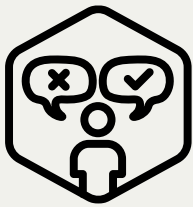




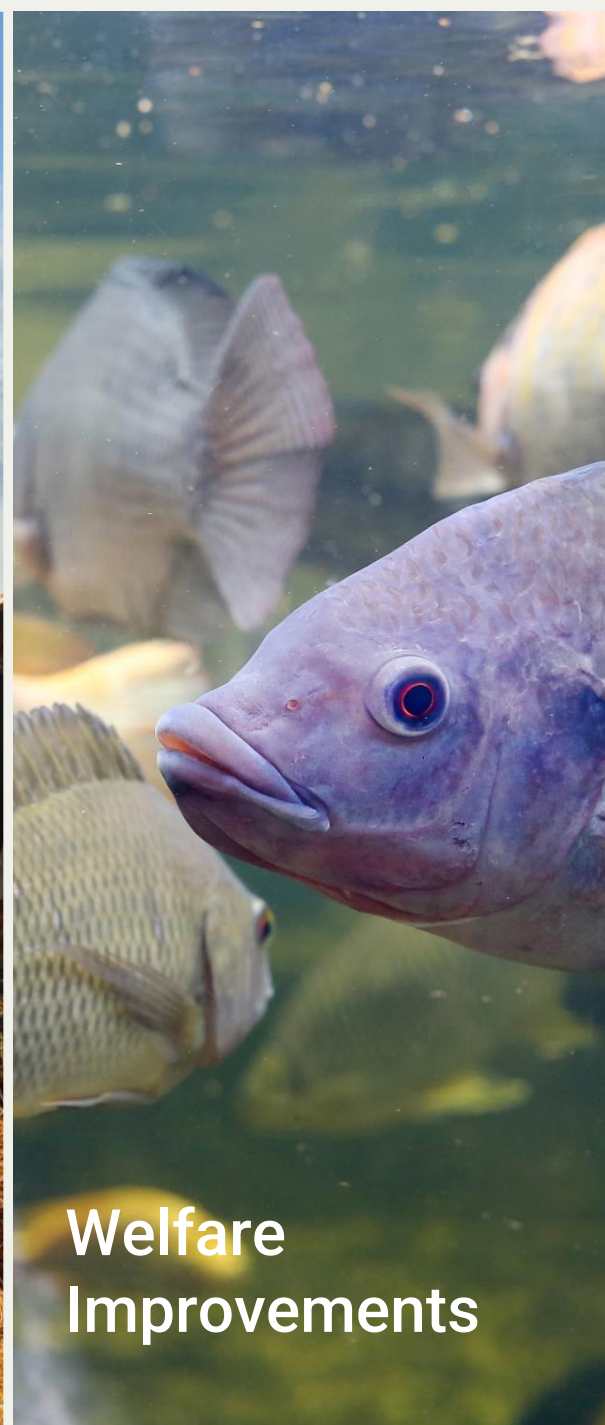
**The evolution of farm animal welfare:
Understanding and expectations of the supply
chain from retailers, investors, NGOs and
consumers**

We partner with farmers and corporations to create and deliver

FOOD ANIMAL SOLUTIONS



Regenerative
Agriculture



Welfare
Improvements

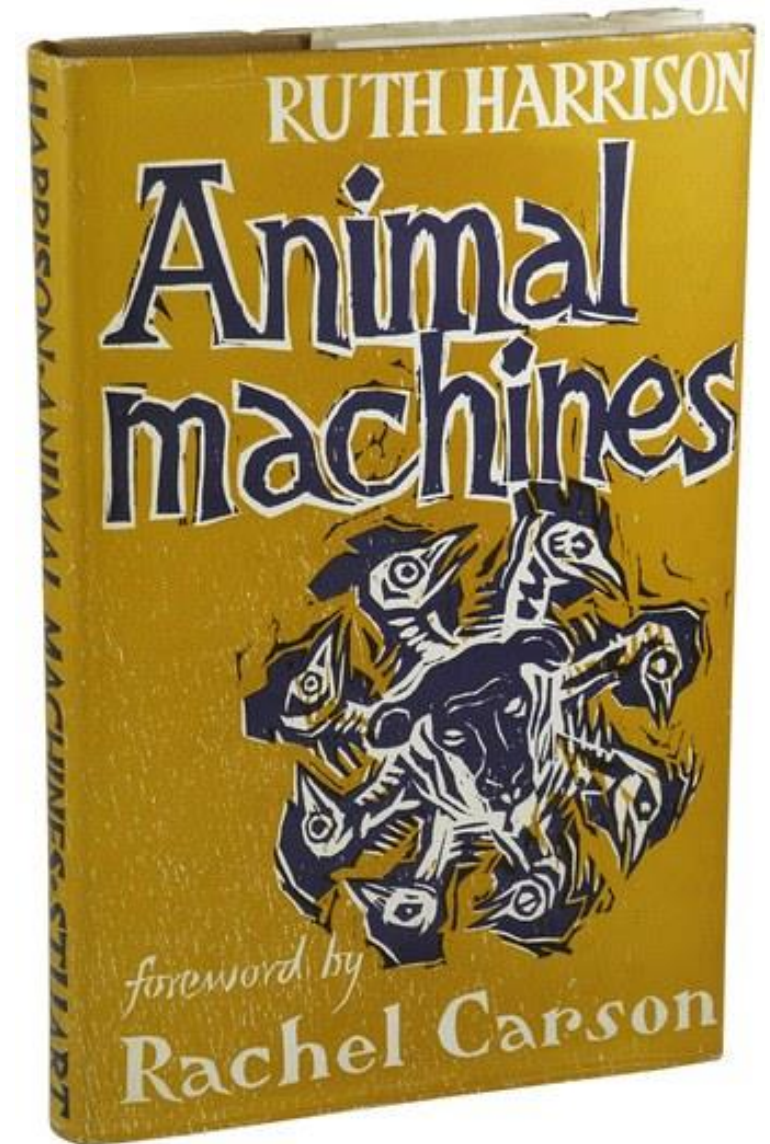


Impact &
Performance
Reporting



HISTORY OF ANIMAL WELFARE

- A few historical figures have put animal rights at the same level as human rights (Siddhartha Gautama, Pythagorus, Leonardo Da Vinci)
- 1823 - Bentham
- 1964 – Ruth Harrison’s book “Animal machines”
- 1965 – Brambell report – development of the 5 Freedoms
- Increase in Legislation protecting welfare of animals
- Last 35 years has led to improved understanding of motivation, cognition and complexity of social behavior in non-human animals





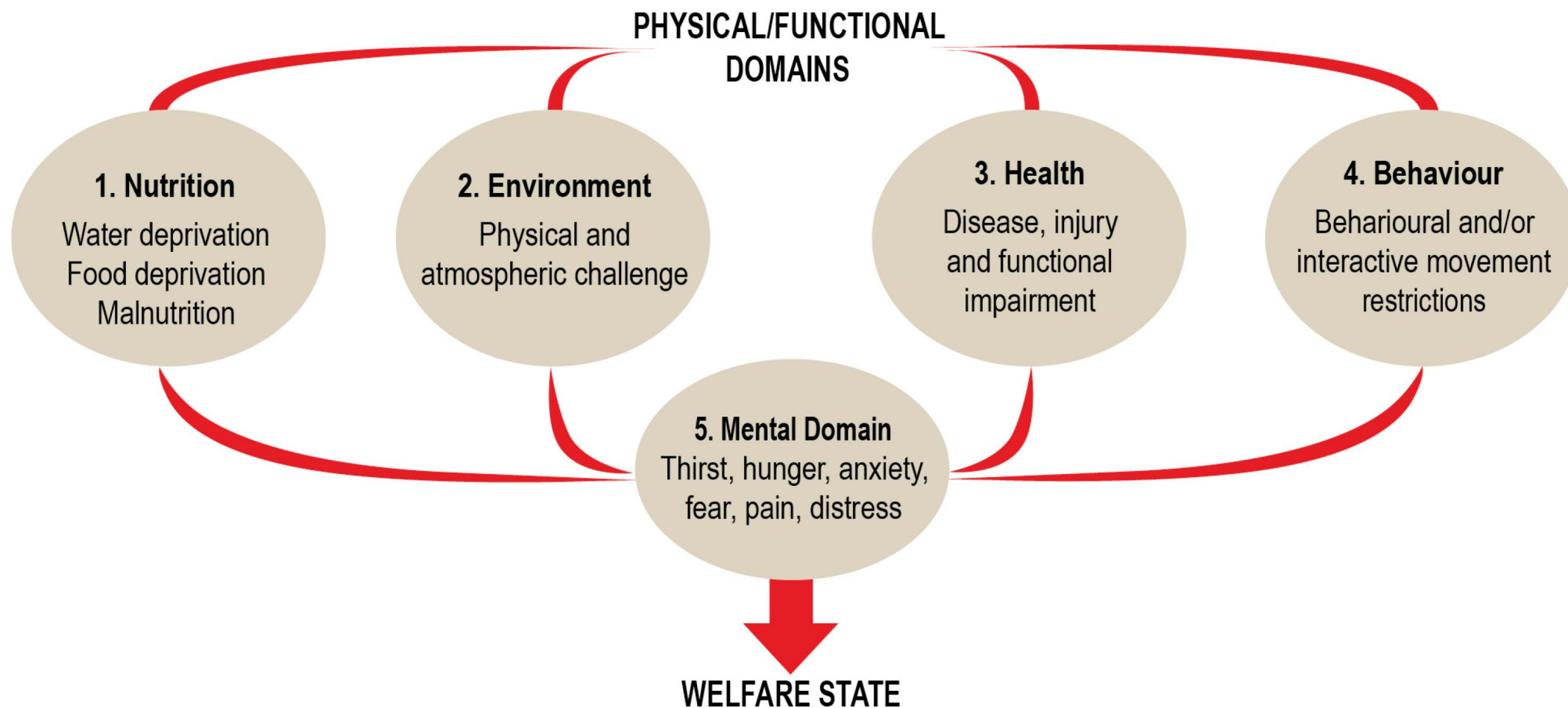
THE FIVE FREEDOMS

- Freedom from hunger or thirst
- Freedom from discomfort
- Freedom from pain, injury or disease
- Freedom to express (most) normal behavior
- Freedom from fear and distress



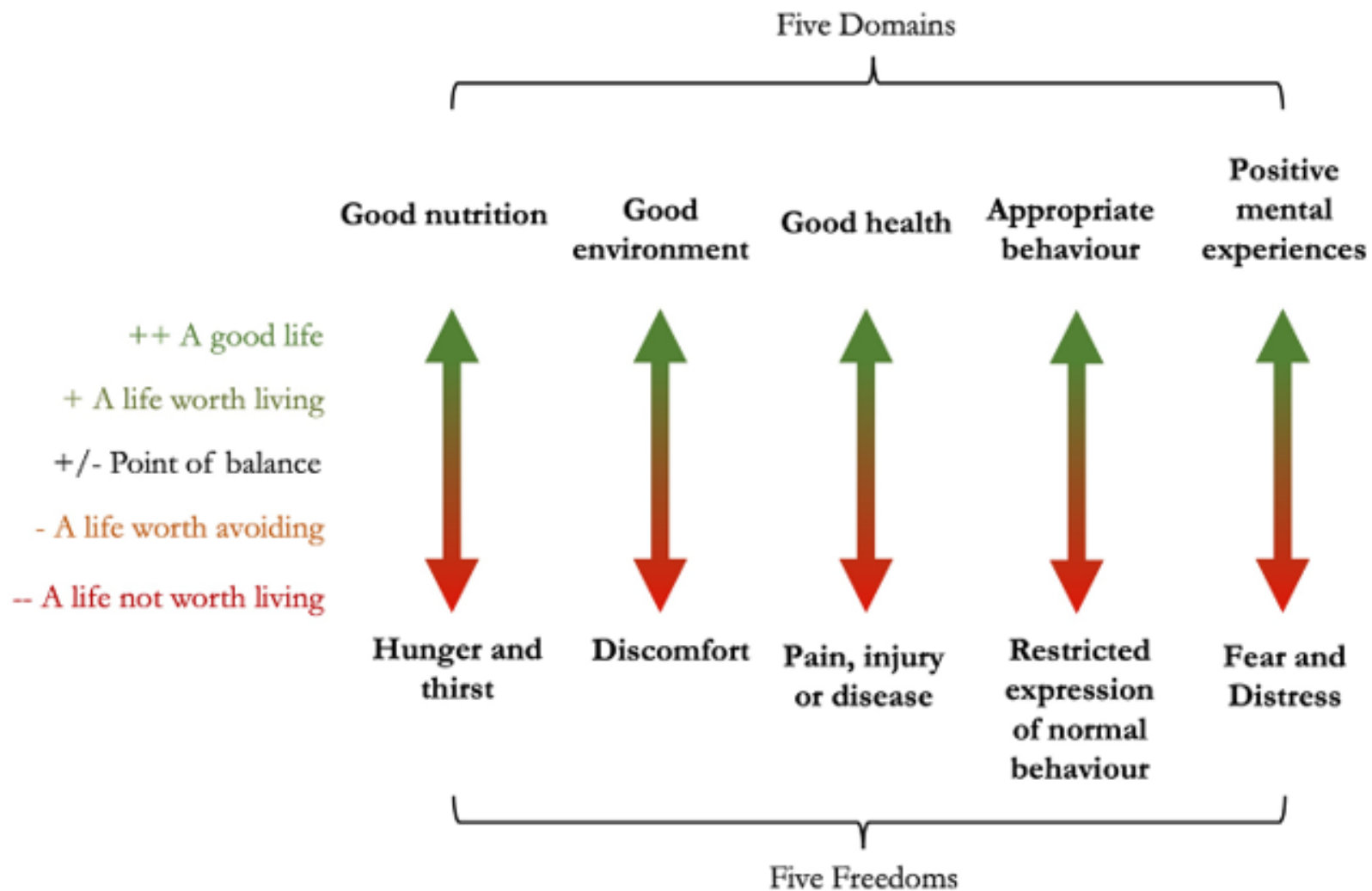


THE FIVE DOMAINS





FIVE FREEDOMS & FIVE DOMAINS





Who is the salmon?

The Atlantic salmon is migratory and can swim great distances in a short time.

Atlantic salmon have a lifespan of 5-13 years but in commercial production are slaughtered before they reach adulthood in most cases. Salmon are harvested at 3-6 kg.

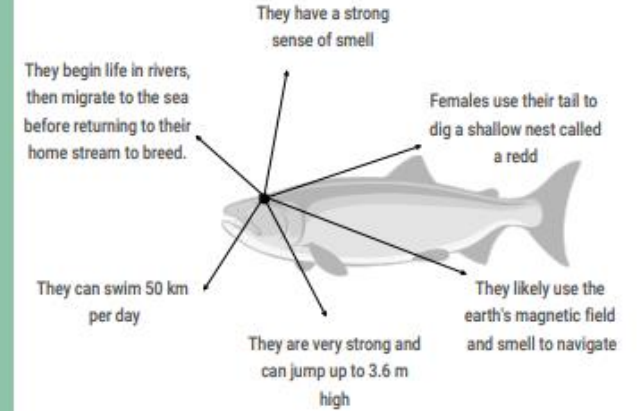


What does the salmon want?



What can salmon do?

Salmon are expert navigators



How do salmon spend their day?

Swimming



Resting

Hunting

Swimming

Salmon are migratory fish and swim great distances. Their preferred swimming depth depends on the environment such as temperature and currents

Hunting

Salmon are carnivorous and feed on insects and other invertebrates as juveniles. At sea, salmon hunt and eat small fish and crustaceans

Resting

Salmon tend to be nocturnal but can be diurnal based on temperature

Little is known about how salmon spend their time at sea including their social and resting behaviour

How can we provide salmon with a good quality life?

Provide meaningful environmental enrichment appropriate for each life stage



Prevent parasite infestations and disease

Give them a life that is free from pain and stress: no fin clipping

Give them enough space to swim, explore, and escape dominant fish



ANIMAL SENTIENCE

Sentience is the capacity to have positive or negative experiences such as pain, distress or pleasure.





ANIMAL SENTIENCE

- DEFRA commissioned the London School of Economics (LSE) to undertake an independent review of cephalopod and decapod sentience.
- Looked at evidence in 8 criteria including physiological and behavioural evidence
- Very strong evidence of sentience in octopuses and true crabs
- Somewhat less evidence concerning other cephalopods such as squid and cuttlefish & decapods such as anomuran crabs however the evidence is still substantial.





CERTIFICATION & WELFARE STANDARDS IN AQUACULTURE

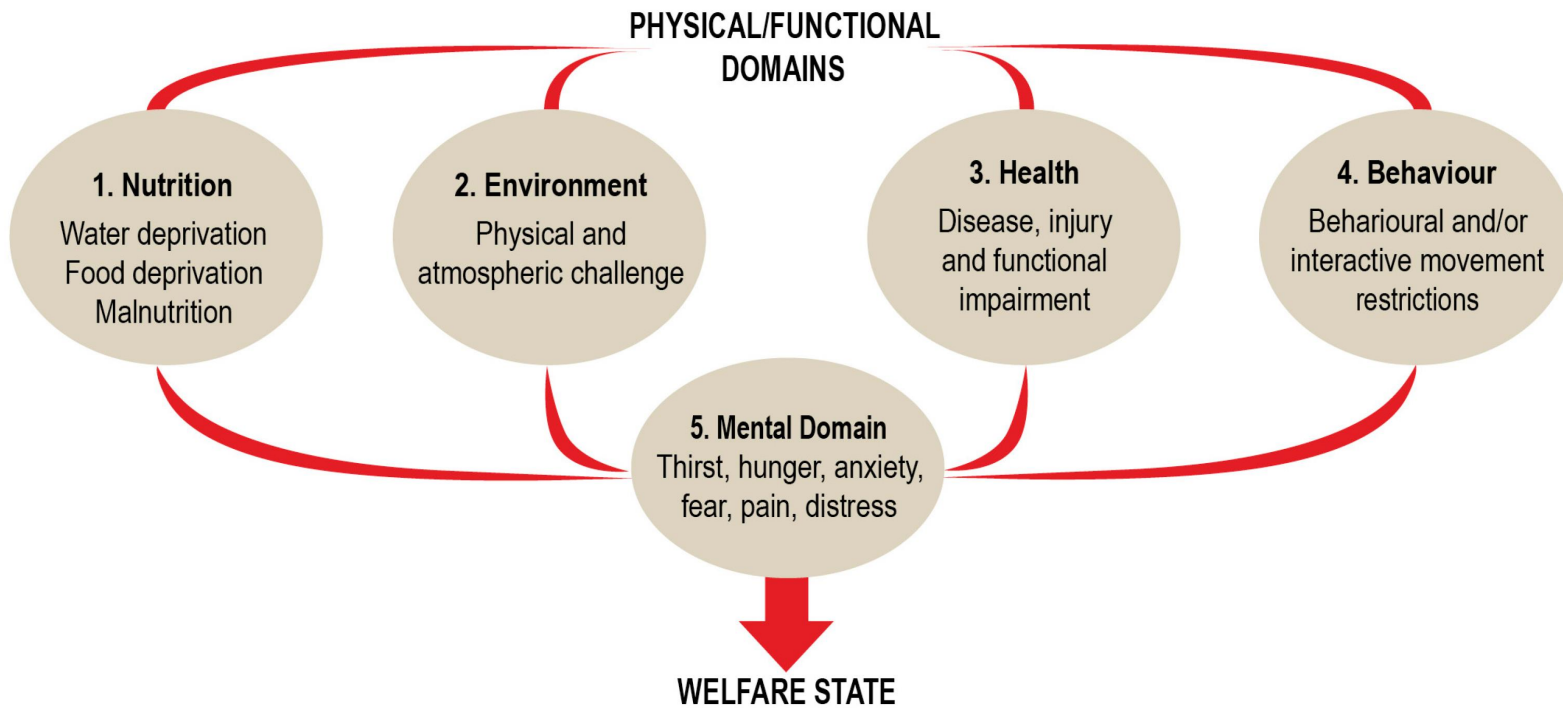
- Late development of welfare standards and certification in aquaculture compared to terrestrial farming.
- Certification have different level of welfare standards.
- Standards should be species specific and life stage specific.





HOW TO MEASURE WELFARE?

➔ **Measuring outcomes**





OUTCOMES MEASURES AND FISH

M&S
EST. 1884



% of fish with sea lice damage at harvest

% of fish with a skin condition at harvest

% of fish with eye damage/loss at harvest

% Mortality End of seawater production

Stocking density during peak production (kg/m³)

% of fish with ineffective first stun

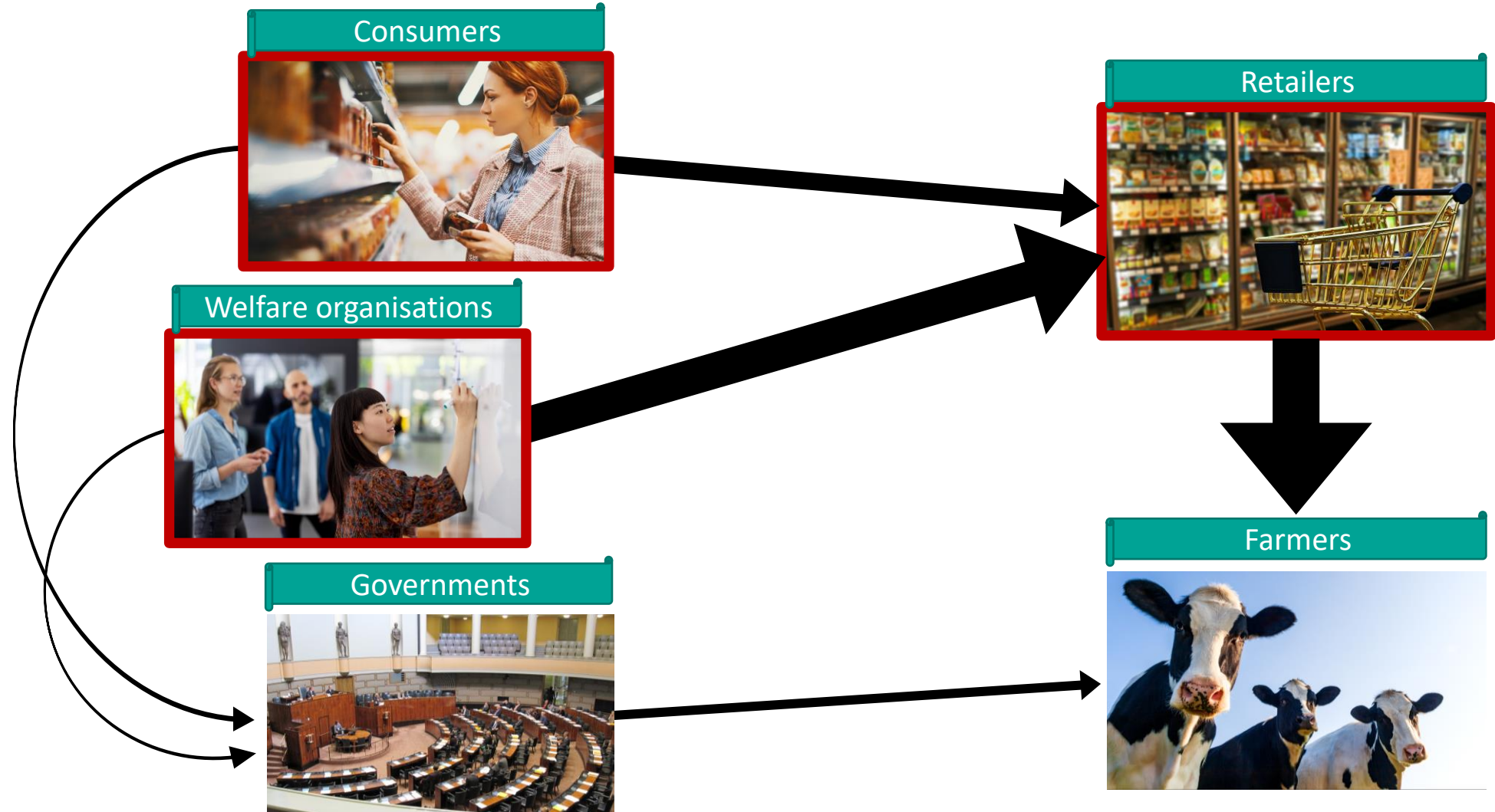
% of fish dead on arrival at killing station

No. of disturbances/crowds during production





INCREASING EXPECTATIONS AROUND TRANSPARENCY OF SUPPLY CHAINS





PUBLIC BENCHMARKING REPORTS

The Business Benchmark on Farm Animal Welfare Report 2021



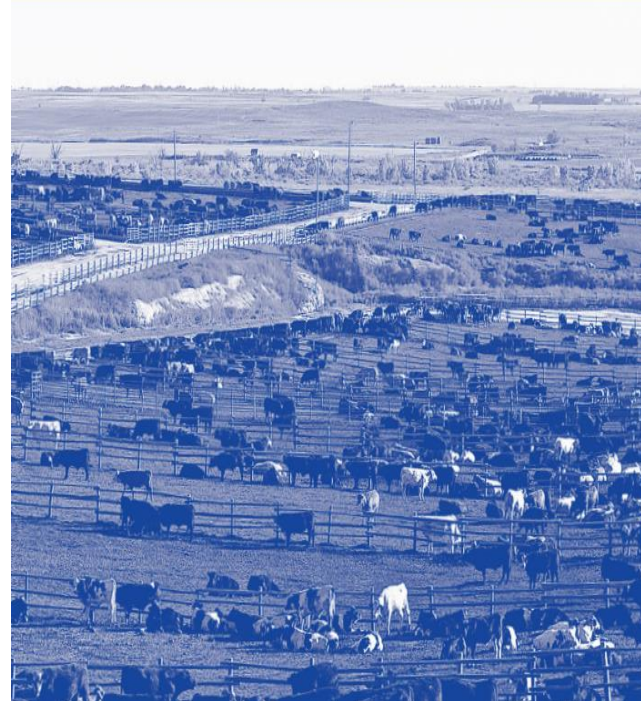
Nicky Amos, Dr Rory Sullivan,
Basia Romanowicz and Dr Heleen van de Weerd



FAIRR
A COLLER INITIATIVE

Coller FAIRR Protein Producer Index

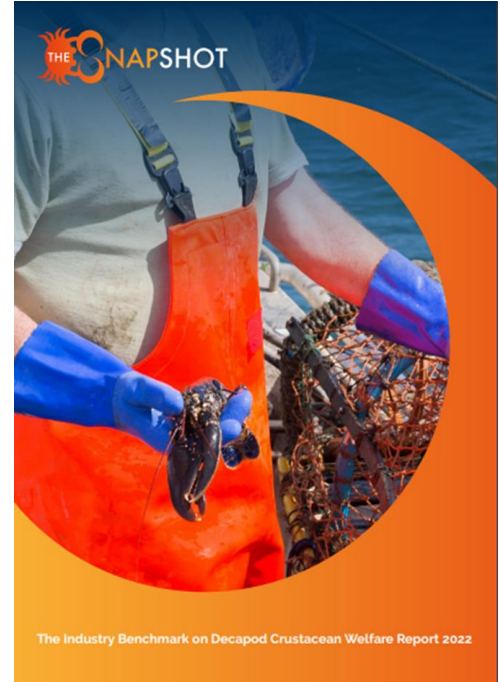
THE FOUR-YEAR TRENDS REPORT 2019-2022



The Pecking Order 2022



In association with  animal
EQUALITY  



THE **3**SNAPSHOT

The Industry Benchmark on Decapod Crustacean Welfare Report 2022

Sourcing Better Checked Out





BUSINESS BENCHMARK OF FARM ANIMAL WELFARE

- BBFAW aim: to enable investors, NGO's and other stakeholders to **understand corporate practice and performance on farm animal welfare**.
- **Annual assessments** are conducted on **publicly reported information** against the BBFAW assessment criteria.
- **A Benchmark is published annually** providing the companies rating and, since 2021, an Impact rating.

The Business Benchmark on Farm Animal Welfare Report 2021

Figure 1.1: Company Tier Rankings and Impact Rating (IR)





BBFAW: ISSUES TACKLED IN FISH FARMING

- Ending the use of **close confinement** (e.g. stocking density)
 - Provision of **enrichment** (e.g. providing shelter)
 - Ending **mutilations** (e.g. fin clipping)
 - Responsible use of **antibiotics**
 - Ending **long distance live transport**
 - Use of humane methods of **pre-slaughter stunning** (e.g. percussive and electric)
-
- Companies are expected to have:
 - **Public commitments**
 - **Public reporting** on progress at farm level (%)





CRUSTACEAN COMPASSION

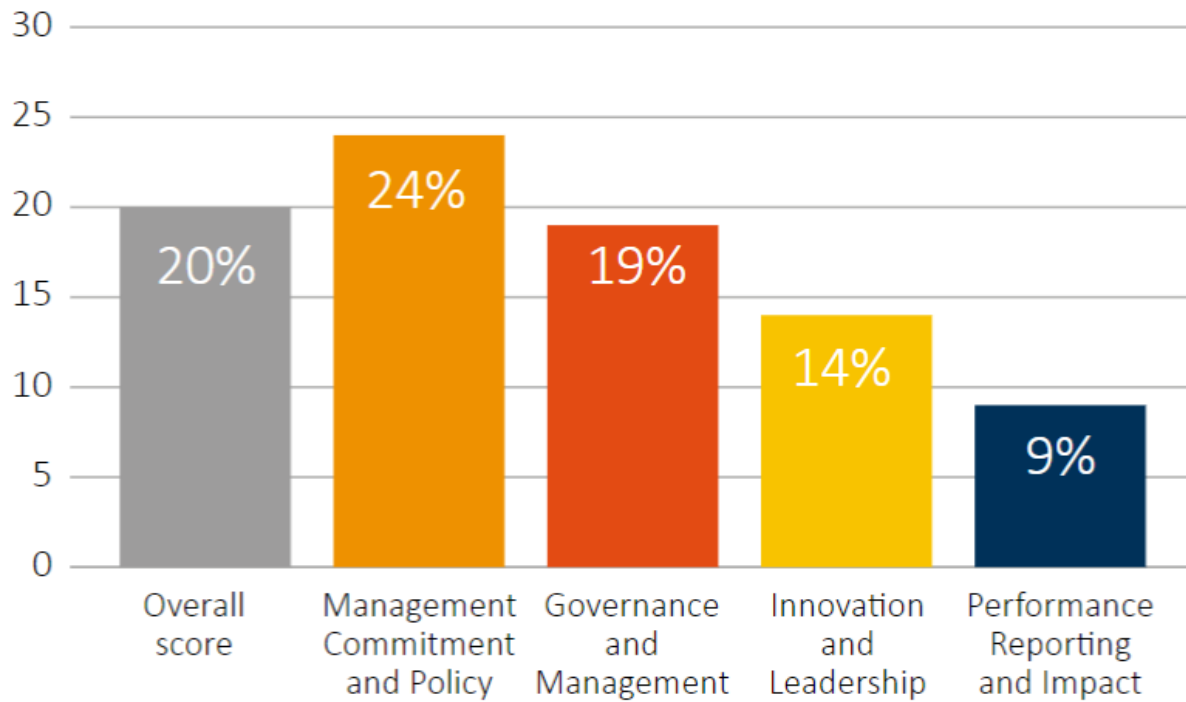
- UK's first industry benchmark of leading seafood producers, processors, and retailers
- Benchmarks 30 leading companies in the UK on their management practice and reporting on decapod welfare
- Welfare at the following stages of the supply chain:
 - Capture and handling
 - Holding and storage
 - Transport
 - Mutilations
 - Stunning, slaughter, and killing





CRUSTACEAN COMPASSION RESULTS

Figure 1: Overall average score (%)





CRUSTACEAN COMPASSION RESULTS

Key Findings

1

Decapod crustacean welfare is advancing up the business agenda, but many companies have yet to implement formal management processes.

2

Companies are prioritizing the welfare of farmed decapod crustaceans over that of wild caught decapods.

3

Companies are investing in research and development aimed at improving decapod crustacean welfare.

4

Companies are beginning to report on their performance on decapod crustacean welfare.

5

Companies are not yet communicating to consumers on decapod crustacean welfare.





CONCLUSION

- The five domains approach used to assess welfare in aquaculture
- Outcome measure is an easy way to assess welfare but can lack details to set up improvement plan
- Welfare organisation that report public information on welfare are very efficient in triggering changes





REFERENCES

- Mellor (2016) Life worth living & five domains: <https://www.mdpi.com/2076-2615/6/3/21>
- Who is the salmon: <https://www.compassioninfoodbusiness.com/media/7440680/who-is-the-salmon.pdf>
- Business Benchmark on Farm Animal Welfare: <https://www.bbfaw.com/>
- Report crustacean compassion <https://www.crustaceancompassion.org/the-snapshot-report-2022>

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