



# BENEFITS OF AQUATIC ANIMAL WELFARE FOR SUSTAINABILITY

Summary Report

The following is a summary of our full report on the Benefits of Aquatic Animal Welfare for Sustainability, primarily addressed to public policy and other relevant stakeholders in the sustainability sector. It is our objective to show that animal welfare considerations are inextricably linked to ethical, environmental and social issues, and therefore should be an integral component of sustainable development policies moving forward.

In a food production system that is highly intensive coupled with low animal welfare considerations, the results include poor health, more disease, antibiotic use, mortality, environmental and ecosystem impacts, and ultimately lower resource efficiency and productivity – the opposite of sustainability.

This suggests that a holistic approach that includes animal welfare is needed in sustainable development policies. The following recommendations can contribute to improved nutrition, food security, food safety and ecosystem health, along with reduced carbon emissions, ocean plastics, overfishing and public health threats.

As indicated in each of the ten priority areas below, animal welfare considerations serve as a cross-cutting solution to many of the sustainable development challenges we face today. It is time to recognize the critical role that animal welfare plays in our ability to achieve many of these goals.



# WELFARE AND SUSTAINABILITY

## Recommendations

We have identified ten key areas where aquatic animal welfare is at the heart of sustainability along with recommended actions.

### 1. Water Quality

Poor animal welfare resulting from high stocking density and inefficient feeding can cause toxic wastewater in fish farms. Left untreated, it can deplete surrounding waters of oxygen, causing algal blooms / dead zones, and public health issues.

**A.** Species-appropriate stocking density and optimal feeding to mitigate toxic waste buildup in surrounding waters.

**B.** Extensive review of aquaculture zoning and site selection can also prevent environmental impacts of aquaculture.

### 2. Biosecurity

The escape of non-native fish from aquaculture farms causes competition for food and potential displacement of native fish, which could lead to deleterious

consequences for wild fish populations and the local environment.

**A.** Producers should implement measures that prevent escapes, such as double-netting, and prepare contingency plans in the event an escape occurs.

**B.** Provide species-specific stocking density, feed composition and environmental enrichment to naturally reduce stress and aggression (especially for normally passive species who become aggressive under captivity conditions).

**C.** We strongly caution against moving towards intensive land-based aquaculture systems as the solution to offshore aquaculture issues (e.g. water contamination and fish escapes) -- catastrophic system failures in recirculating aquaculture systems can kill up to millions of fish.

### 3. Disease Control

Disease outbreaks in fish farms are caused by compromised

immune systems due to poor health, nutrition, and rearing conditions. Weakened immune systems increase the possibility of disease outbreaks which is problematic as pathogens and parasites can spread outside of the farm, damaging local fish populations and ecosystems.

**A.** Appropriate stocking densities, feeding and environmental enrichment specific to species and life stage can reduce stress and thus reduce the risk of infection, disease amplification, and transmission. Such prevention strategies should always represent the first line of defense against disease and parasites.

**B.** Apply medical interventions like traditional vaccinations that prepare the individual organisms' immune systems to combat pathogens. Such interventions must be handled by trained personnel following best welfare practices, such as handling fish in water and minimizing air time.

**C.** Steps must be taken to

# WELFARE AND SUSTAINABILITY



reduce the adverse effects on the welfare of all animals used in this process. To this end, the use of cleaner fish for the treatment of sea lice should be eliminated.

**D.** Provide training for staff to monitor and recognize physical and behavioral welfare indicators.

## 4. Antimicrobial Resistance

Antibiotics are frequently used to prevent or treat bacterial infections, especially in hatcheries, however unregulated usage has caused major concern for antimicrobial resistance. Poor welfare increases the need for antimicrobials to treat viruses, parasites and pathogens.

**A.** Every effort should be made to identify and treat isolated cases before they spread to the population.

**B.** The routine or prophylactic use of antibiotics should be phased out. However, metaphylactic use of antibiotics when absolutely necessary is acceptable.

**C.** When vaccination is neces

sary, it shall be done with minimal distress and with anesthesia, performed by certified veterinarians or adequately trained animal health professionals.

## 5. Feed Composition

While feed in aquaculture has improved dramatically to require less wild-caught fish, aquaculture is still heavily reliant on wild fish in current fish feed composition. Without major improvements to feed composition and techniques, the future of the entire fisheries industry as well as global food security is at stake.

**A.** We urge for a coordinated effort to improve feed composition through research and innovation to ease pressure on wild fish populations

**B.** Producers must move toward the use of alternative, plant-based feed products where possible, and higher feed efficiency ratios (e.g. less animal-derived ingredients) to the extent that the evidence suggests this will not have a deleterious impact on the health and wellbeing of the

fish nor the ecosystem.

**C.** Shift from carnivorous farmed species to herbivorous or omnivorous species, extractive species, and systems where animals and their feed are co-produced and are fed a more herbivorous diet.

## 6. Climate Change

Reducing the amount of wild fish required for aquaculture feed is directly linked to climate change. One method in which fishes are caught to feed farmed fish is through bottom trawling, which produces a significant amount of carbon emissions. Reversely, aquaculture will be increasingly affected by climate change in many ways, for example, through increasing ocean acidity, dissolved oxygen, and temperature, as well as more intense and unpredictable weather events.

**A.** A ban on bottom trawling to reduce bycatch, use of ghost gear, fish mortality, destruction of seabed habitats and carbon emissions. Until a





full ban is in place, we propose several alternatives and management measures for bottom trawling (see page 8 of full report).

**B.** Promote regenerative ocean and seaweed farming, both of which can provide benefits of carbon sequestration, restoration of ocean ecosystems, and addressing the global plastics crisis.

**C.** Sourcing feed from responsible and sustainable sources should be a top priority, as it directly relates to other animals being captured and processed to feed, producing a substantial amount of GHG emissions.

## 7. Food Security

High aquatic animal welfare translates to a more food-secure future, as it uses the best available science to create high welfare environments that ultimately reduces disease and mortality.

**A.** Utilize low trophic species, such as sardines and anchovies as direct protein and nutrient sources in relevant communities.

**B.** Improve the efficiency of fish feed conversion ratios to safeguard wild fish populations for communities who depend on fish for their main source of nutrition.

**C.** Promote local no-catch marine reserves to allow fish populations to recover and serve as a source of protein for local communities.

## 8. Food Safety

Several welfare factors affect fish product safety and quality for consumers. During rearing, poor welfare leads to more bacteria, viruses, biotoxins, and parasites, which are commonly treated with antimicrobials and chemicals. During slaughter, microbial contamination of water, increased handling, invasive stunning and slaughter methods could lead to increased bacterial growth post-slaughter, compromising the safety of the food product.

**A.** In aquaculture, every effort should be made to provide a high welfare environment for the aquatic animal that is species- and life

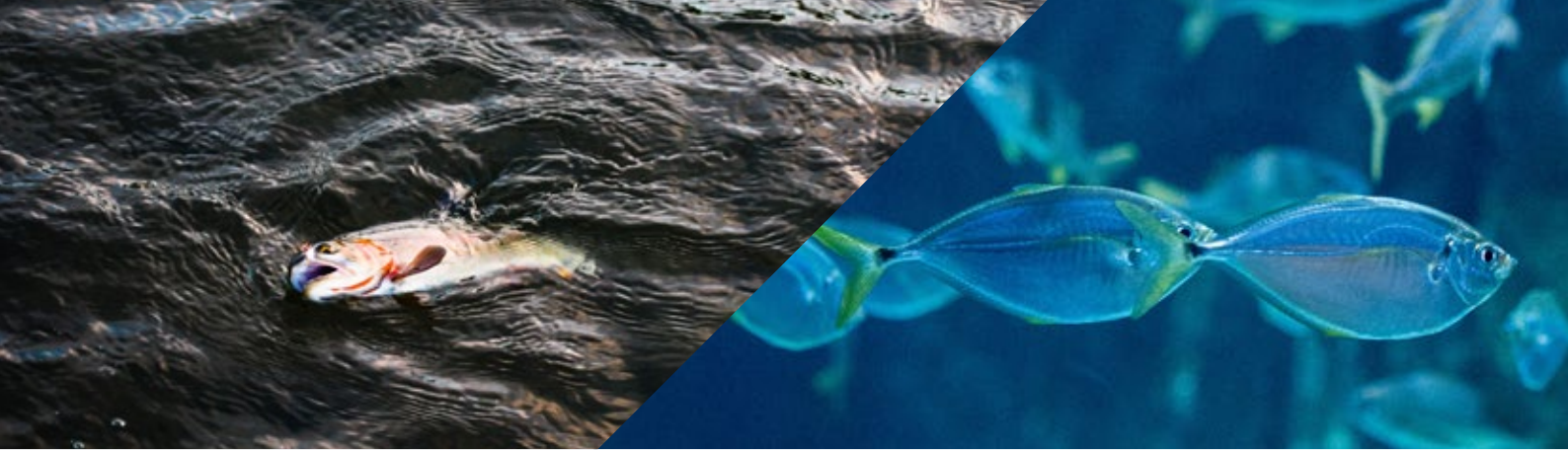
stage-appropriate to minimize stress and disease.

**B.** In capture fisheries, every effort should be made to capture and handle aquatic animals with welfare in mind to minimize stress and disease.

## 9. Ecosystem Health

A lack of welfare considerations in aquaculture and capture fisheries negatively impact the ecosystem's health. In aquaculture, poor nutrition from excess or insufficient feed for fish could lead to compromised water quality, aquatic pollution, and attract wild fish or predators due to extra feed hanging in the water column. In capture fisheries, abandoned fishing nets and gear, or ghost gear, continue to kill wildlife and pose serious ocean plastics pollution issues.

**A.** In offshore aquaculture, provide species-appropriate welfare considerations to reduce the probability of predators, escapes, and wastewater spillage.



**B.** In any aquaculture system where predation is likely to be an issue, a risk assessment of the deployment of anti-predator measures should take account of the animal welfare impact on the farmed fish, on the predators themselves, and on any nontarget species that may be affected.

**C.** In capture fisheries, fishing gear that is designed with welfare and environmental impacts in mind can help reduce unnecessary mortality of aquatic species (both target and non-target) and any potential of ocean plastic debris.

## 10. Livelihoods

Many local communities around the world rely on fisheries for employment, nutritious food, and human health. However, they are threatened by poor management and unsustainable fishing methods and practices that results in overfishing and excessive bycatch of non-target species, including endangered species. This not only puts future job opportunities and family businesses at risk, but

exacerbates food insecurity and public health issues.

Moreover, in capture fisheries, issues of human trafficking and human rights violations, particularly among migrant workers in developing nations, have been documented on fishing vessels and must end. In aquaculture, workers are exposed to a multitude of potential occupational hazards as well.

**A.** In terms of worker safety, all states should ratify ILO Convention No. 188 as minimum requirements for fishers. Adopt technological tools that allow workers to report their working conditions onboard at any given moment.

**B.** Catch share management systems must start with community-based needs and design in order to ensure protections of small-scale fishers, address other community needs and protect against excess consolidation into large fishing conglomerates. Animal welfare interventions should also stem from culturally-based needs and designs.

**C.** Follow best practices and policies that support coastal community livelihoods (see page 13 of full report).

**D.** Elimination of harmful fishing subsidies (e.g. fuel subsidies, financial support for industrial fishing fleets) that encourage overfishing, IUU fishing, and highly destructive practices to the ecosystem, such as bottom trawling. Promote subsidies that support sustainable fishing practices (e.g. supplemental payment to artisanal fishers during slow seasons, sustainable fisheries management programs, and local fisheries research and development.)



## Conclusion

As consumer demand is expected to rise for seafood in the coming years, further strain from overfishing, climate change and unsustainable production methods will be placed on our fragile ecosystems and harm the people and animals that rely on them most. These recommendations offer a robust framework for implementing meaningful welfare interventions that allow for aquatic animals to have a life worth living, and in the context of global development, provide adaptive measures for aquaculture and fisheries to ensure sustainable and humane development for decades to come.

Please refer to our full report for more information and additional recommendations.

We hope to have shown that aquatic animal welfare policies can play a significant role in solving many of the sustainability challenges we face today and should be integral to any sustainability policy.



# SIGNATORIES



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