Comment Sheet for the DRAFT Shanghai Declaration v4

Deadline: 3 September 2021

Instructions

1. **Add your name and registration number** on the top of the sheet - only one sheet should be submitted per registered participant.
2. **Under "proposed change", clearly show how you would change/adjust the language** from the original language.
3. **Under "comment/justification" section, please justify your change(s) and the proposed new language** if your intention is to delete/add a sentence/paragraph. Please also use this column for any additional comments.
4. Please add all your comments on this Comment sheet, as any **comments directly on the shared 'DRAFT Shanghai Declaration' document itself might not be reviewed**.
5. Send your comments to GCA@fao.org before 3 September 2021.

INSERT NAME AND REGISTRATION NUMBER: Christine Xu 14816556

Section/ Paragraph	Proposed change BLUE: proposed additional text ~~RED~~: proposed deletion	Comment/Justification
General	Aquatic animal welfare is an essential component to sustainable aquaculture and is being incorporated into the Shanghai Declaration in order to implement and successfully achieve Agenda 2030 and the associated SDGs.	Animal welfare considerations are inextricably linked to ethical, environmental and social issues. However, aquatic animals and their welfare has remained an absent topic from the sustainability sector's discourse.
I.2	...but also the need to avoid that such growth comes at the cost of impairment of animal welfare, social inequality or the deterioration of ecosystems and biodiversity, demands new, sustainable, and equitable aquaculture development strategies. The private sector will remain the main actor in aquaculture production, and input and guidance from scientists, governments and civil society will play essential	Increasingly intensive aquaculture production impacts *both* animal welfare and the environment, i.e. greenhouse gas emissions, water quality, and land resources. Developing aquaculture using an animal welfare lens can help meet many of these challenges and at the same time contribute to livelihoods and nutrition globally.

	roles in regulating aquaculture, and in supporting and promoting citizen's views, participation and benefits.	
I.2 continued	At the same time, to feed an ever-growing human population expected to reach almost 10 billion people by 2050, the future trajectory of aquaculture development needs to become more sustainable. Already, over 100 billion fishes are farmed each year (source: fishcount.org.uk), while demand for aquaculture production will more than double by 2050 (source: WRI).	It is essential to include the magnitude of how many fishes are being farmed and slaughtered currently – a staggering amount – before promoting the extensive use of aquaculture as a sustainable source of protein for years to come.
I.3	They further seek to reduce the pressure of human economic activity on the natural environment by stressing the need not just for habitat/ecosystem and animal welfare protection, but also increased resource use efficiency and sustainable production and consumption, thereby spreading responsibility for delivering sustainability across all economic actors.	One of the most important measures for mitigating greenhouse gas emissions from aquaculture is improving fish health through the improvement of water quality management (FAO, 2018). A lack of welfare-oriented policies/practices result in an overall negative impact on ecosystem health and biodiversity. 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.[1] Low welfare can also increase disease outbreaks that can spread to local species, while high stress increases the probability of aggression in normally passive species, which could increase the likelihood of fish escapes and alter biodiversity and genetic resources in local marine ecosystems through interbreeding, predation, competition, and habitat destruction.
II Vision, commitments &	***Recognizing* that developing aquaculture sustainably and equitably requires taking a holistic approach -- one that values both human and animal health and welfare.**	Developing sustainable and equitable aquaculture holistically requires also taking the fishes' health and welfare concerns into consideration, which is currently lacking from this

[1] Chislock, M. F., Doster, E., Zitomer, R. A. & Wilson, A. E. (2013) Eutrophication: Causes, Consequences, and Controls in Aquatic Ecosystems. Nature Education Knowledge 4(4):10

strategic priorities	**Considerations given to aquatic animal welfare is key to maintaining healthy immune systems while minimizing the negative environmental and social impacts of aquaculture, including damaging the ecosystem and jeopardizing long-term food security.** *Emphasizing* that while fish can provide a nutritious diet for local fishing and vulnerable communities whose livelihoods depend on fish, it is not a sustainable protein alternative for the masses, particularly not on intensive aquaculture production levels.	document. We propose adding a stand-alone paragraph dedicated to this concern (perhaps between paragraphs 7 and 8). Avoid promoting fish diets as a sustainable source of protein. Between 0.7 and 2.2 trillion fish are caught in the wild (source: fishcount.org.uk), with an estimated 50% used as feed for farmed fish (source: ALI.fish). According to the UN Food and Agriculture Organization, only 6.2% of global fish populations are "underfished." This means that 93.8% are being fished either at or over the absolute maximum sustainable limit to prevent their populations from crashing. At its current rate, aquaculture and fisheries are built on a declining resource which will only exacerbate food and nutrition insecurity levels for the most vulnerable populations such as women and children.
II.2	...the incorporation of aquaculture into the design of sustainable and healthy food systems that reduce poverty, increase public health, ~~human health benefits of consuming aquatic products~~, maximize animal health and welfare, and minimize negative externalities that may result from some aquaculture practices...	Elevated aquatic animal welfare translates to a more food-secure future. High welfare means using the best available science to create environments that reduce disease and mortality. As climate change increases pressure on aquaculture, relieving other stressors, such as those caused by poor welfare practices, is vital to ensuring adequate survival. Welfare factors affect product safety and quality for consumers. Poor welfare practices lead to increased bacteria, viruses, biotoxins, and parasites, commonly treated with antimicrobials and chemicals. Misuse/overuse of antimicrobials could lead to antimicrobial resistance in humans and has been declared as one of the top global health threats by

		the World Health Organization.[2] During slaughter, microbial contamination of water, increased handling, invasive stunning and slaughter methods could all lead to increased bacterial growth post-slaughter, compromising food safety and impacting public health.[3]
II.3	Recognizing aquaculture's role in supporting countries to achieve sustainable development, particularly in the fight against poverty, hunger, and malnutrition, and its contribution to the global food system, bearing in mind the amount of wild fish being used to sustain farmed aquaculture in addition to the continuous positive growth of the sector, which in 2019 contributed 34.8 million tonnes of aquatic plants, as well as 85.3 million tonnes of fish, and calling attention to the wide diversity of the species produced by aquaculture through numerous production systems in diverse environments;	While feed utilization has improved dramatically requiring less wild caught fish, aquaculture is still heavily reliant on wild fish in current fish feed composition. In order to safeguard the current SDGs we must improve the efficiency of fish feed conversion ratios to protect wild fish populations for communities who depend on fish for their main source of nutrition. Additionally, we should utilize herbivorous species, and low trophic species, such as sardines and anchovies – normally used as fish feed for high value/carnivorous fish in developed nations – as direct– quality protein and nutrient sources in relevant communities.[4]
II.4	Recognizing that aquaculture is diverse, and that extensive, semi-intensive and intensive culture systems are all being practiced, ranging from small-scale backyard family fishponds to highly industrialized technologically-sophisticated market-driven commercial operations, and each system must have its own animal welfare considerations according to the species being kept and the best available science, and that aquaculture provides livelihoods and employment opportunities, generates economic incomes, and contributes to food security directly and indirectly.	Each system incurs its own specific considerations with regard to animal welfare (i.e. differences in opportunity for environmental enrichment, varying controllable water quality parameters, etc.). While we do not currently advocate that one system fares better than others from a welfare perspective, we recognize that each individual system has pros and cons, and should be operated under best management practices.

[2] Antimicrobial resistance. (2020, October 13). World Health Organization. https://www.who.int/news-room/fact-sheets/detail/antimicrobial-resistance

[3] Food Safety considerations concerning the species-specific welfare aspects of the main systems of stunning and killing of farmed fish. (2009, July 1). EFSA. https://efsa.onlinelibrary.wiley.com/doi/pdf/10.2903/j.efsa.2009.1190

[4] Fishing for Catastrophe. (2019). Changing Markets Foundation. https://changingmarkets.org/wp-content/uploads/2019/10/CM-WEB-FINAL-FISHING-FOR-CATASTROPHE-2019.pdf

II.5	Noting that fish is the most traded agricultural commodity globally, and recognizing that there is a danger that vulnerable groups may be marginalized along with increased fish trade due to the imbalanced social-economic context, in addition to compromised welfare for both humans and animals involved in the entire fisheries supply chain.	A publication on "seafood" (sea animals) imported to Europe and the US suggests that when domestically caught fishes and imported ones are combined in local markets, the risk of purchasing seafood involved with modern slavery increases approximately 8.5 times, compared with domestically caught fishes[5].
II.8	Noting the request of the Committee on Fisheries (COFI) to the FAO to consider guidance for concrete actions for the sector – according to national contexts, capacities and priorities – on the economic, social, ~~and~~ environmental, and animal health/welfare dimensions of sustainable development and on climate change adaptation and mitigation.	Due to the fact that animal health and welfare is explicitly linked to the aforementioned priorities, this sector should be given its own considerations.
II.21	Support a common **vision** for an aquaculture sector that leads the way towards more productive, efficient, resilient, climate-smart, humane, and socially responsible food systems, fulfils its potential to meet the increasing demand for safe, healthy and affordable aquatic food and aquatic products, with reduced impacts on the global environment, contributes to human well-being and helps to eradicate poverty, malnutrition and hunger, and matures in an economically, socially and environmentally sustainable way.	Development within the aquaculture industry must move forward using only humane management practices according to species, science, system, etc.
II.23.A	Aquaculture has an important role to play in the transformation of current food systems from feeding people to nourishing people in certain regions, emphasizing the importance of nutrition and health as key outcomes of food systems. Aquatic food is recommended as a key component	A fish-based protein diet should NOT be actively promoted at all levels of society. We recognize the importance of consuming fish as an essential source of protein in highly vulnerable communities and populations whose health and livelihoods historically depend on it. However, consumers who

[5]Tickler, D. et al. (2018). Common causes, shared solutions: The relationship between modern slavery and the race to fish. Nature Communications, 9: 4643.

	of a diverse and healthy diet. Fish and other aquatic foods are important sources of protein, essential fatty acids and micronutrients especially for the poor and vulnerable, with differences in the nutrition composition of aquatic foods based on species, farmed type and production systems, as well as in the way these foods are prepared and consumed. Sustainable Food Systems (SFS) must generate positive value along three dimensions simultaneously: economic, social (including women, youth, nutrition and health) and environmental (with a particular focus on global environmental and climate change impacts). Importantly, aquaculture production must be considered as an integral part of the global food systems with intrinsic linkages to capture fisheries and terrestrial agriculture. Although fish for food remains important for vulnerable populations, a shift towards a more sustainable, plant-based diet is encouraged for the rest of the global population.	are in a position to do so should aim to end or sharply reduce their consumption of aquatic animals. In order to continue food production under planetary health limits and feed 10 billion people by 2050, the need for a drastic transformation in food systems cannot be stressed enough. Even the biggest seafood businesses realize that they are built on a declining resource and therefore face increasingly riskier financial exposure. Since aquaculture is still heavily reliant on wild-caught fish for feed, by ending or substantially reducing our overall consumption of fish, we can give fish populations a chance to recover, provide local fishing communities - those whose livelihoods depend on fish - a chance to survive, and curb the endless demand that is driving industrial fishing vessels to travel further and further out to sea because coastal fisheries are depleted.
II.23.B	Lack of spatial planning and suboptimal zoning and site selection and/or area management can expose production to greater risk of environmental disruption, result in lower welfare living conditions for animals, and represents major constraints to the expansion of the aquaculture industry.	Site selection must be made with ample consideration to animal welfare (species, lifestage, etc.), but should also attempt to incorporate as many "natural" elements for that species. "Enrichment" as an element of improving animal welfare in captivity has been extensively proven. Studies illustrate the variety of benefits that come with an enriched environment for both animals and producers.[6,7,8] Many actions, such as dynamic water currents, favourable feeding schedules,

[6]Arndt, R. E., Routledge, M. D., Wagner, E. J., & Mellenthin, R. F. (2001). Influence of raceway substrate and design on fin erosion and hatchery performance of rainbow trout. North American Journal of Aquaculture, 63(4), 37–41.

[7]Soares, M. C., Oliveira, R. F., Ros, A. F. H., Grutter, A. S., & Bshary, R. (2011). Tactile stimulation lowers stress in fish. Nature Communications, 2(1), 1–5.

[8]Gerber, B., Stamer, A., Stadtlander, T., "Environmental Enrichment and its effects on Welfare in fish Autoren: Im Auftrag von: BLV-Bundesamt für Lebensmittelsicherheit und Veterinärwesen" (2015) Research Institute of Organic Agriculture.

		adequate lighting/photoperiod, and preferred colours are highly unlikely to have any deleterious consequences. These changes could be easy to implement and would require minimal capital investment and disruption to a farm's operations.
ANNEX 1:A	Direct aquaculture to food systems for nourishing communities whose livelihoods depend on it while minimizing consumption of fish where appropriate for sustainability. Expand the contribution of aquaculture to sustainable food systems towards nourishing nations and providing healthy, nutrient-rich and climate-friendly food to people	Please refer to the above comment for II.23.A.
ANNEX 1:A.10	Adopting a holistic food systems perspective, where possible, on the development of aquaculture to transcend the narrow focus of production issues, value chains and sectoral policies and achieve positive human (including economic and nutritional), animal, social and environmental outcomes, such as equity and One Health and One Welfare. ~~human wellbeing;~~	For A.10 and B.9, we'd like to strongly emphasize the need to include animal health and welfare. To truly develop aquaculture sustainability and equitably, the animals themselves must be considered in addition to social, environmental and human concerns. Even members of the FAO Subcommittee on Aquaculture repeatedly emphasized the need to take animal health into consideration in any future sustainable aquaculture development guidelines and policies. The Shanghai Declaration must not miss this opportunity to promote truly holistic development policies that could shape aquaculture for decades to come. Please refer to our report on the Benefits of Aquatic Animal Welfare for Sustainability for more information.
ANNEX 1.B	Stakeholders may support this strategic priority by: Moving towards increased production and consumption of omnivorous or herbivorous species in order to promote	Each farmed salmon must eat the biomass equivalent to 9 herring, or 120 anchovies, to be brought to harvest weight[9].

[9]"BLUE LOSS" Estimating How Many Aquatic Animals Are Hidden in the Food System. , 2021.

	decreased reliance on wild-caught fish to feed carnivorous species (i.e. Atlantic salmon).	
ANNEX 1:B.9	Taking into consideration the need to ensure sustainability in all its aspects, economic, social, ~~and~~ environmental, and animal welfare and looking for synergies including with other sectors where possible and addressing trade-offs where necessary;	
Concluding Remarks	The FAO discusses fish welfare in the EUROPEAN INLAND FISHERIES AND AQUACULTURE ADVISORY COMMISSION (EIFAAC) WELFARE OF FISHES IN AQUACULTURE. Specifically mentioning: "The increasing importance of fish welfare in aquaculture comes from ethical considerations as well as from the perspective of improving standards and quality of fish production technologies and aquaculture products. The welfare status of the fish has direct implications for their production and for the sustainability of the industry as a whole. Fish kept under good welfare conditions are less stressed and less susceptible to diseases and therefore they require less medication and treatment, show better growth rates and food conversion and ultimately provide a better-quality product. Finally, the economic benefits are obvious. In addition, consumers care about welfare issues potentially associated with intensive production practices, and they expect from the fish farmers that the welfare of farmed fish is addressed."	With such a vast number of individuals being killed in aquaculture each year, it is pivotal that their welfare is considered. Fish sentience has been largely overlooked and a substantial amount of evidence already exists[10,11] that demonstrates sentience. Given this evidence and the growing public awareness of this, any sustainable aquaculture development language should and must take a proactive approach to address fish welfare considerations in the industry, rather than having to take a reactive stance in the near future.

[10]PEDRAZZANI, Ana Silvia et al. Sentience and well-being of fish: a vision of the future of the consumer market. Aquaculture Panorama, v. 102, p. 24-29, 2007.
[11] "Ample evidence for fish sentience and pain - WBI Studies Repository." https://www.wellbeingintlstudiesrepository.org/cgi/viewcontent.cgi?article=1375&context=animsent.

	Considering that the FAO has already stated "it is in the self-interest of the aquaculture industry to optimize culture conditions in order to support and promote fish welfare", the aforementioned language surrounding welfare as it directly/indirectly relates to sustainability must be incorporated into the Shanghai Declaration.	

Our comments have been endorsed by the following signatories:

Alianima
ANIMAL
Anima International
Animal Friends Croatia
Animal Friends Jogja
Animal Justice Canada
Animals Australia
Asia for Animals
Animal Nepal
Aquatic Life Institute
Animal Rights Center Japan
ARBA
Coalition of African Animal Welfare Organisations
Compassion in World Farming
Conservative Animal Welfare Foundation
Crustacean compassion
Essere Animali
Factory Farming Awareness Coalition
Fish Welfare Initiative
Fórum Animal

Friends of Phillip
Green REV Institute
The Humane League
Humane Society International
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