

PARTNER IDENTIFICATION FORM - HORIZON-CL6-2026-01-ZEROPOLLUTION-01	
PIC	999995602
Full legal name	Università degli Studi di Padova (Dipartimento di Biomedicina Comparata e Alimentazione)
Legal name in EN	University of Padua (Department of Comparative Biomedicine and Food Science)
Acronym	UNIPD
Department	Dipartimento di Biomedicina Comparata e Alimentazione (BCA)
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PROFILE	
Type of Organisation	Higher or secondary education establishment
Is the partner organisation a public body?	Yes
Is the partner organisation a non-profit?	Yes
BACKGROUND AND EXPERIENCE	
Please briefly present the partner organization	The Department of Comparative Biomedicine and Food Science (BCA) is the department of the University of Padova that pursues excellence in research and teaching in all disciplines related to veterinary medicine, comparative animal science and food safety . Today, BCA is a flourishing department, rich in ideas and

	<p>specific expertise that has 51 active professors (2022). BCA supports scientific projects integrated with specific needs of the territory, promoting technological transfer of the obtained results. It develops relationships with the business community, public and professional associations.</p>
<p>Fields of research and topics of interest of the organization</p>	<p>With particular reference to the call HORIZON-CL6-2026-01-ZEROPOLLUTION-01, the research activities involve a multidisciplinary team.</p> <p>The research area focuses on</p> <ul style="list-style-type: none"> - the anatomy, function and bioacoustics of odontocetes, with particular attention to the mechanisms underlying underwater hearing. - the effects of acoustic exposure on commercially relevant fish species, adopting an integrated morphological, physiological and behavioural approach <p>A key project involved participation in the <u>DIAPHONIA</u> initiative, where data from a dolphin head were used to develop a 3D model simulating sound wave propagation through different cranial tissues. This model has contributed to a deeper understanding of odontocete auditory pathways and has demonstrated broader applicability, as highlighted by scientific publications showing interest in its use within geoscience modelling environments. This work has strengthened also the understanding of how sound impacts fish welfare, performance and stress responses, providing valuable insights for environmental monitoring and sustainable aquaculture management.</p> <p>Priority areas include advancing the anatomical and functional understanding of odontocete hearing, refining and expanding the 3D sound propagation model (<u>SPECFEM</u>), and investigating how these species determine the elevation of sound sources. These research directions aim to provide concrete, data-driven insights into the impact of underwater noise pollution on these marine sentinel species. The department plans to continue and expand this multidisciplinary approach by exploring additional acoustic exposure scenarios, including conditions that closely mimic real-world marine environments. This would enhance the applicability and relevance of the collected data for policy, conservation and industry stakeholders.</p> <p>Existing synergies include collaborations with the Department of Geosciences and with the Universitat Politècnica de Catalunya, supporting interdisciplinary integration of marine bioacoustics and geophysical modelling.</p>
<p>What are the skills and expertise of key staff/persons of the organization?</p>	<p><u>Regarding the call:</u> The research area offers:</p> <ul style="list-style-type: none"> • Expertise in the anatomy and functional mechanisms of odontocete auditory systems.

	<ul style="list-style-type: none"> Advanced imaging and scanning of odontocete heads for structural and acoustic analysis. Development and application of 3D numerical models simulating sound propagation in biological tissues. Evaluation of fish stress and welfare through a comprehensive panel of morphological, physiological and behavioural indicators, including innovative assessment methods <p>These competencies support high-precision assessments of acoustic impacts and contribute to innovative approaches to marine bioacoustics and noise pollution research with rigorous impact evaluation.</p> <p><u>More in general:</u></p> <ul style="list-style-type: none"> 51 professors and researchers, 35 technicians and administrative employees, At the moment, involved in 5 UE projects and 12 national/regional projects (ongoing). It has also signed 22 grant agreements for commissioned research activities with private and public bodies (ongoing). The average number of publications in the period 2017-2021 has been 181 publications per year; Centre of excellence for aquatic animal health research; 3 patents in nanotechnology and biosensors, a direct drug patent to the treatment of diseases of the skeletal muscle, and finally a system of living cells of marine mammals for studies of cell biology, toxicological test and application for large-scale research. ive patents in nanotechnology and biosensors, a direct drug patent to the treatment of diseases of the skeletal muscle and finally a system and method for cognitive assessment and training of an animal. 2 spin-offs: a system and method for cognitive assessment and training of an animal and a development of products, materials, devices and processes based on nanoparticles. 	
CONTACT PERSONS		
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European Union granted projects		
Programme	Year	Project identification
Horizon Europe	2022	FishEUTrust: Building trust in EU fish supply chains
Horizon Europe	2022	Improving Green Innovation for the Blue Revolution
H2020	2020	Improving biosecurity compliance in poultry farms
H2020	2019	Advancing European Aquaculture by Genome Functional Annotation



LIFE	2019	LIFE DELFI
H2020	2017	Integrating Innovative Approaches for Competitive and Sustainable Performance across the Mediterranean Aquaculture Value Chain -
H2020	2016	Preventing and Mitigating farmed Bivalve Diseases