





Technical Seminar on Aquaculture Biosecurity: Understanding Antimicrobial Resistance (AMR) in Aquaculture

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| <p>Edgar BRUN, Norway</p>  | <p>Edgar has experience from fish health fieldwork and research in aquatic animal disease epidemiology. Presently, he is Director of Department of Aquatic Animal Health and Welfare at the Norwegian Veterinary Institute. He has co-directed the OIE collaborating centre for Epidemiology and Risk Assessment for Aquatic Animal Diseases, involved in research projects, and member of ad hoc groups in OIE and EFSA. He joined the first meeting of FAO-initiated Progressive Management Pathway for Improving Aquaculture Biosecurity (PMP/AB) and has since been part of evolving the programme and its funding. He is active in a Norwegian-funded programme for developing competence in aquatic animal health management in the sub-Saharan region.</p> |
| <p>Andrea CAPUTO, Sweden</p>  | <p>Andrea is a Molecular Microbiologist specialized in antimicrobial resistance. After graduating with a Ph.D. in Marine Ecology at Stockholm University, Dr Caputo worked as Programme Officer at the Stockholm International Water Institute (SIWI). At SIWI, Andrea developed international programmes aimed at containing the spreading of antimicrobial resistance in low-middle income countries, primarily focusing on the water perspective of the issue. Following his mandate at SIWI, he collaborated with FAO as an Expert Consultant on the project “Emerging trends in AMR-Aquaculture”. Currently, he works as a Senior Research Scientist at EMPE Diagnostics in Stockholm, combatting multi-drug resistant tuberculosis from the core.</p> |
| <p>Alejandro DORADO GARCIA, Italy</p>  | <p>Alejandro is a veterinary epidemiologist, with experience in the private sector, academia, public health, and international development. He holds a DVM degree (Complutense University of Madrid), and an MSc and PhD in Epidemiology of AMR (Utrecht University, The Netherlands). He joined FAO in Rome, in 2018, as an Animal Health Officer. He coordinates and provides technical support for implementing a number of projects related to AMR, promotion of good practices, and surveillance and monitoring of AMR/AMU. In his work, he continuously engages with various units/divisions at FAO Headquarters and supports intensively the work in the regional offices in Africa, Asia and Latin America.</p> |
| <p>Alicia GALLARDO, Chile</p>  | <p>Alicia is a veterinarian from the University of Chile. She has 20 years of experience in public service, and since April 2018, has held the position of National Director of the National Fisheries and Aquaculture Service in Chile. She has extensive experience in aquatic animal health, biosecurity in aquaculture production, disease prevention, control and eradication, risk analysis, import regulations and food safety of animal products, including fishing, as well as experience in microbiology and food science. Since 2012, she has been a member of the OIE Aquatic Animals Commission and Chair of the OIE ad-hoc group for the evaluation of the performance of veterinary services in aquatic animals (PVS). She is currently Undersecretary for Fisheries and Aquaculture in Chile.</p> |

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**Mary Joy GORDONCILLO,
Thailand**



Mary Joy is the AMR Regional Project Coordinator at the Emergency Centre for Transboundary Animal Disease Operations (ECTAD) of the Food and Agriculture Organization (FAO) Regional Office for Asia and the Pacific. Part of her work has been on developing tools, strategies, and innovative solutions to mitigate antimicrobial resistance in the food and agriculture sector in Asia. Prior to joining the FAO, she served as the Science and One Health Coordinator of the World Organisation for Animal Health (OIE) Sub-Regional Representation for South-East Asia, and as assistant professor at the College of Veterinary Medicine, University of the Philippines. She holds a Doctor of Veterinary Medicine degree from the University of the Philippines, Masters of Tropical Veterinary Science from James Cook University in Australia, and a PhD from Michigan State University USA where she specialized in antimicrobial resistance (AMR) in livestock animals.

**Olga HAENEN,
Netherlands**



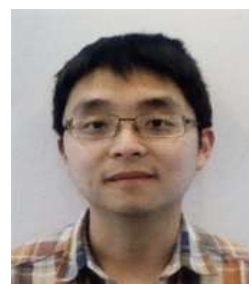
Since 1985, Olga has headed the Dutch National Reference Laboratory for Fish, Shellfish and Crustacean Diseases, as an all-round fish diagnostician and researcher, with multi-disciplinary focus on eel, carps/koi, tilapia, catfish, ornamental fish, and on bacterial contact zoonosis from fish. From 2009–2012, she was a Member of the Aquatic Animal Health Standards Commission of the OIE. She advises government and aquaculture, and EC, EFSA, ICES, and FAO. She has more than 75 scientific publications and four books, and has given more than 300 lectures on fish diseases. Since 2018, Olga has also been Professor of 'Healthy and safe insect farming for food and feed' at HAS University of Applied Sciences. Dr Haenen was awarded Honorary Member of the European Association of Fish Pathologists in September 2019.

Bin HAO, Italy



Bin Hao is Associate Professional Officer (fish pathology) at the Fisheries Division (NFI) of FAO. He supports the development and implementation of programmes and activities related to aquatic animal health/biosecurity, AMR, south-south and triangular cooperation (SSTC) in aquaculture and its sustainability. He holds a Ph.D. in Marine Biology from Institute of Oceanology, Chinese Academy of Sciences. During his doctorate period and following post-doctoral study, he mainly focused on aquatic bacterial diseases prevention and control as well as AMR mitigation in aquaculture. He joined FAO after his assignment as officer in Chinese Ministry of Agriculture and Rural Affairs (MARA), and before that he was officer in Chinese Academy of Fishery Sciences.

**Zhan Pei HENG,
Singapore**



Zhan Pei Heng is a veterinarian at the Veterinary Public Health Department of Singapore Food Agency. He is involved in various aspect of public health work relating to food animals such as designing programmes and action plans for zoonosis, animal disease and antimicrobial resistance. He also conducts relevant food safety and animal health risk analysis, inspections, disease investigation and reporting where required. The department also provides technical expertise on veterinary matters and animal disease such as to support contingency plans and assess food farms locally and overseas.

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David HUCHZERMEYER,
South Africa



David is an aquatic veterinary specialist living and working in South Africa. He has a PhD from the University of Pretoria where he is an Extraordinary Lecturer. He is also Research Associate at Rhodes University and Extraordinary Associate Professor at the University of North West. He has extensive experience working with tilapia farms in Africa, in biosecurity planning and in the export of specific-pathogen-free salmonid ova from export registered farms in South Africa. Amongst wild populations of fish, he has tracked the spread of epizootic ulcerative syndrome in Africa since the first outbreaks of disease in 2006.

Iddya KARUNASAGAR,
India



Iddya has 30+ years' experience in the area of aquatic microbiology and foodsafety. He was FAO Senior Fishery Industries Officer (Quality and Safety, 2007-2014) where he represented FAO in the meetings of Codex Committee on Fish and Fishery Products and was Leader or Member of FAO/WHO Secretariat for JEMRA. He has served in academic institutions (1978–2007) in various capacities and authored 200+ papers in refereed international journals and published several book chapters covering food safety and aquaculture. Iddya holds a MSC and PhD degrees in Microbiology from India and postdoctoral research at the University of Maryland, USA and University of Wurzburg, Germany.

Thitiporn LAOPRASERT,
Thailand







Thitiporn is a Senior Fisheries Biologist. Now act as a director of Aquatic Animal Health Research and Development Division (AAHRDD), Department of Fisheries (DOF), Thailand. Her experiences include fish health management and diseased diagnosis for many years. She is currently responsible for administrative and conduct of national disease surveillance and policies related to fish health sector including AMU-AMR. Thailand has adopted NAP-AMR since 2017. Dr Laoprasert is the Thai lead on documentation and characterization of AMU-AMR in the aquaculture sector, working as a focal point of country on NAP-AMR.

Celia LAVILLA-PITOGO,
Philippines







Celia is a Filipino scientist with extensive work in fish health research, diagnostics and training at the SEAFDEC Aquaculture Department. She was a member of the NACA Advisory Group on Aquatic Animal Health and OIE's ad hoc Committee on AMR in Aquatic Animals. Under Fulbright Scholarship, she worked with Dr Don Lightner at the University of Arizona. She became the Director of Aquatic Animal Health of Integrated Aquaculture International based in Brunei Darussalam in 2010 and is now an independent consultant for international and national organizations. Currently, she is the Fish Health Specialist of Feedmix Specialists Inc., the largest fully integrated aquaculture company in the Philippines.



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| <p>Mark LAWRENCE, USA</p>  | <p>Mark is a Professor at the Mississippi State University (MSU) College of Veterinary Medicine, a veterinary microbiologist specializing in aquatic animal health (AAH), especially in bacterial diseases of farmed US catfish and other aquaculture species and advancing AAH through research and diagnostics. Mark currently serves as director of the USAID-funded Feed the Future Innovation Lab for Fish (Fish Innovation Lab; www.fishinnovationlab.msstate.edu) and prior to this, he was Associate Dean at MSU/CVM for Research and Graduate Studies. Mark's collaborated with FAO in support development and implementation of a Progressive Management Pathway for Aquaculture Biosecurity (PMP/AB) and organization of the US Congressional Briefings on aquaculture for food security and AMR.</p> |
| <p>Audun LEM, Italy</p>  | <p>Audun joined FAO since 1996, currently Deputy Director of the Fisheries Division. He was Secretary of FAO's COFI Sub-Committee on Trade, as well as Coordinator of the GLOBEFISH project. His thematic work areas include: commodity analysis, price trends and price indexes, global value-chain analysis, multilateral trade agreements, international trade and market access, social responsibility, certification, traceability, trade and food security, gender issues. He was an independent agribusiness consultant/project manager at Norway's Embassy in Italy, financial analyst on the Oslo Stock Exchange, with PhD in Agricultural Sciences (Sea Fisheries Institute, Poland), MBA (Harvard University), BA in Economics (Norwegian School of Economics).</p> |
| <p>Aihua LI, China</p>  | <p>Aihua Li, with a PhD degree is the Principal Investigator of the State Key Laboratory of Freshwater Ecology and Biotechnology, Institute of Hydrobiology, Chinese Academy of Sciences, a well-known research institute in China with a certain international reputation in the field of hydrobiology. His major is fish pathogenic microbiology and fish pharmacology and main focus area is bacterial fish diseases. His recent research focused on exploring the relationship between the intestinal flora and the occurrence of diseases and using genomics and gene mutation techniques to study the pathogenic mechanism of bacterial pathogens and the host's immune mechanism against bacterial infection.</p> |
| <p>Giulia LOI, Italy</p>  | <p>Giulia is a veterinarian and a Food Safety Advisor working for the Food Safety and Quality Team (NFIMF) of the Fisheries Division of the Food and Agriculture Organisation in Rome, Italy. She has been working in FAO for four years. As part of her work, she develops sections and content on food safety issues in the GLOBEFISH website. In one of these sections, she analyses all cases of import rejections of fishery and aquaculture products in Canada, European Union, Japan, and the United States of America. In addition, she analyses the main regulations, guidance and laws related to fishery and aquaculture products and bivalve molluscs in different countries.</p> |

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| <p>Dante MATEO, France</p>  | <p>Dante works in the Antimicrobial Resistance and Veterinary Products Department of the World Organisation for Animal Health (OIE) in Paris. He is responsible for the development and implementation of a workplan on AMR in aquaculture. Previously, he worked as a Research Scientist at the University of Prince Edward Island (UPEI), Canada. He also worked in academia and government in Peru. He is an aquacultural engineer from the Universidad Nacional Federico Villarreal, Peru, and holds a MVSc in Bacteriology and a PhD in Aquatic Animal Health from the Atlantic Veterinary College, UPEI.</p> |
| <p>Magnus PETERSEN, Norway</p>  | <p>Magnus holds a MSc in Aquaculture (University of Bergen). Since 2019, he has been involved in the PMP/AB process and other related projects. Since 2018, he has been an adviser Norad, in the Fish for Development programme, partly mandated to harness Norwegian institutional competence and experience to the benefit of developing countries often done bilaterally by providing technical assistance and capacity building to national authorities for managing fisheries and aquaculture sectors, but also multilaterally, such as in the UN- system. He has also worked with development cooperation abroad for the Royal Norwegian Embassy, and as a journalist covering new technology in the Norwegian aquaculture sector.</p> |
| <p>Melba B. REANTASO, Italy</p>  | <p>An aquatic health specialist, Melba joined FAO in 2004 (retired early from Philippine government service, Fish Health Section), and leads the aquaculture biosecurity global portfolio (outbreak investigation, risk assessments, surveillance, emergency response, disease burden, project development, capacity building, resource mobilization) and the PMP/AB initiative. As advisory board member, journal referee, project/ job evaluator, keynote conference speaker/session convener and project LTO, Melba works with competent authorities and non-state actors, connects people and maintains a network of experts. She worked on projects involving at least 60 countries, lived for extended periods in Japan (PhD; post-doc), Italy, Thailand (NACA), USA (MD Cooperative Oxford Lab) and was ExeCom member (Sec/Treas/Chair, 1999-2005) of the FHS/Asian Fisheries Society.</p> |
| <p>John RYDER, Italy</p>  | <p>John holds a BSc (Hons) in Biochemistry (UK), a PhD in Biological Sciences (USA) and a Master of Business Administration (UK). He has travelled most of his life, having lived in ten different countries and having work experience in over 50 countries across all seven continents. For the vast majority of his career, John has worked in post-harvest fisheries in both national (UK, NZ) and international organisations (FAO – Italy, Denmark, Bangladesh). He has also been an EU expert in food safety for European Commission projects. John is currently the Lead of the Sustainable Trade and Value Chains thematic area in the Fisheries Division in FAO, and is based in Rome, Italy.</p> |

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| <p>Peter SMITH, Ireland</p>  | <p>Peter, an Emeritus Professor of Microbiology (National University of Ireland), with 30+ years' experience of research in the control of infectious diseases in aquaculture served as editor of the disease section of the Journal Aquaculture, published 130+ articles, contributed to 5 books and many international lectures. Interests include therapeutic application of antimicrobial agents and environmental consequences and potential risks to human health, development, harmonisation and validation of standardised antimicrobial susceptibility testing protocols for aquaculture. He has served as the Chairman of the ad hoc OIE Working Group that drafted the AMR chapter of the Aquatic Code; member of the Aquaculture Working Group of CLSI and EUCAST Subcommittee addressing the setting of epidemiological cut-off values for MIC distributions.</p> |
| <p>Sonia SOMGA, Philippines</p>  | <p>Sonia graduated DVM (1990), with MSc in Aquaculture at the UPM in Malaysia (1997). In government service for 23 years now at the Philippine Bureau of Fisheries and Aquatic Resources (BFAR), Sonia is currently Section Chief of the Fish Health Laboratory, National Fisheries Laboratory Division (NFLD) of BFAR involved in disease diagnosis of aquatic animals, regulatory functions including inspection, quarantine and health certification, food safety control program for aquaculture products, national residue control program, and antimicrobial use and antimicrobial resistance (AMU/AMR) in aquaculture. She had participated in trainings/workshops, conferences and projects implemented by FAO, EU-TRTA, ASEAN, NACA and SEAFDEC-MFRD on fish health and food safety.</p> |
| <p>David VERNER-JEFFREYS, UK</p>  | <p>David with PhD on the Bacteriology of Atlantic halibut (University of Glasgow, 2000). Since 2003, David leads the aquatic AMR work of the Centre for Environment Fisheries and Aquaculture Sciences (Cefas); together with the UK's Animal Plant Health Agency and Veterinary Medicines Directorate have formed the recently designated UK FAO Reference Centre for AMR. With funding from the Fleming Fund and Defra - delivers advice and training on AMU and AMR to countries. Main areas of expertise are: aquatic animal diseases, unexplained mortalities and biology of the major bacterial pathogens of fish and shellfish. He is also involved in the development, testing and registration of aquaculture medicines (vaccines and pharmaceuticals).</p> |
| <p>Snježana ZRNCIC, Croatia</p>  | <p>Snježana holds DVM and PhD degrees from Veterinary Faculty in Zagreb, with 30+ years of experience in aquatic animal health, in Croatia and neighboring countries. She established the Laboratory for Diseases of Fish and Mollusks at the Croatian Veterinary Institute with main duty diagnostics of EU-listed diseases. She has a history of cooperation with FAO since 2000, and within an FAO regional project, prepared the West Balkan Regional Aquatic Animal Disease Diagnostic Manual. Recently, she organized preparation of a Diagnostic Manual for the main pathogens in European seabass and Gilthead seabream aquaculture issued in 2020. Currently, she is serving as the General Secretary of the EAFP.</p> |