

The ornamental fish industry (IOF) in the new Anthropocene: an eco-modern approach

ALL PHOTOGRAPHS
BY THE AUTHOR

Dr. Gerald Bassleer, Director, Bassleer Biofish, Belgium

Our industry of ornamental fish (IOF) began to develop in the 1950s and is, thus, still a young industry. During this time, and particularly during the last few decennia, many things have changed in our human thinking about our world, thanks to our experience, study and science. For instance, we've entered the Anthropocene era, or Age of Humans.



Good water quality, such as shown here near the Lobe waterfall in Cameroon, means that the health of the fish collected, either for food or aquaria, is not compromised.

If mankind wants to continue to progress and survive in this world we will have to continue to change our attitudes and actions towards the climate, biodiversity, land use, use of freshwater, toxins, etc. If we want to continue keeping fish (and shrimp, etc.) as an industry, or as a hobby, it will also be important that our industry of ornamental fish (IOF) takes appropriate actions and starts to show 'respect' for our planet. Below are some reflections from an eco-modern standpoint.

Homo sapiens/Homo evolutis and the IOF

Man used to hunt and, later on, used animals, such as fish, for farming purposes. The keeping of fish as 'ornaments' was

introduced by keeping colored carps, but the keeping of fish in aquaria only really started in the 1900s. This means that, in only 100 years, we've had to learn how to keep fish (and other animals) as a joy/pet/ornament. It is only recently, i.e. over the last few decennia, that we've changed our mentality in the way we keep our fish as a result of gaining more knowledge of them as species, and gaining respect for their welfare. However, too many fish are still kept in too-small aquaria, or with too many others in aquaria fitted with filters that are too small.

We, the evolved *Homo evolutis* (1 - see References), have already developed many good technical tools to keep fish alive for many years, but there are still too many human errors (e.g. lack of knowledge) and these make us susceptible to attacks by animal rights activists, not only in the EU, but also now in Asia and the USA.

The ethics of keeping fish as pets is still a difficult issue, depending on culture. For example, this can be seen with so-called painted fish, which are injected with colored dyes. We all know that such fish are created to generate extra business... but it gives our IOF additional negative attention, since we are blamed of animal cruelty. The fish that are bred and sold with balloon bodies, or parrot-face heads, are also seen as badly created varieties by animal rights organizations. This puts us all in a corner of defense, as is now happening in the world of dog breeding.

Genetically modified organisms (GMOs), including fish, play an important role in DNA studies and are now common in many countries (except the EU). Many hobbyists call them 'Frankenstein fish' because of their very spectacular unnatural colors. They are also still regarded as posing a potential risk (2), which, once more, shows our IOF in a negative light. Already, many hobbyists are campaigning against these fish.

In many countries, there are specific regulations regarding which fish can be imported or kept in an aquarium. Some of these species may be endangered, invasive, poisonous, too big, etc. If we want to have a future and be able to continue keeping pets, we will have to show respect (for the fish and the laws), be able to negotiate with animal right groups, explore ways in which we can be proactive and begin to select what we trade in.

The IOF and biodiversity

Up to 30-40 years ago, we collected everything that we could catch

for food, or as pets. Our impact is (was) very little, though, owing to our small hands and nets; we did not use big boats or other technical tools, either. Again, we have learned through experience, study and science that we have to respect the habitat and its people.

Many natural habitats are destroyed by other industries or by civilization (1/3 of freshwater fish populations have disappeared). A few examples: *Homo sapiens* wiped out most local animals in Australia and USA; countries like China, Congo or Brazil built (too) many dams (2 dams/day during the last 50 years) to generate electricity, but with massive destruction of natural habitats and displacement of local people. Yet, our IOF is still 'easily' blamed for emptying rivers, lakes and coral reefs, since we are vulnerable with our 'fragile live fish'.

Although, in reality, very little damage has been caused by our industry, we will still have to comply with the sustainable use of natural resources and, in certain cases, help to restore fish populations through specific fish breeding projects. In the near future, we will hear more about new projects starting up in countries like Indonesia, India, Brazil and Zimbabwe. Anyone involved in collecting fish from the wild will also have to comply with specific regulations and our industry should support such projects. The financing of such projects can only come from our industry because biodiversity can only be saved with the help of \$\$\$... and our respect.

The IOF and climate change

As soon as *Homo sapiens* began using fire, we discovered the potential of fossil resources, later evolving superior communication skills (writing!), developing the digital world, etc. In essence, we became the 'God' species (3).

Luckily, we have the experience, knowledge and science that will help us, *Homo evolutis*, save our planet. As the IOF, we play a role in using advanced technologies: recycling water, using low-energy lamps and pumps, employing thermal exchange techniques



River pollution (not caused by our industry) can give rise to poor water quality in holding facilities, especially in lesser developed regions.

of used aquarium water, recycling all packing materials, etc. In many countries, due to geographical location, it is not (or hardly) possible to obtain enough electricity from solar panels or windmills, depending, instead, mostly on fossil resources (i.e. electricity production in Germany is still 30% from brown coal but, luckily, the use of renewable energy is already surpassing this figure).

Some countries that are still in development (except the Maldives, which employs 100% renewable energy) have no choice but to start with fossil resources, just the way we did in the 1800s. Unfortunately, this causes enormous pollution and unnecessary deaths in many cities. Solar power plants are only interesting in deserts or areas where there is plenty of sun all day (e.g. Australia). Windmills have great potential in certain areas (e.g. the North Sea around Belgium and England) where there is a permanent wind and a lower impact on birds. The use of biofuels is another option, but this takes up too much land and has no climate benefits.

In my opinion (and that of many other scientists), it is time that, in areas with dense populations and lack of good natural resources, we should invest in small nuclear fission reactors (they are safe and cheap to use, and consume our storage of nuclear weapons)

(4), to avert our human impact (our ecological footprint) on our planet and its atmosphere (i.e. France allocates 80% and South Korea 93% to advanced nuclear energy, with 0.00 casualties). Unfortunately, due to negative press and misuse by politicians, investment in nuclear plants has been delayed in many countries (especially in Germany and Sweden).

Modern husbandry techniques and equipment make the establishment and maintenance of attractive and 'healthy' aquaria such as this one a realistic proposition for any enthusiast.



Other countries, principally those that are beginning to play an important role in the world economy, like China, India and Russia, are making big investments in modern, safe nuclear plants and are going to out-compete (with very low-cost energy and a small ecological footprint) many western countries. We, as smart *Homo evolutis*, have also learned (invested) to make our dirty cars 'clean' vehicles (5). As an IOF we can show respect when we use advanced energy-saving methods!

The IOF and its impacts on land and freshwater

Just like any other industry, we have an impact on land and coastal areas. That mankind has over-exploited certain areas, e.g. through deforestation, is a lesson to learn in order to plan better for the future (6).

Happily, our industry, by collecting wild fish, is acting against deforestation, since the clearing of land that results in its absence harms the fish populations. Through the collection of wild fish, our IOF has contributed to the protection of several natural areas, as endemic fishing villages are now regarded as the best guardians of nature (ref. WWF-South America).

Many (badly informed) hobbyists have raised the issue that buying wild fish is not good and that tank-raised fish should be preferred. In the very near future, we have to take on opportunities to promote and support the wild collecting of fish, but this can only be done with respect for, and investment in, the sustainable use of natural resources (and its people).

That we have to use freshwater is unavoidable and, of course, it's easy to get in many countries. But, will it remain easy and affordable in the coming decennia? We already know that this will become critical. To avoid or minimize our ecological footprint, it is a good choice to use the waste freshwater from fish farms for growing vegetables (e.g. as in Israel), while, to avoid a heavy ecological footprint, the breeding of marine fish in tropical coastline locations (in tanks or cages) is much more recommendable than breeding them inland somewhere in a western country (3).

In general, the breeding of fish, shrimps, corals etc., as well as the propagation of plants, should be supported in tropical countries where there is less need for electricity (no heating, fewer lights, good water), more potential use of natural water and no ecological footprint for coral farming in the ocean. In fact, the opposite applies, since these activities result in the consumption of CO₂, provision of work, much-needed income for developing countries, etc.

Some people claim that the air transportation of fish creates a heavy ecological footprint, but this is not true, since fish are mostly regarded as small cargo and are most likely loaded with passenger goods or other cargo. Many hobbyists in Europe also prefer to buy local tank-raised coral, but it would be interesting to see what the ecological footprint would be if it were shown attached to their purchase. Respect for 'tropical' farming will become a must.



Is this what we are likely to be keeping in 2030?

The IOF and toxins

When we keep fish we have to use products to control water quality, to prevent the spread of diseases, to control disease outbreaks, etc. In many countries, there are already regulations that control waste water, and several companies have had to comply heavily (especially in the Netherlands).

The sale of certain medications, such as those that contain copper, are forbidden, since it is discharged with waste water into nature, killing plants. Antibiotics can only be used under strict control (and, sometimes, they are only available under prescription).

Further rules and regulations are to be expected, so it is time that we use other tools to enhance our fishes' health. In this respect, our industry has already taken steps in the right direction with the application of probiotics and immuno-stimulants.

The IOF and future management

The future of our 'Industry of Ornamental Fish' lies in our hands, and to avoid any unexpected or unacceptable regulations, we will have to be proactive. I advise every businessman in the fish industry to remain in close contact with their local authorities, since most authorities lack correct information regarding our industry and, therefore, sometimes make crazy decisions.

It is up to OFI to spread the good news and correct information, because, up to now, it is mostly kept within the organization and its members. It is better to prevent than to cure! As long as we, *Homo evolutis*, show respect for the many issues raised in this article and plan good management strategies, we will succeed (7). ■

REFERENCES

The full list of references highlighted by numbers in this article, i.e. 1-7, may be obtained direct from Dr Gerald Bassleer at: info@bassleer.com