

PROMOTING

AQUATIC ANIMAL WELFARE

A VITAL PERSPECTIVE FOR AFRICA

7th Africa Animal Welfare Conference – 2023

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ESR Ethical Seafood
Research

OUTLINE

- Why should we care about the welfare of aquatic animals?
- The scale of the problem
- Challenges faced by aquatic animals
- Ways to measure their welfare
- What we are doing in Africa



WHY SHOULD WE CARE ABOUT THE WELFARE OF AQUATIC ANIMALS?

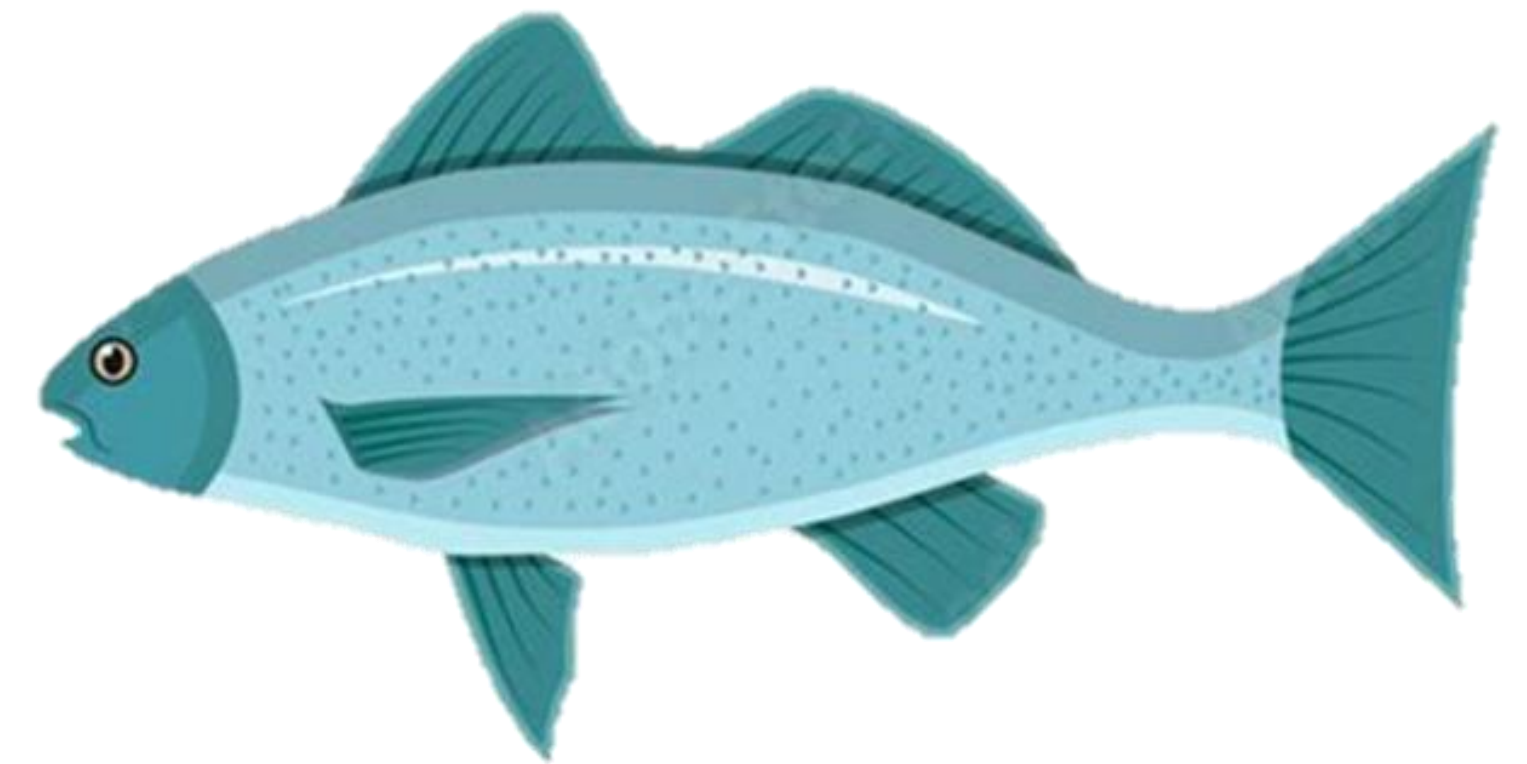
- Biodiversity and ecosystem health
 - Environmental balance
 - Economic importance
 - Global interconnectedness
- & many more



FISH ARE COMPLEX

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- Fish are capable of learning complex tasks
- Fish have long memories
- Fish have social relationships
- Many fish enjoy having contact with other fish
- Many fish recognise other known individuals by sight
- Fish can be fooled by the same optical illusions as humans



COMPLEX INDIVIDUALS



Atlantic salmon

Migrates hundreds of km at before returning to its home river.



Tilapia

Makes nests in mud, scents the surrounding water, and defends from invaders.



Herring

When shoaling, maintain exactly the right spacing to catch escaping prey.



Pufferfish

A tiny pufferfish makes and decorates elaborate patterns to attract a mate.

FISH FEEL PAIN

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Pain Criteria for animals

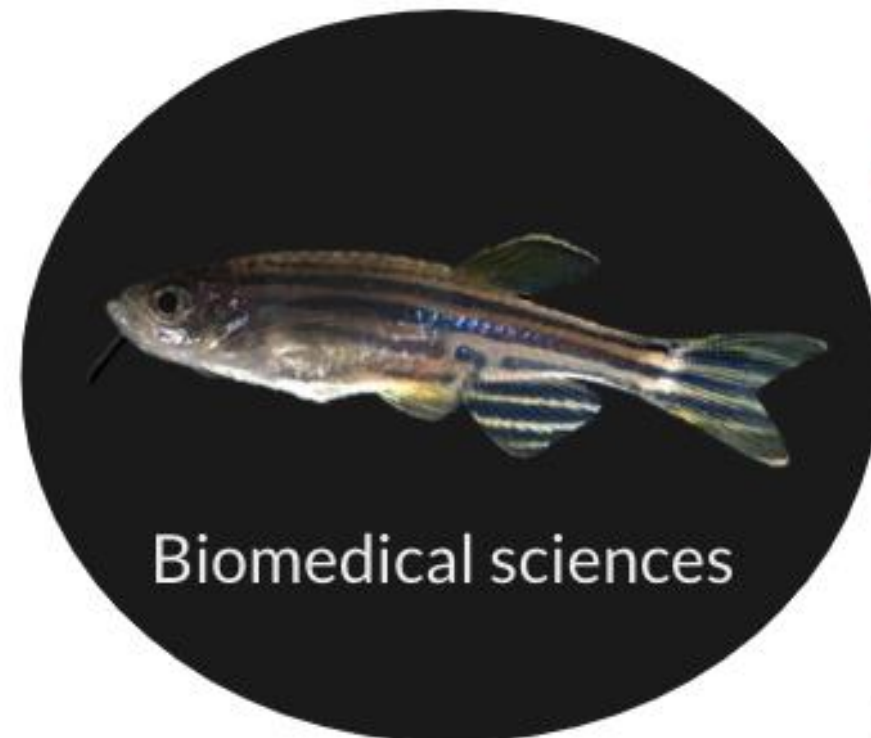
Criteria	Mammals	Birds	Reptiles / Amphibians	Fish	Cephalopods	Decapods	Insects
Nociceptors, CNS pathways & processing	Green	Green	Green	Green	Green	Green	Green
Analgesic receptors	Green	Green	Green	Green	Green	Green	Light Blue
Physiological responses	Green	Green	Green	Green	Green	Green	Light Blue
Learned avoidance	Green	Green	Green	Green	Green	Green	Green
Change in behaviour	Green	Green	Green	Green	Green	Green	Green
Protective behaviour	Green	Green	Green	Green	Green	Green	Light Blue
Drugs reduce response	Green	Green	Green	Green	Green	Green	Green
Self-admin of drugs	Green	Green	Light Blue	Green	Light Blue	Light Blue	Light Blue
Pain takes priority	Green	Light Blue	Light Blue	Green	Green	Green	Light Blue
Change in behavioural preferences/choices	Green	Green	Light Blue	Green	Green	Green	Green
Pay cost to avoid pain	Green	Green	Light Blue	Green	Light Blue	Green	Light Blue
Trade off pain with other requirements	Green	Green	Light Blue	Green	Light Blue	Green	Light Blue

Adapted from Walters 2018

USES

OF AQUATIC ANIMALS

AQUATIC ANIMALS ARE USED IN MANY WAYS

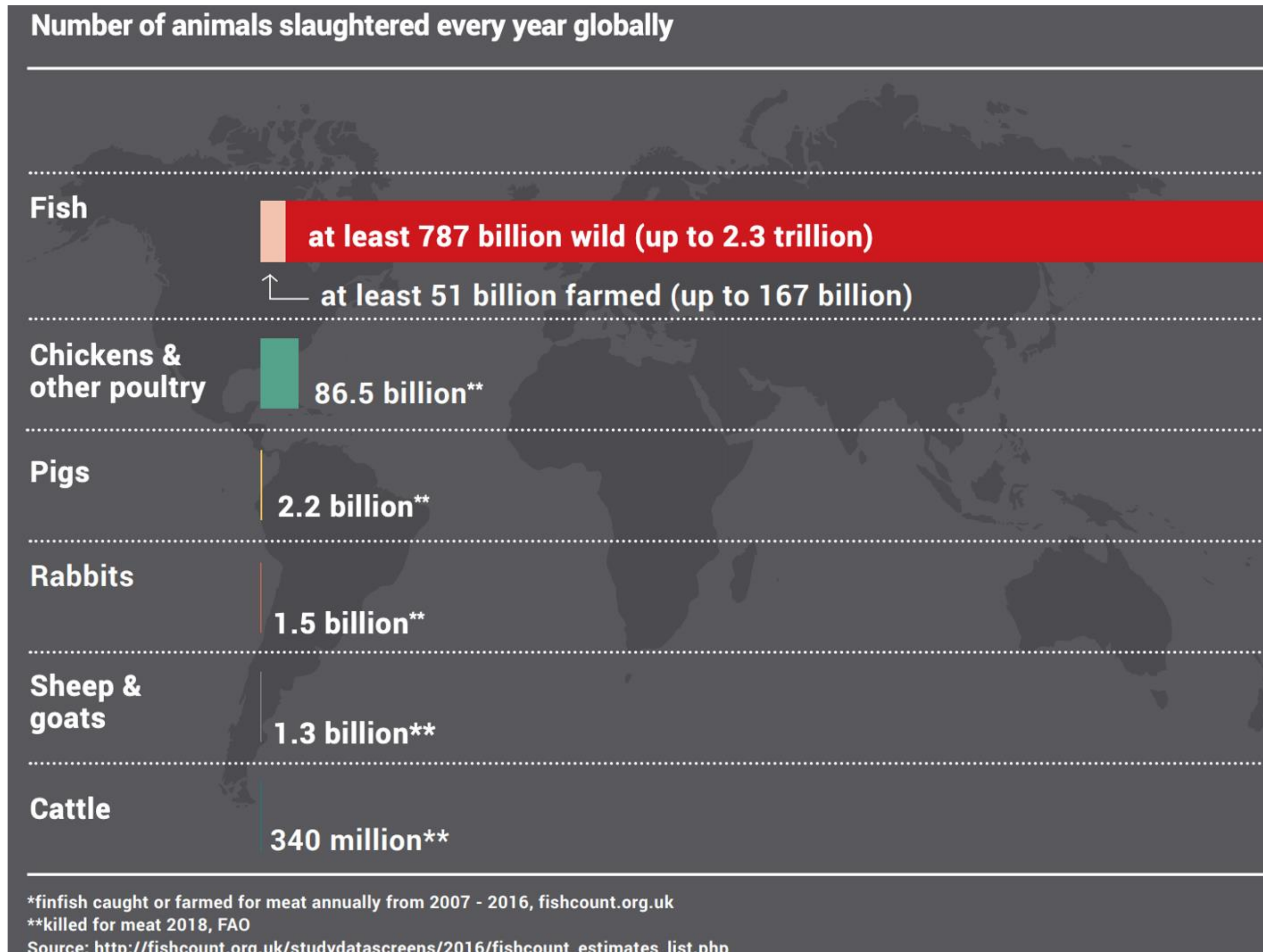


SCALE

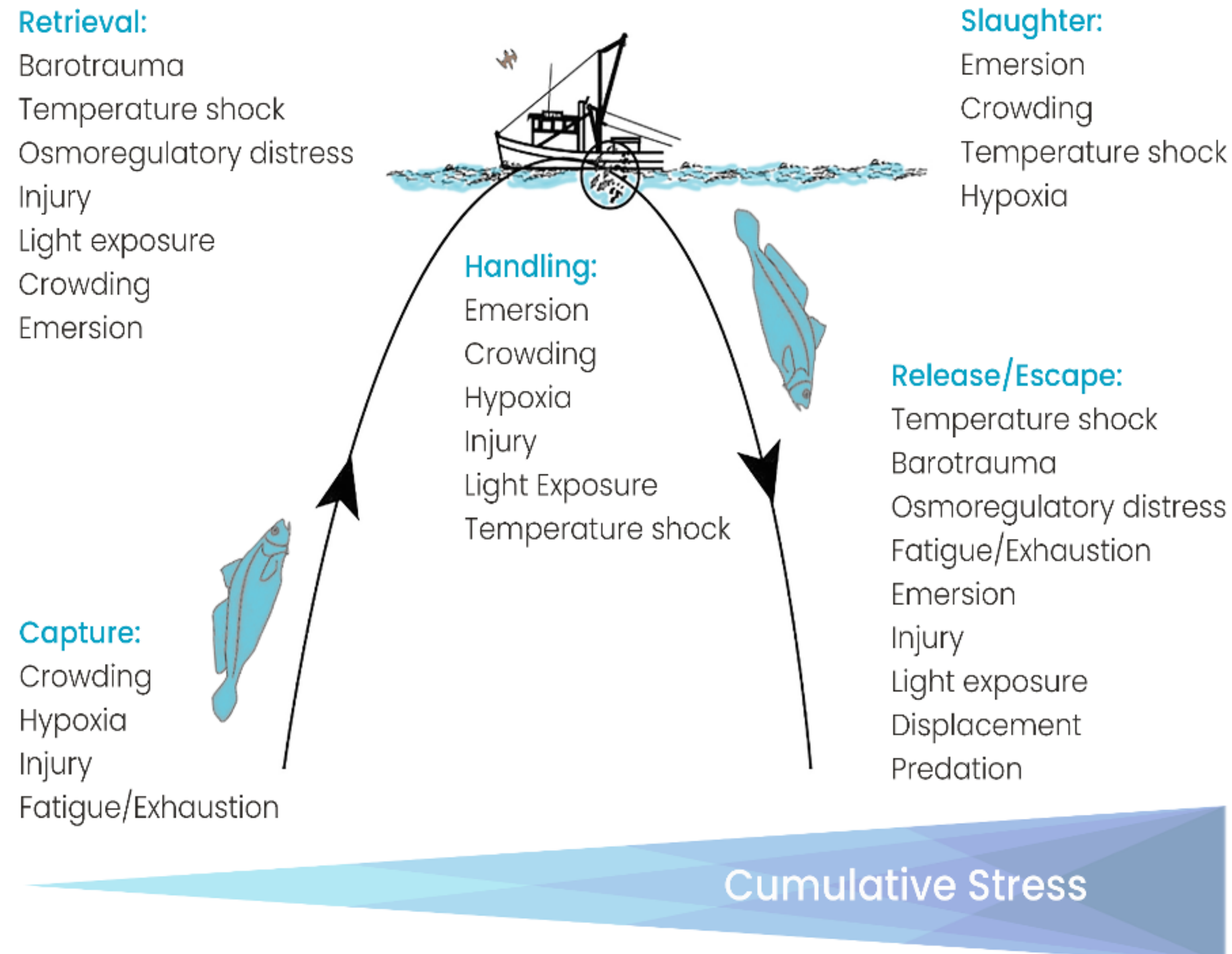
OF THE PROBLEM



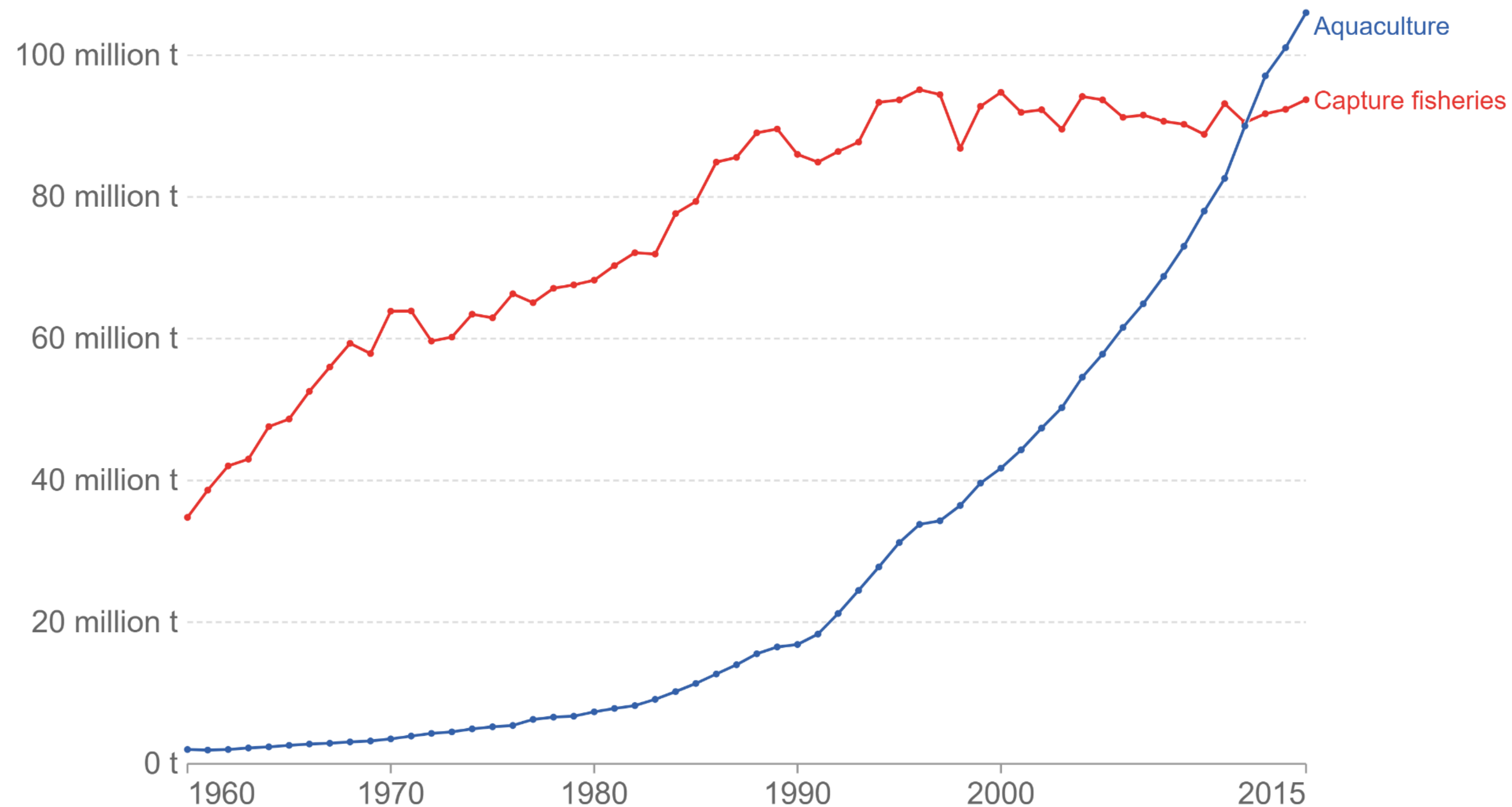
SCALE OF THE PROBLEM



WELFARE ISSUES IN CAPTURE FISHERIES



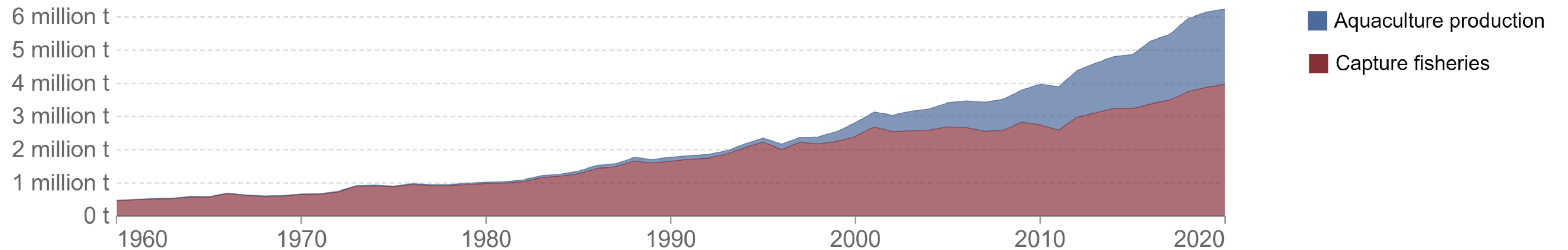
SEAFOOD PRODUCTION: WILD FISH CATCH VS. AQUACULTURE – WORLD



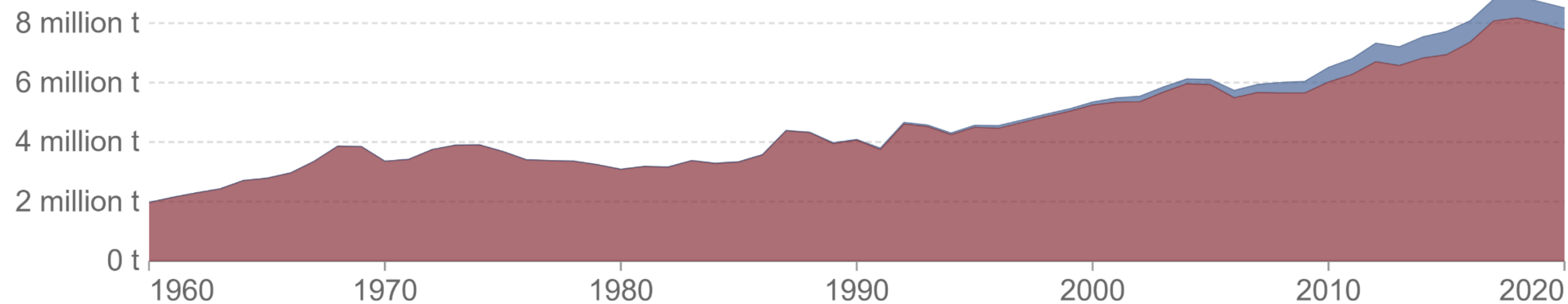
Source: Food and Agriculture Organization of the United Nations (via World Bank)
OurWorldInData.org/fish-and-overfishing • CC BY

WILD FISH CATCH VS. AQUACULTURE – AFRICA

Middle East and North Africa (WB)



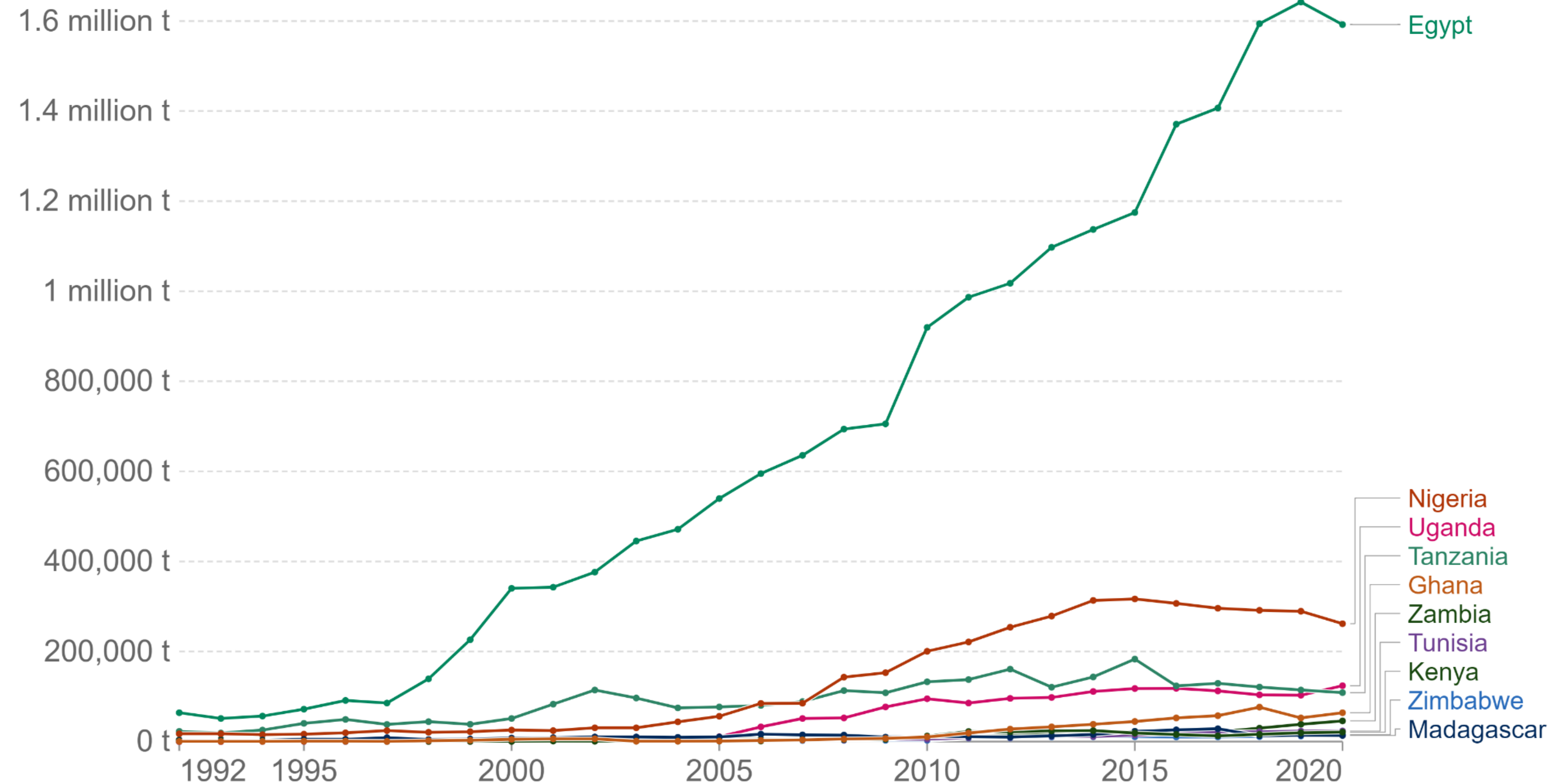
Sub-Saharan Africa (WB)



Source: Food and Agriculture Organization of the United Nations

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AQUACULTURE GROWTH IN AFRICA

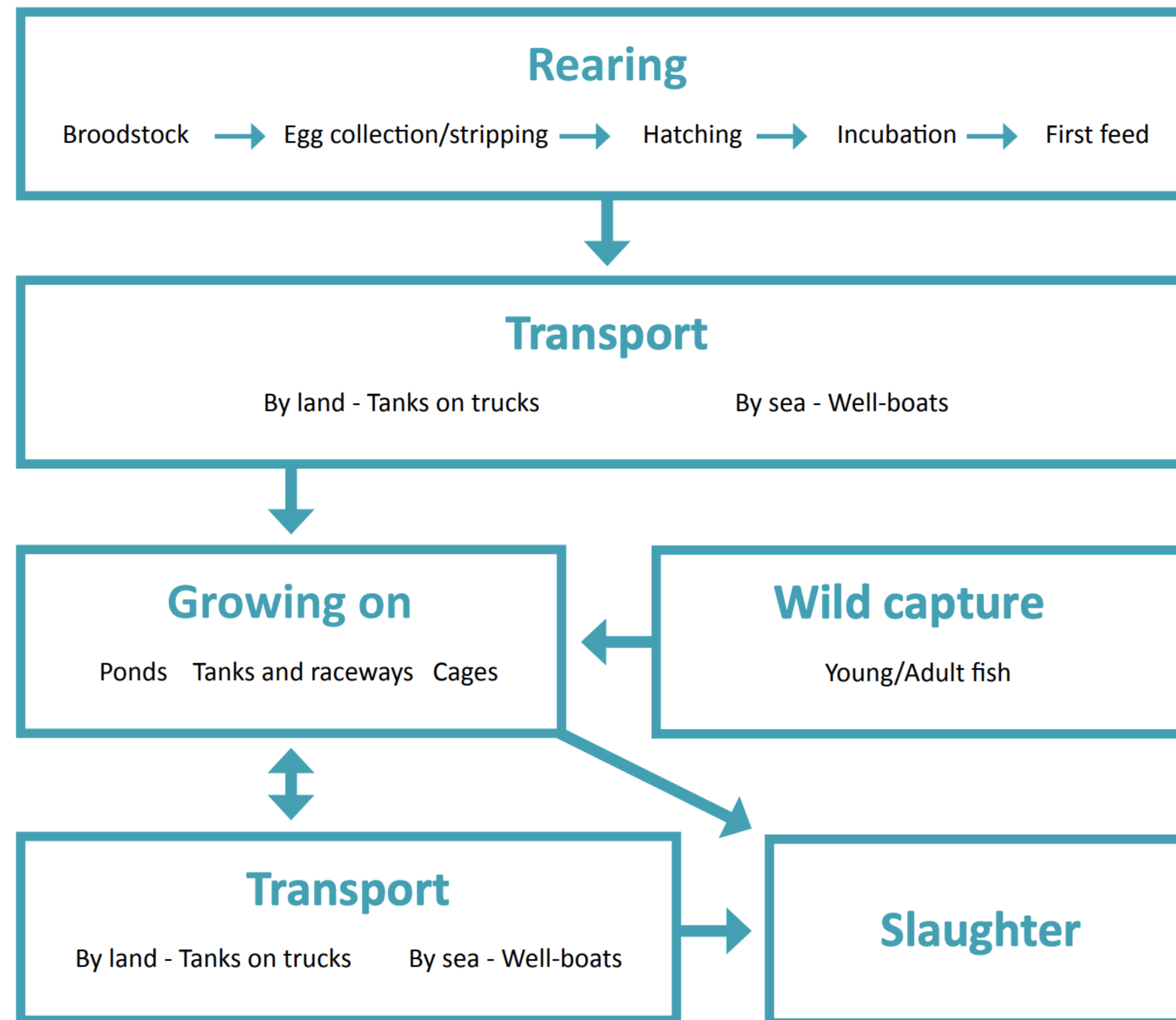


Source: Food and Agriculture Organization of the United Nations (via World Bank)
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CHALLENGES

FACED BY AQUATIC ANIMALS

THE AQUACULTURE JOURNEY OF A FISH



DIVERSITY

OF ANIMALS

DIVERSITY IN SPECIES



Adapted from FishEthoGroup 2021

DIVERSITY IN FARMING METHODS

Cages



Earthen ponds



KEY WELFARE ISSUES IN AQUACULTURE

Water quality

Temperature, CO₂, pH, oxygen levels, etc. → different fish species survive better in different conditions.

Handling procedures

Farmed fish are sometimes handled, vaccinated or graded according to their size. These procedures can be stressful for the fish, for example if they are taken out of the water.

Stocking densities

Research and practical experience has shown that, **on its own, stocking density is not necessarily one of the most important things affecting fish welfare.**

Transport

Extra attention is needed during transport, particularly when the fish are loaded and unloaded, essential to maintain the correct water quality.

Slaughter

Stunning and slaughter methods are diverse.

[RSCPA website](#)



WHAT DOES GOOD WELFARE LOOK LIKE FOR FISH?

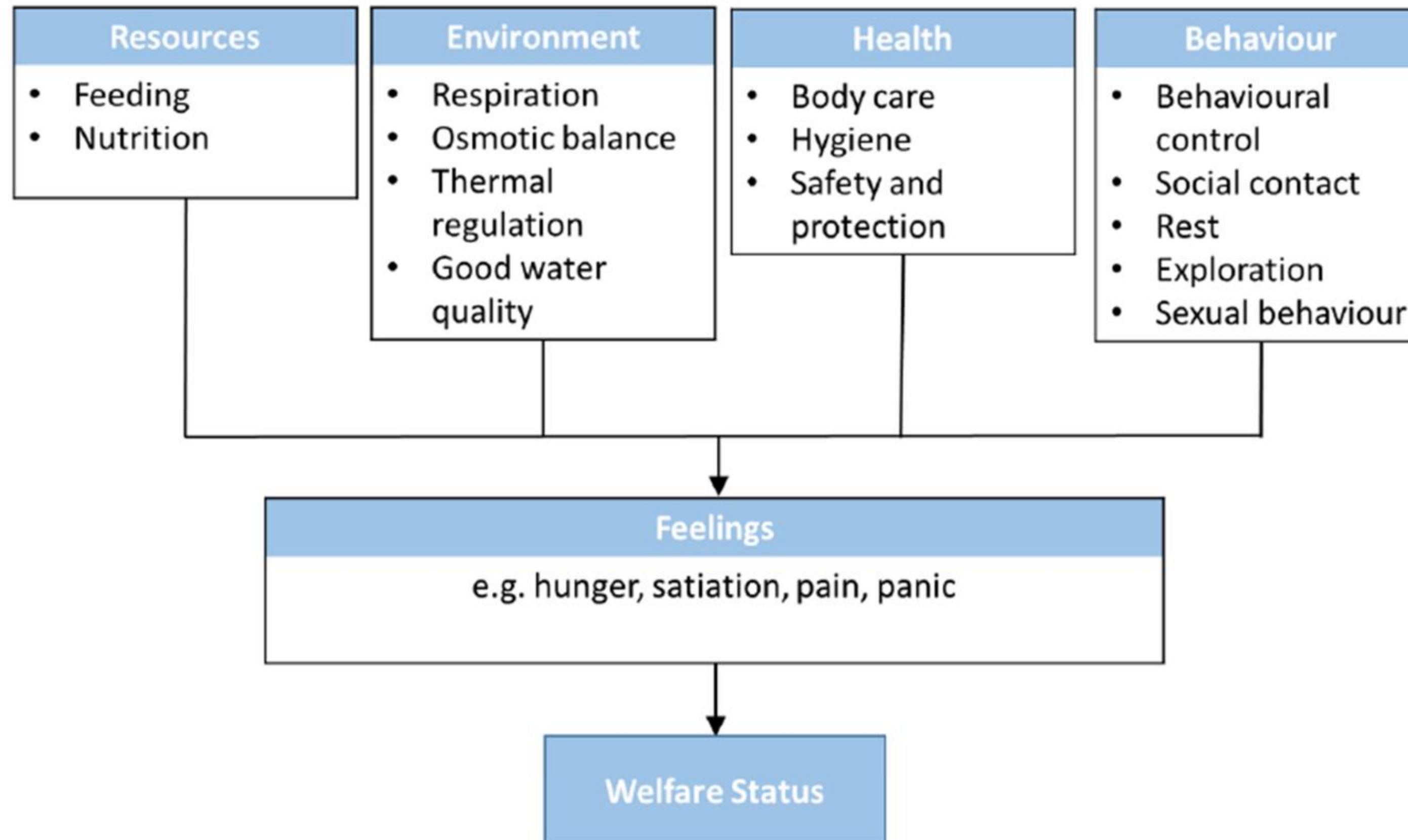


Fig. 2-1. The welfare needs of salmon can broadly be categorised into available resources, a suitable water environment, good health and freedom to express behaviours. The degree of fulfilment of these needs affects their mental state and thereby the welfare status of the animals. Adapted from "Mellor, D. J., Patterson-Kane, E. & Stafford, K. J. (2009) The Sciences of Animal Welfare. John Wiley & Sons Ltd, Oxford, UK, 212 pp. Copyright 2009" with permission from Wiley-Blackwell.

OUR WORK

IN AFRICA

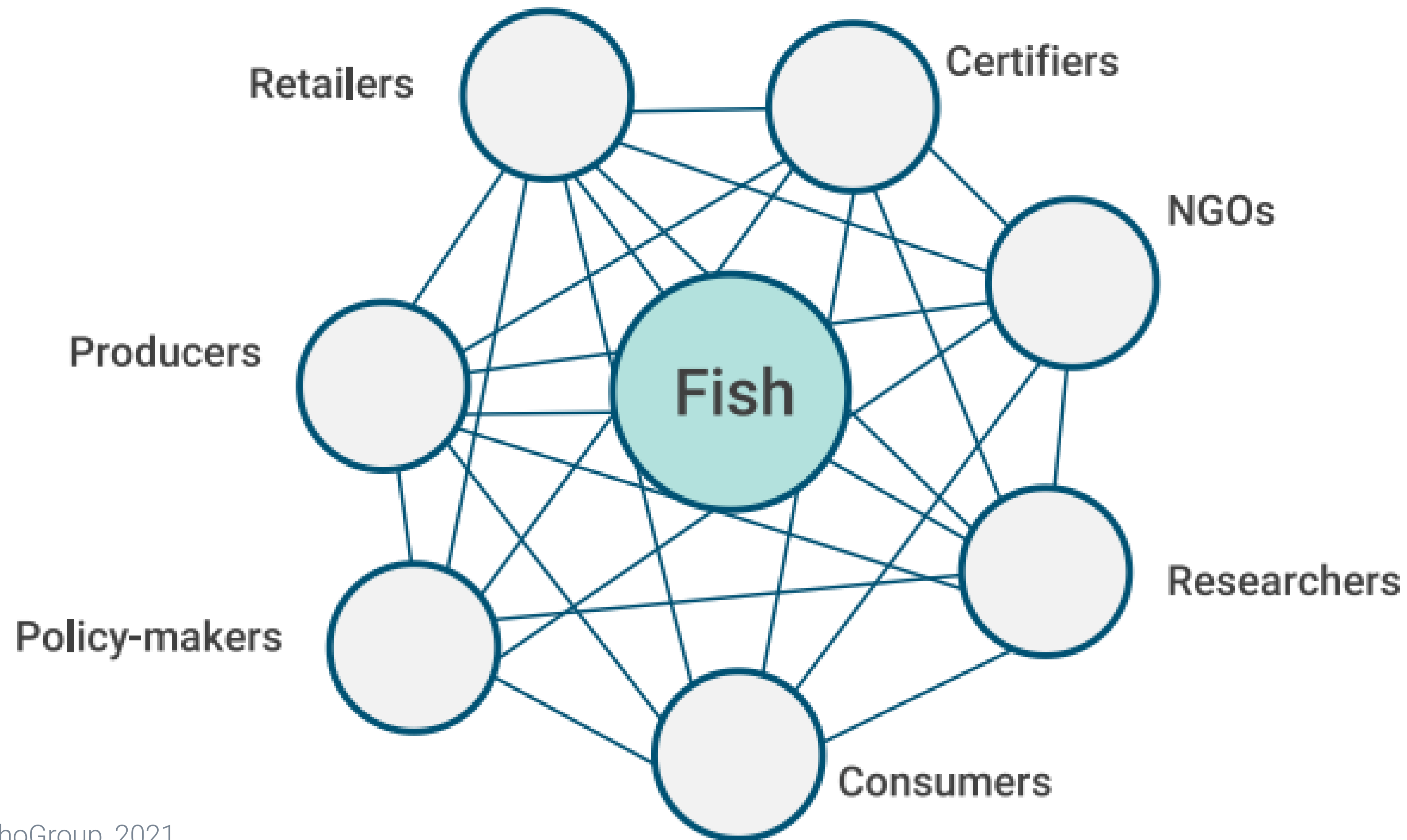


WHAT WE ARE DOING IN AFRICA

- Surveying fish farms in Kenya and Egypt
- Collecting primary data from farm operators on routine farming practices
- Identifying the key points of low welfare in production
- Designing tailored training programs
- Establishing a baseline of experience and knowledge in fish health and welfare



ACHIEVING FISH WELFARE REQUIRES A COLLABORATIVE APPROACH



Taken from FishEthoGroup, 2021

CONCLUSIONS

- Aquatic animal welfare is closely linked to human welfare
- Fish feel pain and their welfare is important to consider.
- They are an extremely diverse group with different welfare needs.
- They are exploited in the trillions.
- There is lots of room for making improvements to their welfare.
- Communication and collaboration between stakeholders is essential.

THANK YOU

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www.ethicalseafoodresearch.com



Learn more on
our website



REFERENCES

- Broom, D.M. 1991. Animal welfare: concepts and measurement. *Journal of Animal Science*, 69: 4167– 4175.
- Walters, E. T. 2018 Defining pain and painful sentience in animals. *Animal Sentience*, 21 (14).