

# Guidelines for commitment to animal welfare in fish farming



FÓRUM  
NACIONAL DE  
PROTEÇÃO E  
DEFESA ANIMAL

PROTEÇÃO E DEFESA



ProDAA

DE ANIMAIS AQUÁTICOS

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# 1. PRESENTATION



At Fórum Animal, our mission is to guarantee an end to animal exploitation, regardless of species. We have been working since 2000 to ensure that all animals are recognized as sentient beings and have the right to experience life with freedom and respect

**This work is carried out in an interdisciplinary way and on several fronts, including the spheres of education, market and politics. We believe that information and dialogue are the key factors in achieving our mission and are therefore the pillars of all our initiatives.**

The initiative for the Protection and Defense of Aquatic Animals (ProDAA) is another step towards our mission and was born with the specific aim of looking at this group of animals that are rarely considered worthy of empathy and dignity. Aquatic animals are constantly exploited for experimentation, entertainment and human consumption in a variety of ways. Abolishing these practices once and for all will be a long and hard-fought road, so then we propose to use the science of Animal Welfare to ensure the quality of life of fish in the food industry, where hundreds of millions of animals are raised for consumption annually. Therefore, establishing a dialog with the companies involved in this scenario is urgent.



**In this document, we present Welfare guidelines for different species of fish raised for human consumption through fish farming. These guidelines are in line with global policies on the subject and aim to minimize stress during handling, guarantee quality conditions in the aquatic environment, as well as abolish practices that lead to cruel slaughter. We present these guidelines as constituents of a public commitment to animal Welfare to be made by fish producers, meat processing plants and retailers throughout the entire production chain, including fish by-products (animal feed, leather and other food products) operating in Brazil, with a maximum deadline for compliance.**

We hope that these formal commitments to fish Welfare signed by companies in the food sector will result in concrete actions to increase the quality of life of these animals. May this attitude be one of many steps to promote companies' responsibility for animal ethics in the production chain.

**ProDAA Team, Fórum Animal.**



## 2. FISH RAISED IN THE FOOD INDUSTRY

The fish production chain for human consumption is the one that ends the most lives every year in the world. According to the Fish Count platform, there are more than 2 trillion animals raised with still little information on how to produce with animal welfare. In terms of production volume, the estimated value of fish and fish products intended for food worldwide was just over 176 million tons in 2020, according to the Our World in Data platform. To put that figure into perspective, the global production volume of chickens for food was just over 121 million tons in 2021, according to the same platform. In Brazil alone, the production of fish for consumption was 860,355 tons in 2022, according to the Anuário Peixe BR 2023.

This is a surprising amount of lives without any legal apparatus established in the country that guarantees the minimum well-being.

**The availability and abundance of fish species raised in the industry can vary over the time and in different regions of the country, following the natural seasonality of ecosystems.**

However, extractivism to meet market demands directly impacts the species targeted by the fishery by exceeding the natural reserve of these species, by reaching riverbeds, oceans and lakes and by altering the ecological relationships in which each species is involved. In addition to the way they are captured and killed, there is still a profound deficit of respect and well-being. The consequences of this process indirectly impact the entire aquatic ecosystem.

Different species of fish are raised for food, including freshwater and saltwater fish. The tilapia, a popular name given to a group of species from the Cichlidae family, is one of the most cultivated fish in the world. The most cultivated species of tilapia in Brazil is the Nile tilapia, *Oreochromis niloticus* (Linnaeus, 1758). In Brazil, tilapia production is significant in relation to native fish, accounting for 550,060 tons or 64% of total production in 2022, according to the [Anuário Peixe BR 2023](#). Considering the average weight of 0.8 kg for each tilapia, we can estimate that Brazilian tilapia production alone is around 687 million lives every year.

**Below is a list of the species involved in fishing and fish farming in Brazil:**



**NORTHERN REGION**  
2022 = 145.310 T

*Colossoma macropomum* (Tambaqui)  
*Arapaima gigas* (Pirarucu)  
*Sus domesticus* (Pirapitinga)  
*Oreochromis niloticus* (Tilápia)  
*Cichla acellaris/manoculus* (Tucunaré)



**NORTHEAST REGION**  
2022 = 170.065 T

*Oreochromis niloticus* (Tilápia)  
*Litopenaeus vanammei* (Camarão marinho)

**CENTRAL-WEST REGION**  
2022 = 109.900 T

*Colossoma macropomum* (Tambaqui)  
*Oreochromis niloticus* (Tilápia)  
*Piaractus mesopotamicus* (Pacu)  
*Pseudoplatystoma corruscans* (Pintado)  
*Salminus maxillosus/brasiliensi* (Dourado)

**\* MARINE SPECIES**

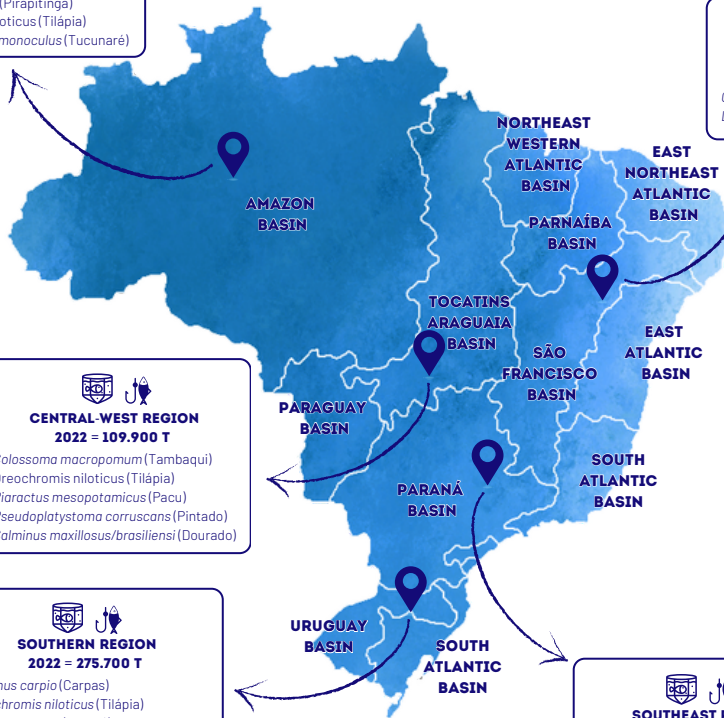
*Sardinella*: *Sardina pilchardus* (Sardinha)  
*Cynoscion acoupa* (Pescada)  
*Cynoscion acoupa* (Tainha)  
*Rhamdia quelen* (Jundiá)  
*Salminus maxillosus/brasiliensi* (Dourado)  
*Engraulis encrasicolus* (Anchova)  
*Centropomus undecimalis* (Robalo)  
*Solea solea* (Linguado)  
*Litopenaeus vanammei* (Camarão marinho)  
*Trichiurus lepturus* (Peixe-espada)  
*Katsuwonus pelamis* (Atum-Bonito)

**SOUTHERN REGION**  
2022 = 275.700 T

*Cyprinus carpio* (Carpas)  
*Oreochromis niloticus* (Tilápia)  
*Rhamdia quelen* (Jundiá)  
*Salminus maxillosus/brasiliensi* (Dourado)  
*Crassostrea gigas* (Ostras)  
*Mytilus edulis* (Mexilhões)

**SOUTHEAST REGION**  
2022 = 159.380 T

*Oreochromis niloticus* (Tilápia)  
*Piaractus mesopotamicus* (Pacu)  
*Pseudoplatystoma corruscans* (Pintado)  
*Centropomus parallelus* (robalo-peva)



Most cultivated species in aquaculture/fishing by region.

According to Peixe BR (2021), marine fishing accounts for 47% of all fish production in Brazil.

We understand that currently fishing and fish farming play a significant role in the Brazilian economy, providing resources, generating jobs and contributing to national and international trade in fish products. However, it is essential to consider that the raise of fish for human consumption involves various practices that rarely consider animal Welfare and that the global market itself is demanding minimum standards of Welfare and humane treatment of animals in the aquatic production chain (Fishwelf, 2020).

**Considering this whole context and our mission as an organized civil society for the benefit of animals, we propose that the treatment of fish in fish farming in Brazil be guided by science and ethics and include Welfare at all stages of the production chain.**

**In other words, we propose that the companies involved in fish farming ensure their commitment to our society in minimizing the suffering of fish as much as possible.**



# 3. ANIMAL WELFARE BENCHMARKS

Promoting minimally decent conditions for fish raised in the industry is an ethical and moral duty, since we know that these animals are beings capable of feeling and should have the right to experience life without suffering. By welfare, we mean the scientifically proven parameters established in the science of Animal Welfare. In 1994, Mellor & Reid presented the Five Domains of Animal Welfare, meaning an expansion of the Five Freedoms framework (1965, Roger Brambell).



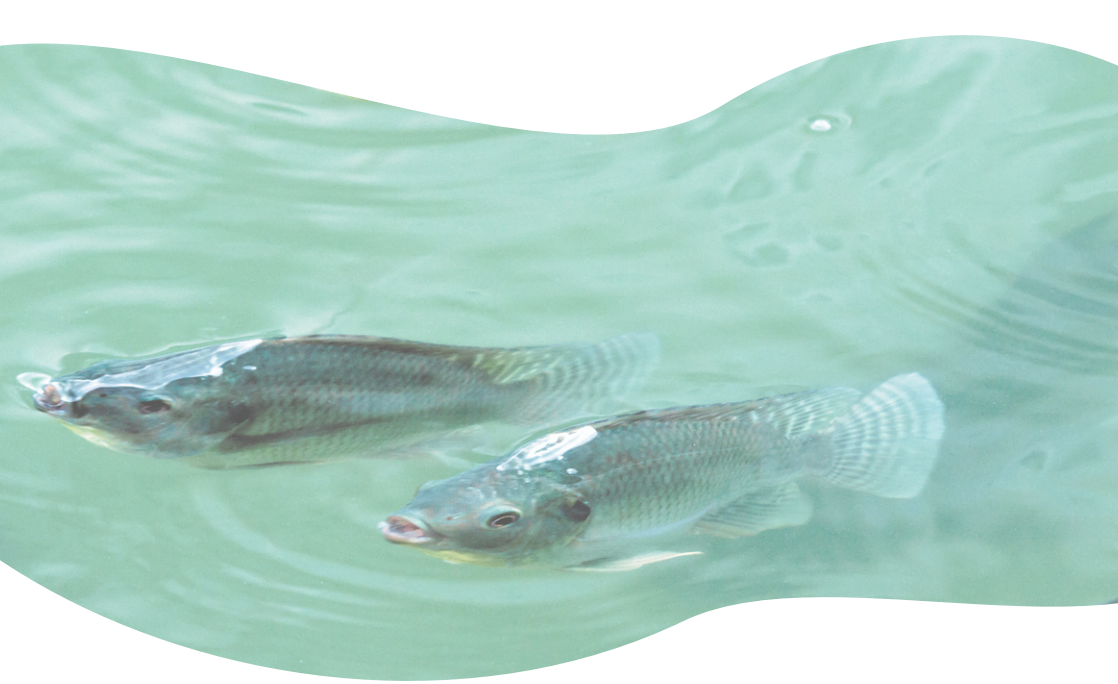


<b>FIVE FREEDOMS (1965, ROGER BRAMBELL)</b>	<b>FIVE DOMAINS (1994, MELLOR &amp; REID)</b>
<p><b>Freedom from Hunger and Thirst:</b> by ready access to fresh water and a diet to maintain full health and vigor.</p>	<p><b>Nutrition:</b> by ensuring that the animals receive the right feed to meet their nutritional needs.</p>
<p><b>Freedom from Discomfort:</b> by providing an appropriate environment including shelter and a comfortable resting area.</p>	<p><b>Physical Environment:</b> by offering living conditions that meet the animals' needs for comfort and safety.</p>
<p><b>Freedom from Pain, Injury or Disease:</b> by prevention or rapid diagnosis and treatment</p>	<p><b>Health:</b> by providing veterinary assistance and health care to prevent and treat illnesses and injuries.</p>
<p><b>Freedom to Express Normal Behavior:</b> by providing sufficient space, proper facilities and company of the animal's own kind.</p>	<p><b>Behavior:</b> by allowing animals to express their natural behaviors and providing appropriate stimuli.</p>
<p><b>Freedom from Fear and Distress:</b> by ensuring conditions and treatment which avoid mental suffering.</p>	<p><b>Mental:</b> by considering the psychological well-being of the animals, including stress management and environmental enrichment.</p>

They are essential pillars for assessing AW and improving the ethical treatment of animals in different contexts, ensuring that their physical and psychological needs are met and that they can live dignified and healthy lives. They are an important benchmark for promoting compassionate and ethical practices towards animals, and are widely recognized internationally as a benchmark in this context.

In 2021, the NGO Alianima published the Declaration of Sentience in Fish, a study bringing together many professionals in the field with the aim of showing that fish are sentient animals. According to anatomical, physiological, behavioral and evolutionary studies, we understand that fish are capable of feeling pain, fear and other feelings, with perception and cognitive abilities comparable to or even superior to those of other vertebrates. They have memory, live in complex social communities, learn from each other, build structures and use tools. Fish also have heightened senses that allow them to consciously react to and stimulate incoming impacts.

This evidence proves the sensitivity and our responsibility to consider the well-being of these animals, which is a concept that covers different areas of life. To offer a life with a high degree of well-being, you need to be well physically, behaviorally and mentally. This concept is directly related to the sustainability of socioeconomic and ecological systems, being a priority in the main global institutions and bodies that are a reference in animal management, biodiversity conservation and single health. Unique well-being, that is, for all, is advocated in the sustainable development objectives proposed by the United Nations (UN) to be achieved by 2030.



When we consider the minimum welfare of fish in fish farming, we recognize that these beings are sentient, capable of feeling pain and stress and that we are committed to reducing their suffering. Every fish farming initiative should at least consider these factors. Therefore, it is our duty to ensure that fish are treated ethically and respectfully at all stages of cultivation, from creation, capture and slaughter. Recognizing and promoting fish welfare is important not only from an ethical point of view, but also to ensure the sustainability and quality of resources.



# 4. CRITICAL POINTS IN FISH FARMING

**The growing demand for fish farming leads to rearing conditions that are not consistent with the concept of Welfare, such as overcrowding, compromised water quality and harmful and inadequate handling practices. These factors have a negative impact on fish welfare, resulting in health and behavioral problems.**

Currently in Brazil there is Ordinance 365, published on July 16, 2021, which approves the technical regulations for pre-slaughter handling and humane slaughter and the stun methods authorized by the Ministry of Agriculture and Livestock (MAPA). This document covers both butchered animals and seafood, but only considers amphibians and reptiles to be seafood and does not specifically address fish. Therefore, when it comes to fish, there are no explicit national regulations defining humane handling and slaughter practices. The document we have as a reference that explicitly addresses fish welfare in the country is the Manual for the Humane Slaughter of Fish, published in 2022 also by MAPA. In this manual, we find technical information on how to consider practices that lead to less suffering for fish during farming and slaughter. However, this manual is advisory in nature and has no legal regulatory effect.

Also in 2022, MAPA published the National Aquaculture Development Plan (PNDA), a document that will guide actions over the next 10 years (2022 to 2032). Axis 6 of this program mentions fish Welfare, but very superficially and with a view to the sanitary area. The aim of this program is to be a professionalization tool for aquaculture. In Brazil, however, the necessary progress has been happening slowly and not very effectively.

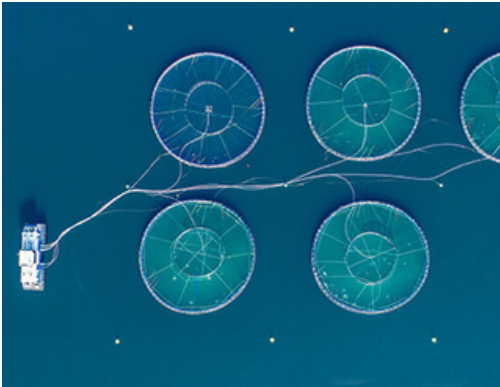
**In Brazil, some initiatives aimed at fish Welfare in aquaculture are being taken. Various institutions, such as NGOs, universities and government bodies, have carried out educational actions and initiatives to disseminate information about fish Welfare.**

Although we are still in the process of implementing more specific regulations for the area, we have laws aimed at animal Welfare in general, with punishments for mistreatment of animals, which includes fish (Environmental Crimes Law - Law No. 9.605/199 and the Fauna Protection Law - Law No. 5.197/1967).



FISH WELFARE IN AQUACULTURE

Another important action aimed at fish Welfare is the certification of good practices and quality, already present in some companies that commercialize fish in Brazil, such as the Aquaculture Stewardship Council (ASC) Certificate. This certification establishes criteria and standards for fish farming in aquaculture, taking into account animal Welfare, as well as the quality and health of the ecosystem. These initiatives aim to raise awareness of the importance of fish Welfare through more humane and sustainable practices.



**In the process of raising fish for food, it is important to remember that these animals come from two production processes: aquaculture and fishing. Each of them has challenges in terms of maintaining animal welfare and needs to be addressed specifically, and practically all the guidance we have in the manual published by MAPA concerns aquaculture and slaughter, not fishing. In this sense, this document should act as a starting point and not the end goal. The challenges related to fishing must be approached with the same seriousness by civil society as they are in relation to aquaculture, so that it is possible to offer a better life to animals in an equitable way.**



In general, transportation and the way they are slaughtered are critical points both for animals produced on farms and those caught in the wild. It is necessary to know what happens to each of them after they are removed from the place where they lived, so that Welfare guidelines can be created.

**In aquaculture, transporting animals on ice while they are still alive is the most common slaughter method in Brazil. Another practice used in the process of catching fish is the use of trawling - fishing practice carried out in which a motorized vessel pulls nets made of synthetic material, capturing target species of fishing activity - a method that leads to intense stress and the death of many animals. In both cases, the animals are slaughtered at a very high density and all go through immeasurable suffering until, due to hypothermia or exhaustion, they die.**

In the specific context of fish farming, in addition to guaranteeing good water quality, food and space for these animals throughout their development on aquatic farms, it is essential to ensure that humane slaughter is implemented. For the concept of humane slaughter, we have as a reference the manual on the subject published by MAPA in 2022, which consists of reducing stress to a minimum at the time of slaughter. This process involves stunning and the application of slaughter techniques (e.g. bleeding) before the animal regains consciousness and sensitivity.



A study carried out by Coelho and collaborators, published in the scientific journal *Animal Welfare* in 2022 evaluated how nine slaughterhouses and 30 fish farms in 15 Brazilian states conducted the pre-slaughter handling of these animals. All the establishments evaluated reported carrying out pre-slaughter stunning. However, the alarming fact is that 82% of these establishments reported using thermonarcosis as a stunning technique, a technique that is understood to be non-humane, as the animals do not lose consciousness quickly and completely in the process and can suffer at the moment of slaughter. This study shows that a large part of the fish raised for the food industry still do not have the minimum guarantee of welfare, and are exposed to pain and suffering that can be minimized with the application of simple stunning techniques.

**Regarding life before slaughter, aquatic farm animals often live in high densities, lack of environmental enrichment and water quality that is not frequently analyzed. As a result, high mortality is associated with handling actions shortly after these animals arrive at the farms.**

In addition, these animals are handled by professionals with care and specialized experience that are still lacking, and are kept out of the water for a long time, either during handling periods throughout their lives or during harvesting.

Free-living fish are supposed to have a good life until the moment they are caught. However, every day it is more difficult to say that these animals have ideal living conditions during this period since: (1) there are large amounts of garbage and sewage that find their final destination in the oceans, rivers and lakes; (2) global warming alters rainfall production and water oxygenation; and (3) the construction of dams directly affects the behavior and well-being of fish in addition to environmental disasters such as the leakage of toxic products into the waters.

The population of fish raised in aquatic farms largely lives in cages in Union waters. And, therefore, they are susceptible to the same environmental challenges as free-ranging animals. Our country's legislation is largely deficient in establishing minimum standards of well-being and we believe that this is due to a profound disconnection between our species and the aquatic species that live far from our eyes.

In this way, awareness is crucial to promote positive changes and, in addition, the implementation of specific guidelines and regulations are essential for a fish Welfare program. It is essential to invest in ongoing research to improve breeding techniques, promote education and awareness about fish Welfare and encourage the adoption of sustainable practices throughout the production chain. By doing so, we contribute to the preservation of aquatic ecosystems, fish health and future generations.

## The time has come for humanity to turn its eyes to these species and a global movement is also growing in this direction.

The Aquatic Animal Alliance coalition, of which we are a part, was formed with this goal in mind and its work has been impacting lives with globally influential animal Welfare certifiers. In addition, there is all the excellent work carried out by Sea Shepherd internationally since 1977 for the protection and conservation of marine animals. Nationally, the search for fish Welfare has already begun in the supply chain and we remain hopeful of a real change in the national landscape. Part of our effort at the moment is to collaborate in building solid welfare guidelines for fish raised for the food industry and to work to make them an increasingly common practice among companies that commercialize fish in the country.



# 5. WHAT WE PROPOSE AS WELFARE GUIDELINES



The Program for the Protection and Defense of Aquatic Animals (ProDAA) of Fórum Animal is designed to promote the protection and Welfare of aquatic animals raised for human consumption. Our initial focus will be on farmed and commercialized fish.

**To make this possible, we are going to establish a dialogue with food companies (producers, meat processing plants and retailers), with the goal of getting a formal commitment from these companies to implement good practices that guarantee sustainable techniques and provide Welfare for the fish.**

In this section, we present a proposal for a public commitment for companies to specifically minimize management stress, guarantee quality in space and water when these animals are raised in excavated tanks, guarantee adequate food and nutrition for the species, in addition to eliminating practices that lead to slaughter that does not prioritize welfare.

Based on the commitment made publicly by farmers and retailers, we will join forces to get other food companies to take part in a fish Welfare program. In return, we will help companies with information, support during the transition process and in publicizing the commitment.



The principles and guidelines that will guide all the program's activities are established by us. We will provide the necessary support throughout the process, from the preliminary explanation of fish welfare, the adjustment of the current work to the specific scenario and the implementation of the new work system.

**The fish Welfare policy will have a positive impact on the company's image, giving it value in the market and the sustainable vision that the world demands. We believe that the signatory company will be acting in accordance with more ethical and inclusive practices, setting an example for other companies to sign up to and helping to raise awareness among end consumers.**



# Our Goal



We want to establish an effective corporate relationship with the companies that sell fish and fish by-products in Brazil to propose that they permanently include Welfare for these animals in their operations. As a result of this relationship, we want these companies to publicly commit to adhering to the fish Welfare guidelines we propose in this document, in accordance with a maximum transition time negotiated individually..

# Our approach



Through the corporate relations sector, we develop contact with companies from different segments of the food industry that operate in Brazil and use animals in their production chain, whether in production, processing or sale to the end consumer. The aim of this contact is for these companies to make public commitments to fish Welfare, as we propose.

We foresee specificities for the commitment established by producers, meat processing plants and retailers, three segments of the industry with important distinctions in the type of relationship with animals. Producers establish direct relationships with animals and, therefore, their commitment to welfare involves a detailed set of practices that have been used to date and need to undergo significant modifications.

Meatpackers and retailers develop an indirect relationship with animals, selling what was generated by producers, and their welfare commitment consists of selecting and working with producers who meet welfare guidelines, with the aim of ensuring an awareness about welfare throughout the production chain.

**All the commitments are signed with a maximum deadline for the company to comply with the animal Welfare guidelines, and the progress of this transition is to be publicly reported every year until it is completed.**

We understand that the type of change we propose for companies requires planning and time to adapt so that it is sustainable and permanent. We believe that a good relationship with companies is essential so that we can analyze all the aspects involved and jointly resolve them in the best possible way to guarantee public commitment.



# What we offer

Because it is a relationship, we propose, in return for the public commitment, a partnership with the companies in dialogue with us. This partnership aims to connect producers and retailers with a commitment to promoting animal welfare policies in this production chain. We are able to offer technical support in understanding what animal Welfare is and how to achieve these guidelines, follow up on the process, as well as publicizing and positively highlighting the company's attitude at no cost to the company.

## PRACTICAL EXPERIENCE THAT CAN BACK UP THE COMMITMENT

Fishethobase is a project that proposes an available database that concentrates information, already known and applicable, on Welfare indicators for common farmed species around the world. This information can serve as a basis for routine application on farms, once producers are committed and available.



# 6. COMMITMENT FROM PRODUCERS, MEAT PROCESSING PLANTS AND RETAILERS

In order to hold companies accountable for their commitments to civil society, we must ensure that the commitments they make are communicated in the most objective and meaningful way possible. When a company makes a public commitment to ethics and sustainability, its competitors often look to it as an example. It is therefore essential to maintain positive precedents and high standards. Whenever a company publishes a weak commitment (i.e. commitments with long or indefinite deadlines and confusing and unspecific language), this weaker policy tends to be a benchmark for others, which can jeopardize commitments made in the past by other companies and new commitments that will be announced in the future.

If the company communicates to animal protection organizations/programs that it is committed to animal Welfare, but refuses to reflect this in the language of the public commitment it makes, then we assume that its intentions to comply with such a commitment are low.





# Commitment in practice

Our fundamental concern in the commitment we are aiming for is with the method of stunning and slaughtering fish. This is because it is common knowledge that in Brazil most of the slaughter practiced is done using that methodologies that promote intense and prolonged suffering. Therefore, our first proposal is that fish be immediately, effectively and irreversibly stunned before being slaughtered, following the guidelines recommended by the Organization for Animal Health in its Código Sanitário de Animais Aquáticos (2010). This will offer fish a right that other animal species slaughtered for food in Brazil already have.

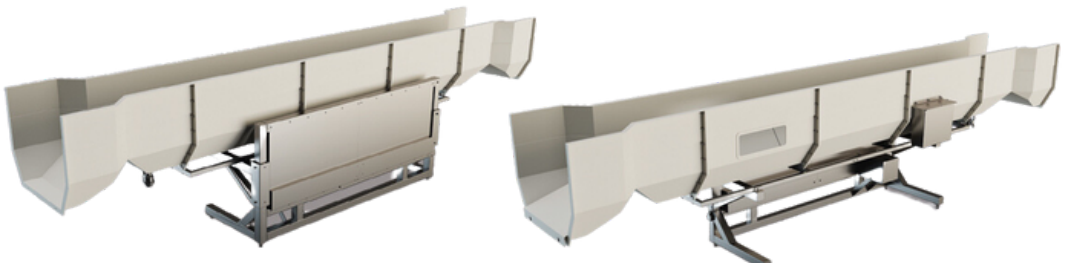
What is immediate and effective stunning when it comes to fish? It is the instantaneous loss (in fractions of a second) of vestibulo-ocular reflex (VOR), opercular beat (OB), equilibrium (EQ) and tail grasp reflex (TGR) at a rate of more than 97% of the stunned individuals, followed by immediate slaughter in order to avoid recovery and therefore suffering when slaughtered.

Some techniques can be used according to the species being stunned. However, there are techniques that necessarily offer prolonged stunning and slaughter times. According to our guidelines, these prolonged stunning techniques should be abolished. Among the most widely used long time stunning techniques in Brazil is thermonarcosis, i.e. submerging fish in ice water. This technique is used both for stunning and for slaughter by asphyxiation lasting longer than 15 minutes (Robb, D H F, Kestin, S C, 2002). For this reason, the thermonarcosis technique is our main target.

Other techniques vetoed by our guidelines are: asphyxiation, exsanguination, evisceration and decapitation without correct sensitization first, carbon dioxide narcosis, bathing in ammonia salt and electrical immobilization.

The latter involves incorrect use of electric current, i.e. not achieving instantaneous loss of vestibulo-ocular reflex (VOR), opercular beat (OB), equilibrium (EQ) and tail-flick reflex (TFR) in more than 97% of individuals (Robb, D H F, & Kestin, S C, 2002).

**To stun fish, the techniques that offer the least suffering are: the use of anesthetics, percussive shock, hydraulic shock, gunshot, electric shock. However, to be suitable, these techniques must be applied according to the species and offer immediate, effective and irreversible stunning prior to slaughter (Robb, D, HF, & Kestin, S C, 2002).**



## INSENSITIZING VATS

Although our primary concern is to guarantee an end to the slaughter that offer a low level of welfare to fish in Brazil, there are other factors that promote quality of life for these animals that will also be the target of our work. The first and perhaps most impactful of these is the assessment of common water quality with minimum standard periodicity.

In these assessments, it is recommended that at least oxygenation, pH, temperature, turbidity, or transparency, salinity and nitrate levels be checked daily, and ammonia being able to be assessed 3 times a week. This is because water quality is a parameter that changes very quickly, influencing the quality of life of the fish so profoundly that it can lead to high mortality in short periods of time (Key to aquatic animal welfare recommendations in aquaculture, Aquatic Animal Alliance 2022).

Even if breeding is carried out in running waters of the Union and dams, adverse events can cause rapid changes in the quality of this water, which could be managed if the evaluation was periodic and frequent, preserving the quality of life of these animals.

Another very relevant factor is the presence of predators in or near the pond, since, as a natural defense mechanism of animals that are predated in the wild, the presence of danger motivates fear and reduces the degree of Welfare of these animals according to the principle of the 5 freedoms promoting increased swimming behavior, cortisol coordination and even a reduction in feed conversion of these animals (Brambell Report 1965).



Harvesting and handling must also be carried out in accordance with animal Welfare precepts. We emphasize that these procedures must be carried out by highly trained staff and last as short a time as possible, being immediately followed by stunning and slaughter at the place of harvest, if practicable, or ensuring that these animals are transported in quality water for the shortest time possible. We believe that these limits ensure that crowding, exposure to air and light, and a decline in water quality are minimized ([FAI Academy, Tilapia Welfare Course](#)).

## Producers' commitment language reference:



"Our company is committed to producing and marketing only fish with high animal Welfare standards and to preventing the cruel slaughter of these animals. We will follow the guidelines below, complying with the scientifically recommended specificities per species for all fish (owned or not), completing the transition within the respective deadlines. We will report on the progress of this commitment annually and publicly.

# Guidelines: practices and deadlines



**1**

End of slaughter without correct stun.

**2**

Establishment of an assessment of water quality according to parameters and frequencies: once a day for oxygenation, pH, temperature, turbidity or transparency, salinity and nitrate indices and 3 times a week for ammonia.

**3**

Eliminate the presence of predators of the cultivated species in or near the pond.

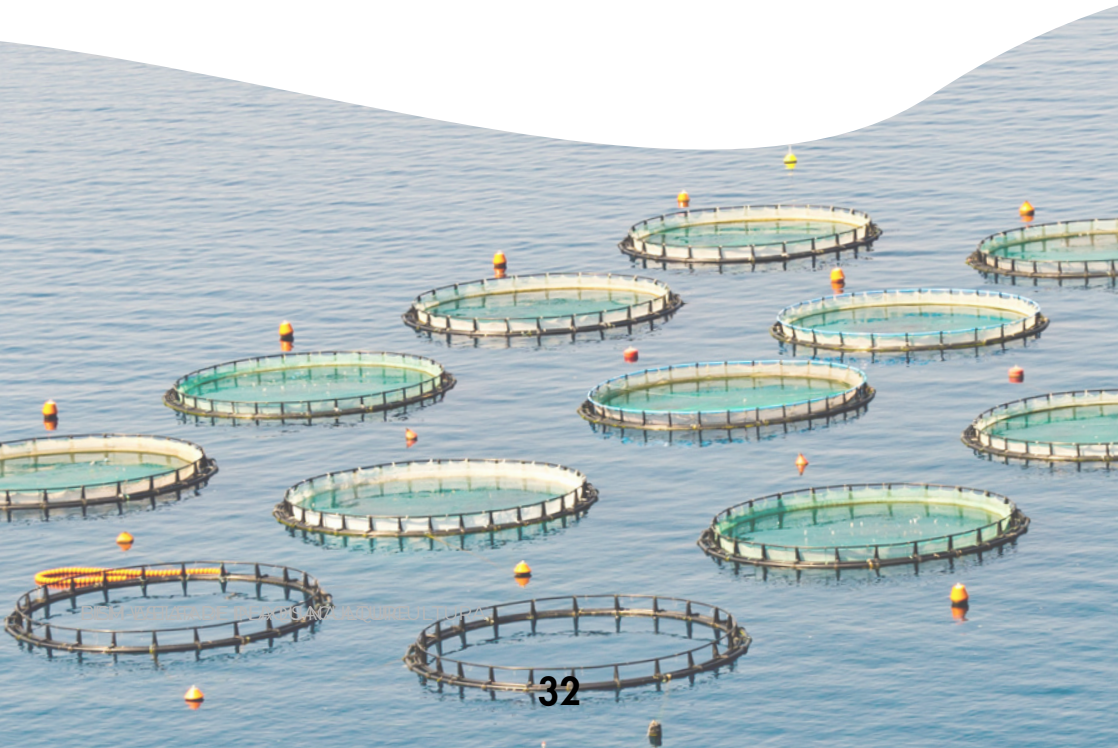
**4**

Maintain a density considered appropriate for the species and stage of rearing.



# Reference language for the commitment of meat processing plants and retailers

“Our Company is committed to only selling fish with animal welfare standards from suppliers who use humane slaughter techniques. The accepted pre-slaughter stunning techniques are: electric stunning, hydraulic shock, the use of anaesthetics or percussive shock. We will complete this transition within a maximum of 10 years from the date of commitment and will report on the progress of the commitment on annual basis.”



## 8. FINAL CONSIDERATIONS

Aquatic animals are among the most neglected of those raised in the food industry. There is still little empathy for them. Particularly in the food industry, hundreds of millions of fish are bred and slaughtered every year around the world, which is mostly done without regulations or guidelines that consider the Welfare of these animals by parameters that we already know are possible. Brazil is one of the world's leading producers of fish, especially tilapia, and the national regulations that guide handling techniques and humane slaughter don't even explicitly include fish. Quality scientific knowledge on this subject already exists, but the political will for change seems to be lacking. We have drawn on this knowledge to talk to producers, meat processing plants and retailers across the country to get them to commit to including Welfare and humane slaughter guidelines for fish involved in the production chain. These guidelines and their foundations have been described in this document. With this, we want to guarantee a minimum of protection and respect for these animals. We believe that every Welfare commitment made will be a step towards a fairer human-animal relationship.



# GLOSSARY



**Cruel slaughter:** slaughter carried out using techniques that do not provide the least possible suffering to the animal, usually subjecting the animal to prolonged suffering.

**Humane slaughter:** slaughter carried out using techniques that cause the least possible suffering to the animal and for the shortest possible time.

**Slaughter:** the process by which the animal to be consumed is put to death.

**Aquaculture:** refers to the breeding of any organism that grows in water, such as fish, molluscs, crustaceans, among others.

**Welfare:** perception of health in mental, emotional, social and physical terms.

**Consciousness:** the state in which an organism lives, experiences or understands aspects or the totality of the world around it.

**Harvesting:** capturing, collecting aquatic animals for any purpose, whether they are being finished for pre-slaughter handling or for handling during the rearing period.

**Effective:** we consider a process that achieves unconsciousness at rates above 97% to be effective.

**Immediate:** less than 2 seconds.

**Electrical immobilization:** a procedure that does not promote immediate and/or effective and/or irreversible unconsciousness, due to the incorrect use of electric current.

**Unconsciousness:** absence of consciousness. For this document, we consider an aquatic animal to be unconscious when there is no vestibulo-ocular reflex, no opercular beat, no maintenance of balance in the water and no response to tail grasping.

**Electrical stun:** a procedure that promotes immediate, effective and irreversible unconsciousness through the use of electric current.

**Stunning:** a procedure to promote unconsciousness.

**Irreversible:** even if you wait any length of time, the animal still won't return to sensitivity.

**Mortality:** deaths occurring during a period.

**Fishing:** the extraction of aquatic organisms from the environment in which they have developed for various purposes.

**Seafood:** includes fish, crustaceans, mollusks, amphibians, chelonians and mammals from fresh or salt water, used for human consumption.

**Fish farming:** only concerns the breeding of fish.

**Sensitivity:** the presence of a positive response to any of the previous assessments.

**Thermonarcosis:** submersion of fish in water with ice, or only in ice, promoting delayed insensitivity, although effective and often reversible. It may or may not lead to death, but it only reaches death after more than 15 minutes of immersion.

**Transport:** moving the organism between its place of origin and the destination where it will be stunned and slaughtered.

**Free-living:** a term used in this document to describe animals when they live freely in a natural environment, not submitting to or needing humans for their survival.





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