# **Special Issue**

# Innovations in Aquaculture: New Technologies, Culture Systems and Integration of Emerging Species

# Message from the Guest Editors

Aquaculture, a cornerstone of sustainable food production, continues to evolve through technological and scientific innovations that enhance its efficiency and environmental sustainability. Notable advancements include the development of water-efficient systems. such as recirculating aquaculture systems (RASs) and biofloc technology (BFT), which enable fish farming in controlled environments with reduced environmental impact. Similarly, integrated approaches, such as integrated multi-trophic aquaculture (IMTA) and aguaponic systems, have optimized nutrient utilization. These integrated systems, often involving multiple species, require specialized knowledge in the reproduction, management, and nutrition of both established and emerging species. Frequently, the additional species in these systems perform secondary but essential roles, such as maintaining water quality and recycling nutrients, which are crucial for the ecological balance and sustainability of aquaculture practices. Moreover, the integration of artificial intelligence, automation, and sensor technologies revolutionize management, while biotechnology fosters resilient, fast-growing species.

#### **Guest Editors**

Dr. Adolfo Jatobá

Aquaculture Laboratory, Catarinense Federal Institute of Education, Science and Technology, Campus Araquari, Araquari, Brazil

Dr. Bruno Silva

Santa Catarina State Rural Extension and Agricultural Research Enterprise (EPAGRI), Itajaí, Brazil

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Animals
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
animals@mdpi.com

mdpi.com/journal/ animals





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# Message from the Editor-in-Chief

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## Editor-in-Chief

Prof. Dr. Clive J. C. Phillips

Institute of Veterinary Medicine and Animal Sciences, Estonian University of Life Sciences, Kreutzwaldi 1, 51014 Tartu, Estonia
 Curtin University Sustainability Policy (CUSP) Institute, Kent St., Bentley 6102, Australia

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