

CURRICULUM VITAE

Name: Friederike Sevilla Ziegler
Home address: Slättåsv 6, 438 34 Landvetter, Sweden
Born 15.03.1972 in Germany, resident in Sweden since 1975
Employer: RISE Food and Agriculture, Göteborg, Sweden
Academic title: Associate Professor
Current position: Senior scientist



Most recent academic degrees

2018 Associate Professor, Göteborg University
2006 PhD thesis at Göteborg University,
Dept. of Marine Ecology: “Environmental Life Cycle
Assessment of seafood products from capture fisheries”

Most recent employments

2015- Senior scientist at RISE Research Institutes of Sweden, leading the seafood sustainability group
2006-2014 Senior scientist at SIK The Swedish Institute for Food and Biotechnology Gothenburg, doing research on seafood sustainability.
1999-2006 PhD student at SIK. Two parental leaves 2003 and 2005 (12 months each) and parttime work (60-90%) between 2003-2014.

Research

2018-2020 Project manager at RISE of the project “Carbon footprint of Norwegian seafood products” in collaboration with SINTEF Ocean and Asplan-Viak, funded by FHF
2017-2020 Coordinator of project mapping environmental impacts of global seafood production, identify and target important gaps (Swedish Research Council Formas)
2017-2018 Coordinator of project synthesizing climate and nutrition data for seafood consumed in Sweden (Swedish Research Council Formas)
2016-2021 Partner of Formas-funded project SEAWIN mapping and improving the environmental sustainability of seafood consumed in Sweden (Swedish Research Council Formas)
2015-2019 Partner SUSFANS, responsible for seafood part of the project (H2020)
2014-2018 Coordinator of MareValue (Increased utilisation and value from limited marine resources), a collaboration between SLU, Chalmers, SP and five companies in the Swedish seafood sector, funded by Vinnova, Swedish Innovation funding agency
2014-2015 Coordinator of project on shrimp fisheries in the Skagerrak, funded by Nordic working group for fisheries AG-FISK
2014-2018 Partner of project on developing marine aquaculture in Sweden; Nomaculture, led by Gothenburg University, collaborating with Chalmers. Funded by Mistra foundation
2012-2014 Work package leader and project manager at SIK of EU-project WhiteFish, coordinated by Nofima (FP7 SME projects)

- 2010-2014 Coordinator of project “Improved sustainability of fisheries management supported by LCA (Swedish Research Council Formas)
- 2008-2009 Project manager at SIK of the project “Environmental assessment of the Norwegian seafood sector” in collaboration with SINTEF Fisheries and Aquaculture, Norway, funded by FHF
- 2007-2008 Coordination of project about LCA of shrimps from artisanal and industrial fisheries in Senegal, in collaboration with FAO
- 2006-2009 Partner of international project about LCA of salmon production, collaboration with Dalhousie University and Ecotrust and the salmon industry.

Selected peer-reviewed publications (2009-2019)

Ziegler, F., Ritzau Eigaard, O., Parker, R.W.R, Tyedmers, P, Skontorp Hognes, E., Jafarzadeh, S. (2019) Adding perspectives to: “Global trends in carbon dioxide (CO₂) emissions from fuel combustion in marine fisheries from 1950-2016” *Marine Policy* (107):103488

Hallström, E., Bergman, K., Mifflin, K., Parker, R., Tyedmers, P., Troell, M. **Ziegler, F.** (2019) Combined climate and nutritional performance of seafoods *Journal of Cleaner Production* 230: 402-411

Philis, G., **Ziegler, F.**, Gansel, L.C., Dverdal Jansen, M., Gracey, E.O., Stene, A., (2019) Comparing Life Cycle Assessment (LCA) of salmonid aquaculture production systems: status and perspectives *Sustainability* 11: 2517

Thusty, M.F., Tyedmers, P.H., Bailey, M., Ziegler, F., Henriksson, P.J.G., Béné, C., Bush, S., Newton, R., Asche, F., Little, D.C., Belton, B., Troell, M., Jonell, M. (2019) Reframing the sustainable seafood narrative. *Global Environmental Change* 59:101991

Parodi, A., Leip, A., De Boer, I.J.M., Slegers, P.M., **Ziegler, F.**, Temme, E.H.M., Herrero, M., Tuomisto, H., Valin, H., Van Middelaar, C.E., Van Loon, J.J.A., Van Zanten, H.H.E. (2018) Future foods: towards a sustainable and healthy diet for a growing population. *Nature Sustainability*. Published online Dec 14, 2018

Thusty, M., Tyedmers, P., **Ziegler, F.**, Jonell, M., Henriksson, P., Newton, R., Little, D., Fry, J., Love, D., Cao, L. (2018) Commentary: Comparing efficiency in aquatic and terrestrial animal production systems. *Environmental Research Letters*. Published online Dec 4, 2018

Bergman, K. **Ziegler, F.** (2018) Environmental impacts of alternative antifouling methods and use patterns of leisure boat owners *International Journal of Life Cycle Assessment*. Published online Sep 7 2018

Hornborg, S., Hobday, A.J., **Ziegler, F.**, Smith, A.D.M., Green, B.S. (2018) Shaping the sustainability of seafood from capture fisheries integrating the perspectives of stakeholders through combining systems analysis tools *ICES Journal of Marine Science* Published online July 20 2018

Ziegler, F., Groen, E.A., Hornborg, S., Bokkers, E.A.M., Karlsen, K.M., de Boer, I.J.M. (2018) Assessing broad life cycle impacts of daily onboard decision-making, annual strategic planning and fisheries management in a northeast Atlantic trawl fishery. *International Journal of Life Cycle Assessment* 23(7):1357-1367

- Ziegler, F.**, Hornborg, S., Green, B.S., Eigaard, O.R., Farmery, A., Hammar, L., Hartmann, K., Molander, S., Parker, W.R., Skontorp Hognes, E., Vázquez-Rowe, I. and Smith, A.D.M. (2016) Expanding the concept of sustainable seafood using Life Cycle Assessment. *Fish and Fisheries* 17(4): 1073-1093
- Ziegler, F.**, Hornborg, S., Valentinsson, D., Skontorp Hognes, E., Eigaard, O.R. (2016) Same stock, different management: Quantifying the sustainability of three Skagerrak shrimp fisheries from a product perspective. *ICES Journal of Marine Science* 73(7): 1806-1814
- Cashion, T., Hornborg, S., **Ziegler, F.**, Skontorp Hognes, E., Tyedmers, P. Review and advancement of the marine biotic resource use metric in LCAs: a case study of Norwegian salmon feed. *International Journal of Life Cycle Assessment* 21(8):1106-1120
- Almeida, C., Vaz, S., **Ziegler, F.** 2015. Environmental life cycle assessment of a canned sardine product from Portugal. *J Ind Ecol* 19(4):607-617
- Emanuelsson, A., **Ziegler, F.**, Pihl, L., Sköld, M., Sonesson, U., 2014. Accounting for overfishing in Life Cycle Assessment: new impact categories for biotic resource use. *IJLCA* 19:1156-1168
- Ziegler, F.**, Hornborg, S., 2014. Stock size matters more than vessel size: The fuel efficiency of Swedish demersal trawl fisheries 2002-2010. *Mar Pol* (2014): 72-81
- Almeida, C., Vaz, S., Cabral, H., **Ziegler, F.** 2014. Environmental assessment of sardine (*Sardina pilchardus*) purse seine fishery in Portugal with LCA methodology including biological impact categories. *IJLCA* 19:297-306
- Ziegler, F.**, Winther, U., Skontorp Hognes, E., Emanuelsson, A., Sund, V., Ellingsen, H., 2013. The carbon footprint of Norwegian seafood products on the global seafood market. *J Ind Ecol* 17(1): 103-116
- Hornborg, S., Svensson, M., Nilsson, P. & **Ziegler F.** (2013) By-Catch impacts in fisheries: Utilizing the IUCN Red List categories for enhanced product level assessment in seafood LCAs. *Environmental Management*. 2013)52(5):1239-1248
- Hornborg, S. Nilsson, P., Valentinsson, D., **Ziegler, F.**, 2012. Integrated environmental assessment of fisheries management: Swedish *Nephrops* trawl fisheries evaluated using a life cycle approach. *Mar Pol* 36(2012): 1193-1201
- Hornborg, S., Belgrano, A., Bartolino, V., Valentinsson, D., **Ziegler, F.**, 2012. Trophic indicators in fisheries: a call for re-evaluation. *Biology Letters* 9(1):20121050
- Ford, J., N. Pelletier, **F. Ziegler**, A. Scholz, P. Tyedmers, U. Sonesson, S. Kruse, H., Silverman. 2011. Developing Local Ecological Impact Categories and Indicators for Life Cycle Assessment of Salmon Aquaculture. *J Ind Ecol* 16(2): 254-265
- Peacock, N., Aichinger, H., Parenti, A., Brentrup, F., Pennington, D., De Camillis, C., Raggi, A., D'Annunzio, G., Rennaud, J.-P., Balázs, S., Schenker, U., Unger, N., **Ziegler, F.**, 2011. Towards a harmonised framework methodology for the environmental assessment of food and drink products. *IJLCA* 16:189-197
- Ziegler, F.**, J.L. Eichelsheim, A. Emanuelsson, A. Flysjö, V. Ndiaye, M. Thrane. 2011. Extended Life Cycle Assessment of southern pink shrimp (*Penaeus notialis*) exported to Europe from Senegalese artisanal and industrial fisheries. *J Ind Ecol* 15(4): 527-538
- Thrane, M., **Ziegler, F.**, Sonesson, U., 2009. Eco-labelling of wild-caught seafood products. *Journal of Cleaner Production* 17(3):416-423.

Pelletier, N., Tyedmers, P., Sonesson, U., Scholz, A., **Ziegler, F.**, Flysjö, A., Kruse, S., Cancino, B., Silverman, H., 2009. Not all salmon are created equal: Life Cycle Assessment (LCA) of global salmon farming systems. *Environmental Science and Technology* 43(23):8730-8736

Books/book chapters (2009-2019)

Ziegler, F., Hornborg, S., Emanuelsson, A., 2013. Nya spelregler för mer ansvarsfullt fiske i Europa. Pp 421-441 in: Havsbruk som håller i längden (in Swedish). Formas fokuserar.

Sonesson, U., Berlin, J. and **Ziegler, F.** (eds.), 2010. Environmental assessment and management in the food industry. Life Cycle Assessment and related approaches. Woodhead Publishing.

Ziegler, F., 2010. Challenges in assessing the environmental impacts of aquaculture and fisheries. Chapter 8 in: Sonesson, U., Berlin, J. and Ziegler, F. (eds.). Environmental assessment and management in the food industry Life Cycle Assessment and related approaches. Woodhead Publishing.

Ziegler, F., 2009. A catch for the future- methods for more sustainable production of seafood products. Carbon footprint, energy use, life cycle assessment and eco-labeling of seafood. pp 341- 351 in: Fisheries, Sustainability and Development. Royal Swedish Academy of Agriculture and Forestry (KSLA).

Other publications (public reports with international reach and conference proceedings, 2009-2019)

Winther, U., Skontorp Hognes, E., Jafarzadeh, S., **Ziegler, F.** (2020) Greenhouse gas emissions of Norwegian seafood products in 2017 SINTEF Oceans report 2019:01505

Ziegler, F., Groen, E., Hornborg, S., Bokkers, E.A.M., Karlsen, K.M., de Boer, I.J.M. Environmental impacts of a demersal freeze trawler on a fishing trip basis. Extended abstract No. ICES CM 2014/3860 G:23 from ICES Annual Science Conference, A Coruna, Spain, September 15-19, 2014.

Ziegler, F., Hornborg, S. Fuel use in fishing- an important indicator for sustainable fisheries. Extended abstract No. ICES CM 2014/ 3863 G:18 from ICES Annual Science Conference, A Coruna, Spain, September 15-19, 2014.

Groen, E., **Ziegler, F.**, Bokkers, E.A.M., Karlsen, K.M., Veldhuizen, L., de Boer, I.J.M., Donnelly, K., Sund, V., Krewer, C. 2013 Variability in fuel efficiency of a northeast Atlantic demersal trawl fishery. Conference proceedings 6th International conference Life Cycle Management Göteborg, Sweden August 25-28 2013.

Ytrestøyl, T., Aas, T.S., Berge G.M., Hatlen, B., Sørensen, M., Ruyter, B., Thomassen, M., Skontorp Hognes, E., **Ziegler, F.**, Sund, V., Åsgård, T. 2011. Resource utilisation and eco-efficiency of Norwegian salmon farming in 2010. Nofima report 53/2011 Available on: http://www.nofima.no/filearchive/rapport-53-2011_4.pdf

Ziegler, F. et al., 2010. There is more to greenhouse gas emissions of fisheries than carbon dioxide from fuel combustion. Proceedings from Energy Use in Fisheries. Seattle 14-17 November 2010.

Emanuelsson, A., **Ziegler F.** et al. 2010. Environmental comparison of Senegalese shrimp products from industrial and artisanal fisheries using Life Cycle Assessment methodology, focusing on carbon footprint and biological impacts. Proceedings from Energy Use in Fisheries. Seattle 14-17 November 2010.

Winther, U., **Ziegler, F.**, Skontorp Hognes, E., Emanuelsson A., Sund, V., Ellingsen H., 2009. Carbon footprint and energy use of Norwegian seafood products. SINTEF Fisheries and Aquaculture report: SFH80 A096068

Ziegler, F., Eichelsheim, J.L., Emanuelsson, A., Flysjö, A., Ndiaye, V., Thrane, M., 2009. Life Cycle Assessment of southern pink shrimp products from Senegal. An environmental comparison between artisanal fisheries in the Casamance region and a trawl fishery based in Dakar. SIK report 789. ISBN 978-91-7290-280-0

Ziegler, F., Eichelsheim, J.L., Emanuelsson, A., Flysjö, A., Ndiaye, V., Thrane, M., 2009. Life Cycle Assessment of southern pink shrimp products from Senegal. An environmental comparison between artisanal fisheries in the Casamance region and a trawl fishery based in Dakar. FAO Fisheries Circular No. 1044 FIE/C1044.

Theses

Ziegler, F., 2006. Environmental Life Cycle Assessment of seafood products from capture fisheries. PhD thesis, Göteborg University, Dept. of Marine Ecology / SIK, The Swedish Institute for Food and Biotechnology. SIK report 754 (ISBN 91-89677-27-7)

Ziegler, F., 2001. Environmental Assessment of seafood with a life-cycle perspective, Licentiate thesis, Göteborg University, Dept. of Marine Ecology/ SIK, The Swedish Institute for Food and Biotechnology. SIK report 689 (ISBN 91-7290-216-7)