

fair-fish international association
Annual report 2017/2018



Can the welfare of farmed fish be improved—and if so, how?

1. The association and the people behind

The fair-fish international association (fair-fish.net) founded in 2010 reports on its sixth business year. The association is designed as an international umbrella organisation and has above all the role of the "Guardian of the Grail". In doing so, it carries out tasks of basic development, with as little operational and campaigning expenditure as possible.

1.1 The board of directors

The association, domiciled in Winterthur, Switzerland, is run by a board of directors, which in the year under review consisted of the four founding members Katrin Vogelbach, Billo Heinzpeter Studer, Army Algader and Nina Lisann Otter, plus Jenny Volstorf and Oliver Seeger.

1.2 Management and employees

The obligation of the board members is limited to the passing of resolutions and the control of management and finances.

Billo Heinzpeter Studer, as the association's president, is responsible for management, external representation and the management of projects, within the framework of the Rules of Procedure.

The employees are mentioned in the following project reports.

In order to adjust the financial year to the calendar year from 2019 onwards, the report covers a long year, from July 2017 to December 2018 (on the delay of the report, see 2.2, point 1).



Katrin Vogelbach,
Urdorf ZH, Designer,
*1936, co-founder of
fair-fish.ch in 1997
(board member till end
of 2017).



Billo Heinzpeter Studer,
president, Monfalcone,
social psychologist/Ip-
ublicist, *1947, founder
and 2000-2012 director
of fair-fish.ch



Army Algader, Grado,
photographer and illus-
trator, *1966



Nina Lisann Otter,
Los Angeles, Mathema-
tikerin, *1983



Oliver Seeger,
Winterthur, co-presi-
dent fair-fish.ch 2008-
2018, *1962



Jenny Volstorf,
Berlin, psychologist
Dr. rer. nat., *1982
reserach coordinator
FishEthoBase

2. Appearances

1.3 Guidelines commission

The guidelines commission consists of three persons:

- Peter Jossi, food engineer, certification specialist, Basle
- Peter Schlup, ethologist, Berne
- Billo Heinzpeter Studer

No activity in the year under review.

1.4 Advisory scientific board

The advisory board so far consisted of three experts in the field of fish welfare/ animal welfare:

Prof. em. Rudolf Hoffmann †, Munich;
Prof. em. Detlef Fölsch, Witzenhausen;
Prof. Helmut Segner, FIWI, Univ. Bern.

In September 2019, our Fish EthoGroup elected a new advisory scientific board, which will also act for fair-fish international:

- Prof. Culum Brown, Sidney, Australia
- Prof. Becca Franks, New York, USA
- Prof. Lluís Tort, Barcelona, Spain

No activity in the year under review.

1.5 Audit

The general assembly confirmed trustee Erwin Fuchs from Baar ZG as auditor and noted with thanks that Annette Ringier will again bear the auditing costs.

2.1 Presentations

- Presentations on FishEthoBase: → p. 5
- 08.04.2018: Slowfood Fair Stuttgart: Podium on "My fish and me"
- 10.06.2018: Kenako Africa Festival, Berlin: Podium on «How does European fish consumption contribute to the problems in Senegal?»
- 03.09.2018: Summer Shoal, Monfalcone: two keynote speeches on fairness in fisheries

2.2 Meetings and contacts

- 12/2017- 04/2018 and 08/2018- 05/2019: temporary management of the association fair-fish Switzerland (fair-fish.ch), which delayed administrative work for fair-fish international.
- Team meetings of all collaborators: 02.09.2017, 11.03.2018, 04.09.2018
- 01/2017-12/2018: Visits to and advice on 50 fish farms (EU, Turkey, Panama, Chile)
- 02-04/2018 Consulting fish purchasing guidelines of the city of Vienna.

2.3 Media

- 10/2017 Contribution to an article about fish welfare in www.tierwelt.ch
- 12/2017 Article about FishEthoBase in veterinary review www.dr-vet.net
- 01/2018: Interview Aargauer Zeitung
- 07/2018 Interview on overfishing in: Der Tierschutz, www.bv-tierschutz.de
- 09/2018: Interview fishfarming (srf.ch)
- 20.-21.12.2018, Contribution to articles on fishing, fish welfare (higgs.ch)
- Chapter on fishing in "Haben Tiere Rechte?" (ISBN 978-3-7425-0450-0)
- Supporting publications of fair-fish.ch



3. Fish ethology database «FishEthoBase»

3.1 Goal

The aim is to create a global database that systematically summarises the scattered ethological (i. e. behavioural) findings on fish species and makes them publicly available, as a basis for species-appropriate fish farming and as a stimulus for further research. The preparatory work started in 2013.

3.2 Achievements 2017-2018

The total number of published short and full profiles that we had set ourselves as a goal could not be reached. Firstly, we deliberately took more time than planned for the internal review process when creating new profiles. On the other hand, we invested around one third of the budgeted working hours in the complete revision of the existing profiles. This was prompted by the numerous suggestions we received in the stakeholder dialogue in spring 2017. We had already made initial adjustments in the previous year. We decided to make further adjustments as a matter of priority before many additional profiles were created, which would then also have to be adapted to the new, higher quality. With the short profiles, the main focus was on adapting the entries to a revised format and checking the FishEthoScores. The full profiles received a completely new, dynamic format with an improved overview for the users. The harmonisation of all existing profiles is still in progress.

Ethological full profiles

At the end of 2018, eight full profiles were available online: Atlantic salmon, Nile tilapia, Pacific whiteleg shrimp, Gilt-head seabream, Sea bass, Pike perch, Perch, and Rainbow trout. Each profile consists of a summary and interpretation of the studies found (findings, with references) on a variety of ethological and fish welfare criteria, fish welfare recommendations based on these criteria, the short profile and a summary of the findings for a wider audience or as a first introduction to the welfare problems in farming of the species concerned. On the basis of experience to date, we currently expect to produce two new full profiles per year.

Ethological short profiles

At the end of 2018, 42 short profiles were available online. Each short profile focuses the presentation and interpretation of the studies found on ten core criteria:

- Horizontal spatial needs
- Vertical space requirement
- Migration or habitat change
- Reproduction
- Social behaviour
- Aggression
- Substrate and retreat
- Stress
- Malformations
- Slaughtering

An important part of the short profile is the FishEthoScore. First, in the manner of a risk assessment, each criterion is assessed in three scores:



The FishEthoBase research group, from left: Billo Heinzpeter Studer, Monfalcone, director; Dr. Jenny Volstorf, Berlin, research coordinator; Dr. João Luis Saraiva, Faro; Dr. Maria Filipa Castanheira, Vienna; Dr. Pablo Arechaval-López, Mallorca; Sebastian Scholz, Chemnitz, data-base and website management (not in picture).
 (Photos: Christoph Dill (4), Irmay Algader)

- How likely it is that the fish of the species concerned will experience fish welfare under normal farming conditions (Likelihood: high or low).
- The potential for fish welfare of the species concerned under improved farming conditions (Potential: high, medium, low).
- How certain is the knowledge base for assessing Likelihood and Potential (Certainty: high, medium, low).

The sum of the three scores in the ten criteria yields the FishEthoScore as the first raw measure of the aquaculture suitability of a fish species.

Each short profile is preceded by a brief summary of the main fish welfare problems encountered in the farming of the species concerned and of the possible improvements.

In addition, the degree of domestication of the species and the extent to which wild forage fisheries may be avoided in the feed composition for the species. On the basis of previous experience, we currently expect to produce around 25 new short profiles per year.

3.3 Stakeholder involvement

We actively seek critical engagement with our research work, at various levels:

• Stakeholder Dialogue

After the implementation of the numerous suggestions from the dialogue in spring 2017 occupied us for almost the entire reporting year, we postponed the next dialogue until 2019.

• Presentation at congresses

We were invited to present the FishEthoBase at the following congresses:

- Behaviour 2017, July/August, P-Lisbon (poster)
- Summer Shoal, Sept. 2017, I-Monfalcone (talk and posters)
- Intl.. Conference on Applied Ethology, Nov. 2017, Freiburg, Germany (talk)
- FBA Course Aquaculture HAFL, Nov. 2017, CH-Zollikofen (talk)
- SIBIC Congress, June 2018, P-Faro (2 talks, 2 posters. 1 workshop)
- UFAW Congress, June 2018, UK-Newcastle (poster)
- Summer Shoal, Sept. 2018, I-Monfalcone (talks and posters)
- European Aquaculture 2018, October, HR-Dubrovnik (poster)
- CCMAR Workshop, November 2018, Faro (talk)
- ASAB Winter Meeting 2018, December, London (poster)

• Summer Shoal on Fish Ethology & Welfare

In order to create an intimate setting where scientists and practitioners can focus on questions of fish welfare in aquaculture for two days, we organised the first Summer Shoal with 34 participants from twelve countries at Marina Julia near Trieste in early September 2017. At the beginning of September 2018 we repeated this event with 28 participants from eleven countries.¹

The annual Summer Shoal is an intensive dialogue between scientists, fish farmers and experts from authorities and NGOs, from which we ourselves also derive great benefit for our own further work.

3.4 Cooperation with research institutes

Since the beginning of the work on FishEthoBase we have been looking for research institutes with whom we could exchange and cooperate more intensively on our topics. In the second attempt the success came.

In February 2016 we visited the aquaculture group of the ZHAW Wädenswil, near Zurich, which is also researching on fish welfare and to which we therefore gave online access to our internal library. The cooperation proved to be one-sided. In 2016 and 2017 we contacted different institutes at the universities of Trieste and Udine, as at that time the intention was to transfer the FishEthoBase group into an own research institute at Marina Julia in north-eastern Italy. As we did not find any awake interest at both universities, we buried this plan.

At the end of 2017, we signed an agreement with the university Instituto Mediterráneo de Estudios Avanzados

(IMEDEA-UIB/CSIC) in Mallorca, where our colleague Pablo Arechavala-López works. The cooperation with IMEDEA enabled us to use the laboratory and net cages for our own experiments.

In the summer of 2018 fair-fish international agreed with the Centro de Ciências do Mar (CCMAR) of the University of the Algarve in Faro on a cooperation and on moving the headquarters of the FishEthoBase group to CCMAR. The supervision of the research work remains with fair-fish international, based in Switzerland.

3.5. Institutional safeguarding

From the beginning it has been our goal to create a long-term institutional basis for the FishEthoBase by the end of 2019 at the latest. With the partnership between fair-fish and CCMAR, this framework is now already given as of January 2019:

- The FishEthoBase will be integrated into the new Fish Ethology and Welfare Group (FishEtho-Group)², an association based at CCMAR in Faro.
- The FishEthoGroup consists of the current six employees of FishEthoBase. Team leader as of 2019 is Dr. João Luis Saraiva.
- The association fair-fish international guarantees the continuation of the research work so far. The founder and former head of the FishEthoBase, Billo Heinzpeter Studer, continues to work as guarantor in the FishEthoGroup.
- The FishEthoGroup develops further products besides the FishEthoBase.

¹fishethobase.net/en/summer-shoal-2018/

²fishethogroup.net

3.6. Outlook 2019: Broader perspectives

• FishEthoBase

By summer 2019, the harmonisation of the 42 short profiles with the new format should be completed. Any differences between the eight full profiles published to date will also be resolved—and further new short and full profiles are in the works.

From the beginning, the FishEthoBase was intended as a tool to improve fish welfare in practice:

• Our own experiments

Thanks to the collaboration with IME-DEA and CCMAR and the free use of their facilities, we are able to conduct our own experiments to investigate questions that we encounter in our research. Three experiments are currently underway:

- The extent of tank coverage and its effect on the welfare of tilapia.
- Habitat enrichment in farmed Sea bream and Sea bass.
- Validation of the determination of fish welfare by acoustical tracking.
- Testing a new stunning method for trout (alternative to electric stunning, which not all farms wish to use).

• Consulting (CareFish)

In 2017 the opportunity to become a consultant based on the FishEtho-Base opened up for us. The Silicon Valley-based foundation The Open Philanthropy Project was looking for partners to develop fish welfare criteria for existing aquaculture certification schemes. The international label Friend of the Sea (FOS) was immediately willing to cooperate with us. Since the beginning of 2018, we have been recording the sta-

te of fish welfare in FOS-certified fish farms on site and making suggestions for improvements to the farmers. During a second visit half a year later, we clarify what could be implemented and how, and why not. Based on the results of the consultation at around 50 farms worldwide we propose FOS feasible and auditable fish welfare criteria. After completion of the project with FOS (expected spring 2020) the Fish-EthoGroup will offer its advice also to other farmers.

• Training and development

The consulting activities so far show that fish welfare training is lacking on many farms. In addition, the practical question arises of how auditors without the appropriate training should assess the fish welfare on a farm. The FishEthoGroup will therefore develop a course to train farmers and auditors.

From the advice given so far, questions of development will also arise, for example of elements for substrate, retreat and play as well as procedures for humane slaughter. The FishEthoGroup wants to extend its consulting services to these questions in the future.

4. The fish test

The fish test fair-fish international is taking care of gives purchasing recommendations and background information on meanwhile 157 species of fish.¹ In contrast to usual fish recommendation lists, our fish test does not only assess the condition of a fish stock, but also the fishing method and its effects on the environment, on the by-catch of other species, and on the extent of the agony for the caught fish. Animal welfare criteria are therefore assessed in addition to ecological criteria.

Those who use the fish test, which is structured like a learning program, will gradually learn why the assessment of a certain species turns out to be „red“, „yellow“ or „green“ and can change from criterion to criterion. But in the end, the best rating „light blue“ is only achieved by those who eat fish at most once a month—because even the „greenest“ fish will be overfished if everyone jumps at it!

For 2018-2019 we had planned to translate the fish test into English and to add fish from aquaculture. Unfortunately we had to postpone this project, because both the editor Janika Lutz and the president had to step in at fair-fish Switzerland as an emergency.

¹ For the time being published in German only, on the website of fair-fish Switzerland: www.fair-fish.ch/fischtest

5. Finances → pages 8 and 9

5.1 Revenues

In the fiscal year from July 2017 to December 2018 the association achieved revenues of CHF 368'464, which is more than two and a half times as much as in the previous year. It has to be taken into account, however, that the year under review embraced 18 months, in contrast to the usual 12 months of the previous year.

The contributions to the FishEthoBase accounted for 32% of revenues (in the previous year 89%). The largest share (58%) of revenues consisted on the donation from The Open Philanthropy Project for the new two-years project Carefish, of EUR 375 000, of which we put on hold CHF 218'000 for the continuation of the project in the next year.

Services rendered for third parties generated only 3% of revenues (previous year: 8%); this source of income had been important in our pioneer time but is hardly necessary any more.

5.2 Expenses

In terms of expenditure, the Carefish project also predominates (40%), followed by the FishEthoBase with a share of 37% (previous year: 81%). Travel expenses and administration made up 11% of the expenditure (previous year: 14%).

5.3 Labour costs

To the 6 collaborators of the FishEthoBase, the Fish Test Editor and an external fundraiser, a total of CHF 287'149 fees have been paid (including the value

added tax for collaborators with residence outside of Switzerland), on the basis of EUR 27 per hour.

5.4 Small annual profit

The annual profit of CHF 706 (in the previous year CHF 4 841 loss) increases the funds of the association to CHF 17 654.

5.5 Voluntary efforts

Not included in the financial statement are about 820 free of charge hours of work, namely:

- 754 hours of the President, of which 536 for managing the FishEthoBase and 218 hours for the business management of the association;
- 66 hours of the board members for studying documents.


Would fees in the usual amount be paid, i.e. at least EUR 45 per hour, the partial waiver of the collaborators amounts to about CHF 190'000, and would the hours worked voluntarily be compensated at the same rate, the total waiver amounts a CHF 232'000, a donation to the association made by all its active participants.

7. Thank you!

For their continued support, I thank my colleagues on the board: Katrin Vogelbach, Arny Algader, Jenny Volstorf, Nina Otter and Oliver Seeger. For the challenging and fruitful cooperation in the team of the FishEthoBase, I thank Jenny Volstorf, João Luis Saraiva, Maria Filipa Castanheira, Pablo Arechavala-López and Sebastian Scholz, as well as Janika Lutz for the collaboration on the fish test.

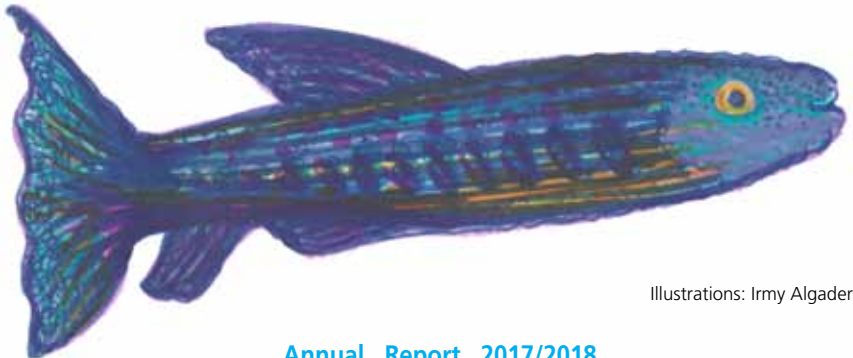
A big thank you to all Institutions who supported our work in the year under review: The Open Philanthropy Project, the Federal Office for Food Safety and Veterinary Affairs, Berne, and the two Basle based foundations Dreiklang and Edith Maryon.

And many thanks to all who use the FishEthoBase, critically comment on it, and raise awareness of it.



Billo Heinzpeter Studer
President fair-fish.net and
Director FishEthoBase
Monfalcone and Winterthur,
25 November 2019

Translated from German by the author,
supported by DeepL.com



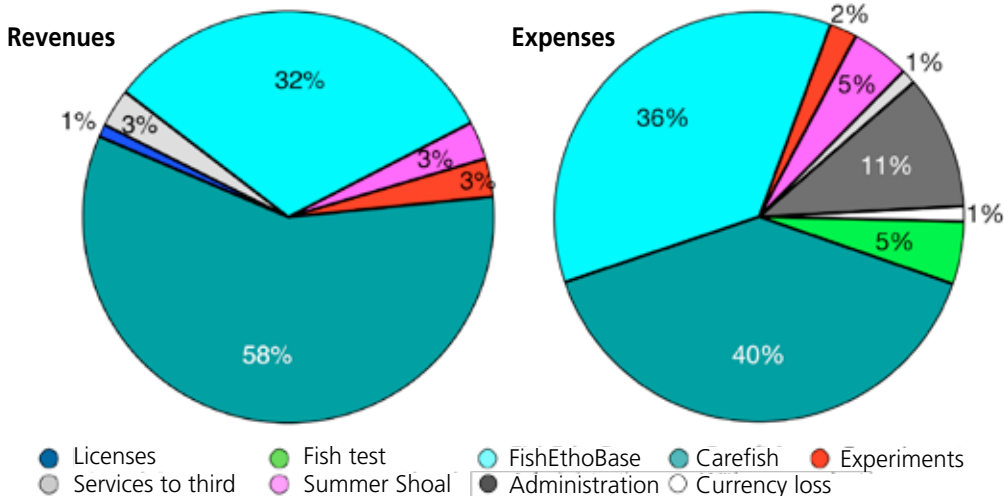
Illustrations: Arny Algader

Balance sheet of fair-fish international association per 31.12.2018

Assets	31.12.2018	30.06.2017
Liquid assets (bank account, cash)	250234	40924
Accounts receivable		
Trade receivables	1270	1579
./. Provisions for doubtful debts	0	0
Other current assets	0	0
Total working capital	251504	42503
Fixed assets	0	0
Total Assets	251504	42503

Liabilities	31.12.2018	30.06.2017
Creditors		
Related parties	0	0
Third parties	6845	0
Other liabilities		
Accrued expenses	9005	25554
Provisions	218000	0
Total liabilities	233850	25554
Association's assets per 31.12.	16949	21790
Annual profit	706	-4841
Total equity	17654	16949
Total liabilities	251504	42503

Approval recommendation by the auditor Erwin R. Fuchs, Baar, 05.11.2019



Income statement, 01.07.2017–31.12.2018

Revenues	2017/2018	2016/2017
Licence fees	2 981	1 270
Free donations	0	0
Licence fees and free donations	2 981	1 270
Donations fish test	0	3 000
Donations FishEthoBase	116 525	126 258
Donations Carefish	214 904	0
Donations experiments	10 000	0
Earmarked donations	341 429	129 258
Remunerations for services to third parties	4 645	7 600
Reimbursements of expenses for these services	7 306	4 512
Participation fees Summer Shoal	12 103	0
Interest income	0	69
Total other income	24 054	12 181
Total revenues	368 464	142 709
Expenses	2017/2018	2016/2017
Senegal project	0	-142
Fish test project	-11 846	-4 085
FishEthoBase project	-131 766	-119 737
Carefish project	-145 361	0
Material costs for experiments	-7 955	0
Material costs fish test (data purchase)	-6 292	-3 163
Summer Shoal expenses	-16 963	0
Total project expenses incl. staff costs	-320 183	-127 127
Protection of name, trade mark, domains	-780	-31
Publications, fundraising	-2 559	0
Total direct expenses	-323 522	-127 158
Gross earnings	44 942	15 551
Share of office rent	-6 234	-3 242
IT costs (incl. acquisitions and repair)	-9 444	-3 960
Other office expenses, membership fees	-1 948	-407
Travel expenses, accomodation (lump sum)	-9 720	-6 480
Travel expenses, train	-7 456	-3 391
Travel expenses, other	-1 540	-1 240
Legal and consulting fees	-1 849	0
Representation, advertising	-811	-1 477
Bank account charges	-827	-195
Administration costs	-39 829	-20 392
Operating result	5 112	-4 841
Extraordinary expenses (currency loss)	-4 406	0
Annual profit	706	-4 841



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Rainbow trout
farming facility
(Photo: Studer/fair-fish)