broad range of participants to score

Diverse competences, preferably all stakeholders categories.

The diversity should be sufficient to raise all relevant issues (social, environmental, economic, and animal science)

Consider country, gender and economic background



Keeling et al., 2022

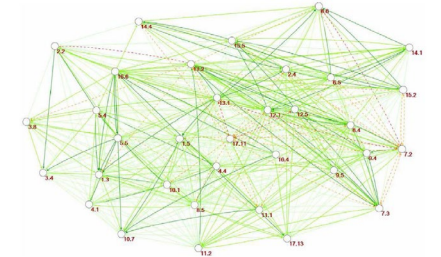
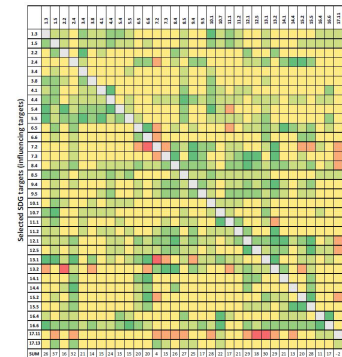


3) Scoring

Iterative process of scoring (-3 to +3).
Gathering evidence - refining the scoring
Produce the 'map' unique for that context
Strategic decisions on where to focus



Keeling et al. (2022)



Weitz et al. (2018)

4) Identify the indicators

Select indicators to monitor progress (animal welfare indicators and those relevant to the selected SDGs)

Conclusions

- How farm animals live their lives is affecting our lives. Animal welfare and sustainable development are linked.
- The lack of a systematic approach at this interface has led to a focus on conflicts (animal welfare as a problem rather than as part of the solution).
- There is a good toolbox of animal welfare indicators and these can be used in combination with other indicators (e.g. environmental and sustainability indicators).
- Animal scientists have an important role in identifying fruitful areas of research and ensuring valid and reliable monitoring of progress.

