



Benefits of Aquatic Animal Welfare for Sustainable Development Goals

SUMMARY REPORT



The 2030 Agenda for Sustainable Development sets forth a comprehensive framework for global development encompassing 17 Sustainable Development Goals (SDGs). These goals address the most pressing social, economic, and environmental challenges of our time, with the aim of creating a more equitable, prosperous, and sustainable world by the year 2030.

One crucial aspect that deserves attention in the context of the SDGs is animal welfare, which plays a significant role in both supporting and being impacted by multiple Goals. For aquatic animals, their welfare is intrinsically linked to not only SDG 14: Life Below Water, but the achievement of many other SDGs.

It is essential to recognize that aquatic animal welfare extends beyond ethical considerations. Improving their well-being has far-reaching implications for sustainable development, including poverty eradication, food security, environmental preservation, public health, and social equity. Incorporating aquatic animal welfare considerations into national policies, strategies, and practices is an urgent and essential task for all countries. By addressing the welfare of these sentient beings, nations can forge a transformational path towards a more sustainable and equitable future, in line with the principles and interconnectedness of the 2030 Agenda.

This report highlights **ten priority areas** in which aquatic animal welfare serves as a cross-cutting solution to many of the sustainable development challenges we face today. By embracing this holistic perspective, we can foster a more compassionate, sustainable, and resilient world for both present and future generations.

Recommendations

We have identified ten key areas where aquatic animal welfare is at the heart of the Sustainable Development Goals.

1. Water Quality

SDG 6, 14

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

SDG 6, 14

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

SDG 3, 14

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

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time.

C. Steps must be taken to 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

SDG 3, 14

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

5. Feed Composition

SDG 2, 12, 13, 14

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

SDG 13, 14

One method in which fishes are caught is through bottom trawling, which produces a significant amount of carbon emissions. Removing aquatic animals and destroying seabed habitats also reduce the ocean's capacity to store carbon. Aquaculture will be increasingly affected by climate change in many ways, including increased temperature, ocean acidity, and pollutants, as well as more intense and unpredictable weather events.

A. Ban bottom trawling. Where bans are not possible, modify trawl gear, reduce trawl speed and duration, elevate nets to avoid damaging the sea floor,



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and use bycatch reduction devices. Also, adopt site-specific management measures.

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

SDG 2, 14

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

SDG 3, 14

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, coupled with

humane stunning and slaughter, to minimize stress and disease.

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

9. Ecosystem Health

SDG 12, 13, 14, 15

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 waste-water spillage.

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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

SDG 1, 2, 3, 5, 6, 8, 10, 12, 13, 14, 15

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, it also 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. 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 help achieve global Sustainable Development Goals.





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