

Joël AUBIN

Married, 2 children

Date of birth : February 24th 1967

Research Engineer HC
Environmental assessment and design of sustainable livestock and
aquaculture systems
INRAE

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Graduation:

- Habilitation à Diriger des Recherches (HDR), Université de Rennes1, March 2015
- PhD thesis of Agrocampus Ouest, March 2014
- Engineer in Agriculture, Institut Supérieur Agricole de Beauvais 1990.

Professional experience main items:

From January 2016

- Coordinator of EU project ERANET COFASP IMTA-Effect (2016-2019)
- Head of the INRAE-CIRAD MEANS platform dedicated to environmental assessment of sustainability of agrifood systems. <https://www.inrae.fr/means>

From January 2012 to December 2015

- Head of ASAE research team in UMR SAS: Agronomic and environmental assessment of crop – livestock systems
- Coordinator of ANR-Systerra PISCEnLIT project (2010-2013)

From September 2003

- Research Engineer at INRAE UMR SAS, working on environmental assessment of livestock and aquaculture systems, development of Life Cycle Assessment applied to aquaculture systems
- Participation to different research projects on aquaculture sustainability in France and abroad (Indonesia, Cameroon, Thailand, Philippines, Greece, Brazil,...)
- Coordinator of inter-institutional workshops on aquaculture systems and sustainability (INRA, CIRAD, IRD, IFREMER, ...).

From July 1996 to July 2004

- Director of the Joint Experimental Unit (INRA-IFREMER), SEMII, fish farm for salmonids production in fresh water (hatchery, growth) and sea cages (Sizun et Camaret/mer, Brittany)
- Coordinator of research projects about triploidy impacts on fish deformity

- Coordinator of research projects about the use of probiotics in fish farming

From February 1992 to July 1996

- Responsible for the experimental facility of the fish physiology laboratory of INRA (SCRIBE)

From September 1990 to Decembrer 1991

- Responsible for the experimental fish farm of ORSTOM (IRD) (Tilapia and catfish), at Layo Abidjan, Ivory Coast.

Recent publications

2020

- Chary, K., **Aubin, J.**, Sadoul, B., Fiandrino, A., Coves, D., Callier, M.D., 2020. Integrated multi-trophic aquaculture of red drum (*Sciaenops ocellatus*) and sea cucumber (*Holothuria scabra*): Assessing bioremediation and life-cycle impacts. *Aquaculture*. 516.
- Nahon, S., Roussel J.-M., Jaeger C., Menniti C., Kerhervé P., Mortillaro J.-M., **Aubin J.** Characterization of trophic niche partitioning between carp (*Cyprinus carpio*) and roach (*Rutilus rutilus*) in experimental polyculture ponds using carbon ($\delta^{13}C$) and nitrogen ($\delta^{15}N$) stable isotopes. *Aquaculture* (2020) <https://doi.org/10.1016/j.aquaculture.2020.735162>
- Abdou, K., Le Loc'h, F., Gascuel, D., Romdhane, M.S., **Aubin, J.**, Lasram, F.B., 2020. Combining ecosystem indicators and life cycle assessment for environmental assessment of demersal trawling in Tunisia. *Int. J. Life Cycle Assess.* 25, 105-119.

2019

- Aubin, J.**, Gac, A., Espagnol, S., Wilfart, A. (2019) Comment mobiliser la méthode ACV pour éclairer les enjeux environnementaux des élevages ? in « Pratiques d'élevage et environnement : Mesurer, évaluer, agir » S. Espagnol, C Brame et J.-Y. Dourmad (coord.) Quae Editions, 199-216
- Chary, K., Fiandrino, A., Covès, D., **Aubin, J.**, Falguière, J.-C., Callier, M.D., 2019. Modeling sea cage outputs for data-scarce areas: application to red drum (*Sciaenops ocellatus*) aquaculture in Mayotte, Indian Ocean. *Aquaculture International*.
- Gesan-Guiziou, G., Alaphilippe, A., Andro, M., **Aubin, J.**, Bockstaller, C., Botreau, R., Buche, P., Collet, C., Darmon, N., Delabuis, M., Girard, A., Grateau, R., Kansou, K., Martinet, V., Membré, J.M., Sabbadin, R., Soler, L.G., Thiollet-Scholtus, M., Tonda, A., Van Der Werf, H.M.G., 2019. Annotation data about multi criteria assessment methods used in the agri-food research: The french national institute for agricultural research (INRA) experience. *Data in brief*. 25, 1-8.
- Jaeger, C., Foucard, P., Tocqueville, A., Nahon, S., **Aubin, J.**, 2019. Mass balanced based LCA of a common carp-lettuce aquaponics system. *Aquacultural Engineering*. 84, 29-41.
- Le Féon, S., Thévenot, A., Maillard, F., Macombe, C., Forteau, L., **Aubin, J.**, 2019. Life Cycle Assessment of fish fed with insect meal: Case study of mealworm inclusion in trout feed, in France. *Aquaculture*. 500, 82-91.
- Macombe, C., Le Feon, S., **Aubin, J.**, Maillard, F., 2019. Marketing and social effects of industrial scale insect value chains in Europe: case of mealworm for feed in France. *Journal of Insects as Food and Feed*. 5, 215-224.
- Senga Kiessé, T., Corson, M.S., Eugène, M., **Aubin, J.**, Wilfart, A., 2019. Analysis of enteric methane emissions due to extreme variations in management practices of dairy-production systems. *Agric. Syst.* 173, 449-457.
- Willot, P.-A., **Aubin, J.**, Salles, J.-M., Wilfart, A., 2019. Ecosystem service framework and typology for an ecosystem approach to aquaculture. *Aquaculture*, 734260.

2018

- Aubin, J.**, Fontaine, C., Callier, M., d'orbcastel, E.R., 2018. Blue mussel (*Mytilus edulis*) bouchot culture in Mont-St Michel Bay: potential mitigation effects on climate change and eutrophication. *Int. J. Life Cycle Assess.* 23, 1030-1041.

- Abdou, K., Gascuel, D., **Aubin, J.**, Romdhane, M.S., Ben Rais Lasram, F., Le Loc'h, F., 2018. Environmental life cycle assessment of seafood production: A case study of trawler catches in Tunisia. *Science of the Total Environment* 610-611, 298-307.
- Abdou, K., Lasram, F.B., Romdhane, M.S., Le Loc'h, F., **Aubin, J.**, 2018. Rearing performances and environmental assessment of sea cage farming in Tunisia using life cycle assessment (LCA) combined with PCA and HCPC. *Int. J. Life Cycle Assess.* 23, 1049-1062.
- Chary, K., **Aubin, J.**, Guindé, L., Sierra, J., Blazy, J.-M., 2018. Cultivating biomass locally or importing it? LCA of biomass provision scenarios for cleaner electricity production in a small tropical island. *Biomass and Bioenergy.* 110, 1-12.
- Cloâtre, T., Ciolek, D., Colomb, V., **Aubin, J.**, 2018. Life Cycle Inventory of French fisheries: AGRIBALYSE for sea products The 11th International Conference on Life Cycle Assessment of Food (LCA Food 2018) Kasetsart University, King Mongkut's University and National Science and Technology Development Agency Bangkok, Thailand, pp. 326-330.
- Jaeger, C., **Aubin, J.**, 2018. Ecological intensification in multi-trophic aquaculture ponds : an experimental approach. *Aquatic Living Resources.* 31, 36.
- Maillard, F., Macombe, C., **Aubin, J.**, Romdhana, H., Mezdour, S., 2018. Mealworm Larvae Production Systems: Management Scenarios. in: Halloran A., F.R., Vantomme P., Roos N. (Ed.), *Edible Insects in Sustainable Food Systems.* Springer, Cham.
- Nitschelm, L., Parnaudeau, V., Vertes, F., van der Werf, H.M.G., Corson, M.S., Viaud, V., **Aubin, J.**, Walter, C., 2018. Improving Estimates of Nitrogen Emissions for Life Cycle Assessment of Cropping Systems at the Scale of an Agricultural Territory. *Environmental Science & Technology.* 52, 1330-1338.
- Thevenot, A., Rivera, J.L., Wilfart, A., Maillard, F., Hassouna, M., Senga-Kiesse, T., Le Feon, S., **Aubin, J.**, 2018. Mealworm meal for animal feed: Environmental assessment and sensitivity analysis to guide future prospects. *J. Clean Prod.* 170, 1260-1267.

2017

- Aubin, J.**, Callier, M., Rey-Valette, H., Mathé, S., Wilfart, A., Legendre, M., Slembrouck, J., Caruso, D., Chia, E., Masson, G., Blancheton, J.P., Ediwarman, Haryadi, J., Prihadi, T.H., de Matos Casaca, J., Tamassia, S.T.J., Tocqueville, A., Fontaine, P., 2017. Implementing ecological intensification in fish farming: definition and principles from contrasting experiences. *Reviews in Aquaculture.*
- Aubin, J.**, Fontaine, C., Callier, M., Roque d'orbcastel, E., 2017. Blue mussel (*Mytilus edulis*) bouchot culture in Mont-St Michel Bay: potential mitigation effects on climate change and eutrophication. *The International Journal of Life Cycle Assessment.*
- Besson, M., de Boer, I.J.M., Vandeputte, M., van Arendonk, J.A.M., Quillet, E., Komen, H., **Aubin, J.**, 2017. Effect of production quotas on economic and environmental values of growth rate and feed efficiency in sea cage fish farming. *Plos One.* 12.
- Mathé, S., Rey-Valette, H., Chia, E., **Aubin, J.**, Fontaine, P., 2017. Déterminants des aptitudes à l'éco-innovation des pisciculteurs. *Revue Française de Gestion* 43, 51-64.
- Medeiros MV, **Aubin J.**, Camargo AFM, Life cycle assessment of fish and prawn production: Comparison of monoculture and polyculture freshwater systems in Brazil, *Journal of Cleaner Production* (2017), doi: 10.1016/j.jclepro.2017.04.059.
- Abdou, K., **Aubin, J.**, Romdhane, M.S., Le Loc'h, F., Lasrama, F.B., 2017. Environmental assessment of seabass (*Dicentrarchus labrax*) and seabream (*Sparus aurata*) farming from a life cycle perspective: A case study of a Tunisian aquaculture farm. *Aquaculture.* 471, 204-212.
- Abdou, K., Ben Rais Lasram, F., Romdhane, M.S., Le Loc'h, F., **Aubin, J.**, 2017. Rearing performances and environmental assessment of sea cage farming in Tunisia using life cycle assessment (LCA) combined with PCA and HCPC. *The International Journal of Life Cycle*
- Haffray, P., Alba, I.A., Cariou, S., Bruant, J.S., Bugeon, J., Vandeputte, M., **Aubin, J.**, 2017. Can selective breeding for growth or fillet yield decrease environmental impact of fish farming? A gilthead sea (*Sparus aurata*) case study. *Aquaculture.* 472, 96-96.
- Lairez, J., Feschet, P., Botreau, R., Bockstaller, C., Fortun-Lamothe, L., Bouvarel, I., **Aubin, J.**, 2017. L'évaluation multicritère des systèmes d'élevage pour accompagner leurs évolutions : démarches, enjeux et questions soulevées. *Inra Productions Animales.* 30, 255-268.
- Chen, X.B.; Wilfart, A.; Puillet, L.; **Aubin, J.** 2017. A new method of biophysical allocation in LCA of livestock co-products: modeling metabolic energy requirements of body-tissue growth. *International Journal of Life Cycle Assessment.* 22 (6), 883-895 10.1007/s11367-016-1201-y

Aubin, J., Robin, J., Wezel, A., Thomas, M., 2017. Agroecological Management in fish pond systems. in: Wezel, A. (Ed.), *Agroecological Practices for Sustainable Agriculture : Principles, Applications, and Making the Transition*. World Scientific Publishing, London, pp. 355-394.

PhD thesis supervision and related publications:

Thèse Pierre-Alexandre Willot (2017-2019) : conception d'une méthode d'évaluation des services écosystémiques : application aux étangs piscicoles français. Thèse de doctorat. Agrocampus Ouest. UMR Sol Agro et Hydrosystème Spatialisation (SAS) INRA-Agrocampus Ouest Rennes (directeur de thèse)

- Willot, P.-A., Aubin, J., Salles, J.-M., Wilfart, A., 2019. Ecosystem service framework and typology for an ecosystem approach to aquaculture. *Aquaculture*, 734260.

Thèse Killian Chary (2016-2019). Analyse environnementale intégrée pour le développement d'une aquaculture durable : Scénarios de pisciculture marine dans le lagon de Mayotte. Thèse de doctorat, Université de Montpellier, Unité mixte de recherche MARBEC, Ifremer. (co-encadrant)

- Chary, K., Aubin, J., Sadoul, B., Fiandrino, A., Coves, D., Callier, M.D., 2020. Integrated multi-trophic aquaculture of red drum (*Sciaenops ocellatus*) and sea cucumber (*Holothuria scabra*): Assessing bioremediation and life-cycle impacts. *Aquaculture*. 516.
- Chary, K., Fiandrino, A., Covès, D., Aubin, J., Falguière, J.-C., Callier, M.D., 2019. Modeling sea cage outputs for data-scarce areas: application to red drum (*Sciaenops ocellatus*) aquaculture in Mayotte, Indian Ocean. *Aquaculture International*.

Thèse Abdou Khaled (2015-2017). Évaluation des impacts environnementaux du chalutage de fond et de l'aquaculture en Tunisie: approche comparative par les Analyses de Cycle de Vie (ACV). Thèse de doctorat. Thèse en co-tutelle entre L'Université de Bretagne Occidentale et l'Institut National Agronomique de Tunisie. (co-encadrant)

- Abdou, K., Le Loc'h, F., Gascuel, D., Romdhane, M.S., Aubin, J., Ben Rais Lasram, F., 2019. Combining ecosystem indicators and life cycle assessment for environmental assessment of demersal trawling in Tunisia. *The International Journal of Life Cycle Assessment*.
- Abdou, K., Lasram, F.B., Romdhane, M.S., Le Loc'h, F., Aubin, J., 2018. Rearing performances and environmental assessment of sea cage farming in Tunisia using life cycle assessment (LCA) combined with PCA and HCPC. *Int. J. Life Cycle Assess.* 23, 1049-1062.
- Abdou, K., Gascuel, D., Aubin, J., Romdhane, M.S., Lasram, F.B., Le Loch, F., 2018. Environmental life cycle assessment of seafood production: A case study of trawler catches in Tunisia. *Science of the Total Environment*. 610, 298-307.
- Abdou, K., Aubin, J., Romdhane, M.S., Le Loc'h, F., Lasrama, F.B., 2017. Environmental assessment of seabass (*Dicentrarchus labrax*) and seabream (*Sparus aurata*) farming from a life cycle perspective: A case study of a Tunisian aquaculture farm. *Aquaculture*. 471, 204-212.

Thèse Laure Nitschelm (2014- 2016). Développement de la méthode Analyse du Cycle de Vie Territoriale Spatialisée (ACVTS) appliquée à l'agriculture. Cas d'étude des bassins versants de la Lieue de Grève, Bretagne, France. Thèse de doctorat. Agrocampus Ouest. INRA, Agrocampus Ouest, UMR Sol Agro et Hydrosystème Spatialisation. 209 p. (encadrant principal)

- Nitschelm, L., Aubin, J., Corson, M.S., Viaud, V., Walter, C., 2016. Spatial differentiation in Life Cycle Assessment LCA applied to an agricultural territory: current practices and method development. *J. Clean Prod.* 112, 2472-2484.
- Nitschelm, L., Parnaudeau, V., Vertes, F., van der Werf, H.M.G., Corson, M.S., Viaud, V., Aubin, J., Walter, C., 2018. Improving Estimates of Nitrogen Emissions for Life Cycle Assessment of Cropping Systems at the Scale of an Agricultural Territory. *Environmental Science & Technology*. 52, 1330-1338.

Thèse Thomas Efolé-Ewoukem (2008-2011) Optimisation biotechnique de la pisciculture en étang dans le cadre du développement durable des Exploitations Familiales Agricoles au Cameroun. Thèse de doctorat. Agrocampus Ouest. CIRAD, Agrocampus Ouest, (co-encadrant)

- Ewoukem, T.E., Aubin, J., Mikolasek, O., Corson, M.S., Eyango, M.T., Tchoumboue, J., van der Werf, H.M.G., Ombredane, D., 2012. Environmental impacts of farms integrating aquaculture and agriculture in Cameroon. *J. Clean Prod.* 28, 208-214.
- Ewoukem, T.E., Mikolasek, O., Aubin, J., Eyango, M.T., Pouomogne, V., Ombredane, D., 2017. Sustainability of fish pond culture in rural farming systems of Central and Western Cameroon. *International Journal of Agricultural Sustainability.* 15, 208-222.