Joint FAO/WHO Expert Meeting on Microbiological Risk Assessment on
Vibrio parahaemolyticus and Vibrio vulnificus

Cefas, Weymouth, United Kingdom 13-15 May 2019

Experts participating in the meeting

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Background information

In response to the request from Codex for scientific advice, FAO and WHO have undertaken a number of risk assessments on Vibrio spp. in seafood since 2001. There have been a lot of developments in this area in past decades and our understanding of these organisms and their management continue to evolve. FAO and WHO are convening a series of activities to revise the existing risk assessment in light of recent data and information; identification of data gaps and new approaches/tools for assessing risks; and updating the existing risk model to be more applicable as a global tool.

List of experts

The following list of experts is proposed for this meeting. Please find below their bio-sketches. If you have any comments, please contact us at jemra@fao.org and jemra@who.int no later than 8 May 2019.

Dr Carmen Amaro

Dr Carmen Amaro (CA) is Full professor in the Department of Microbiology and Ecology, Universidad de Valencia (Spain) since March 2011. She teaches different subjects related to Microbiology and Microbial Pathogenesis to undergraduate and graduate students in the Faculty of Biology. She founded the research team “Pathogens in Aquaculture” (PA) in 2003. PA performs research applied to the aquaculture industry to solve problems related to diagnosis and control of bacterial diseases at farms, as well as basic research mainly focused on the zoonotic species Vibrio vulnificus to answer questions such as: what is its life cycle inside and outside of its natural hosts? How do the new virulent groups evolve and emerge? What are the key virulence factors of human and fish vibriosis? Can vaccines protect against animal vibriosis? etc. PA patented the only vaccine for fish that works efficiently against this pathogen. The research that led to the patent received a National Research
Award. She ranks the fourth in the world in number of publications in *V. vulnificus*, she has an H index of 32 (Web of Science) and has published more than 100 research articles in journals cited in the SCI.

Dr Enrico Buenaventura

Dr Enrico Buenaventura is the Section Head for Risk Assessment in the Evaluation Division of the Bureau of Microbial Hazards, Food Directorate, Health Canada and oversees the provision of health risk assessment, as well as other non-responsive risk assessment and risk profiles that inform standard setting activities in Canada.

Previously, Enrico held the position as Chief of Technical Risk Assessment at the Canadian Food Inspection Agency (CFIA), Food Safety Division. Prior to coming to Ottawa in 2006, he was the Acting Senior Inspection Microbiologist at the CFIA Burnaby Laboratory in British Columbia.

Enrico is a microbiologist and has over 30 years of experience in microbiology extensively in seafood and molluscan shellfish safety. In the past 10 years, his expertise has been focused on providing health risk assessments and scientific advice to stakeholders with responsibilities in food safety. He has served in a number of WHO/FAO Expert working group on *Vibrio parahaemolyticus* and bivalve shellfish safety. He also has experience in developing and validating laboratory methodologies and has co-authored two methods in Health Canada’s Compendium of Methods, for *Vibrio parahaemolyticus* (MFLP-23) and for Norovirus (OPFLP-01).

Dr Viviana Cachicas

Dr Viviana Cachicas works with Food Microbiology, in the Public Health Reference Institute of Chile/ Instituto de Salud Pública de Chile(ISP-Chile).

She received her BS in Biochemist of University of Concepción Chile in 1987. After four years at Pontificia University Catholic of Chile, she joined ISP-Chile. She is trained laboratory microbiologist with 30 years of experience. Her responsibilities since 2004 cover the food and water microbiological safety of Vibrios and Enteric Virus (*V. parahaemolyticus*, *V. cholerae*, Norovirus, Hepatitis A & E), specially related to Chilean outbreaks with molecular methodologies. She has been collaborating with FAO Risk Assessment of Vibrios (FAO/FUNDESPA/USP PR 38361/2010), Microbiological Risk Assessment series 22 (ISSN 1726-5274/2016), Chilean national funds 2010-2013(InnovaCorfo09CN145951) & 2018-2019 (BP16BPE-62273). In 2004, she was award of ASM fellowship (American Society for Microbiology fellowship for Latin America) at NY Medical College US for studying a Chilean outbreak of *V. parahaemolyticus*.

She has made numerous presentation on exposure studies of pathogens on food safety workshops specially scientific meeting of Chilean Microbiological Society (SOMICH, society with Ambassadors of ASM-US), AOAC for Latin America /2012 and International Mollusks Conference on Shellfish Safety (IMCSS 2011-2017). Also she has been a tutor of several master degree thesis on enteric virus and Vibrios and two chapter (9&10) of a food safety book (978-620-2-23426-9/2016).

Dr Ignace Coly

Dr Ignace Coly earned a doctorate (2014) of Animal Productions and Biotechnologies from the Cheikh Anta DIOP University in Dakar. From 1994 to now, he has worked in turn in the bacteriology-virology laboratory of Aristide Le Dantec hospital in Dakar, in the laboratory of Hygiene and Food Industries of Animal Origin (HIDAOA) in Dakar, in the fishing and catering companies in Dakar. During his 25 years...
of professional experience, he has developed skills in food safety, and conducted research on *Vibrio* spp. detected in seafood products from Senegal.

Dr Coly, who is the author and / or co-author of several scientific publications, is also the winner of the RONALD J. SIEBELING AWARD in 2010, at the international conference "Vibrios In The Environment 2010" (7 - 12 November 2010, Biloxi, Mississippi, USA).

At the national level, he is one of the 150 winners of the 2016 Business Academy-edition competition organized by ADEPME, which is an agency promoting small and medium enterprises in Senegal.

He is currently director of a consulting firm in food hygiene and safety in Senegal (cabinet Biosciences International Consulting), and devotes most of his activities to expertise and training.

**Dr Nasreldin Elhadi**

Dr Nasreldin Elhadi is Professor of Microbiology in College of Applied Medical Sciences, Imam Abdul Rahman Bin Faisal University (Formerly University of Dammam). His MSc and PhD research training were in prevalence and molecular characterization of pathogenic *Vibrio* spp (*V. cholerae*, *V. parahaemolyticus* and *V. vulnificus*) from seafood, environment and clinical sources, University Putra Malaysia, Malaysia (1996-2002), Assistant Professor of Microbiology in College of Medicine and Pharmacy, IIUM, Malaysia (2003-2005), Associate Professor of Microbiology in Department of Clinical Laboratory Science, College of Applied Medical Science, Imam Abdul Rahman Bin Faisal University (2007-2018), and took the current Professor position (Nov. 2018 to present). His research interests to study the mutual relations between the human health and the environment (coastal water, food, etc.) through the analysis (genotyping and molecular characterization, etc.) of enteric bacterial pathogens. His major laboratory research interests concern are directed towards antibiotic resistance and molecular characterization basis of pathogenesis of human infections caused by enteric gram-negative bacteria from different sources such as clinical, food (frozen seafood and beef) and environmental sources. His current ongoing research collaboration in pathogenic *Vibrio* spp. and other enteric bacterial pathogens with Division of Global Humanosphere, Center for Southeast Asian Studies (CSEAS), Kyoto University, Japan. Dr Nasreldin Elhadi has published 45 original articles in English in peer reviewed international journals.

**Dr Ronnie Gavilan**

Dr Ronnie Gavilan starts his career with a Biology degree at the University of San Luis Gonzaga in Peru, continue with PhD Program at University of Santiago de Compostela and then a Postdoctoral Fellow at Smithsonian Tropical Research Institute Panama. He started working at the National Institute of Health (NIH) of Peru at National Laboratory of Enteropathogens including activities as outbreak studies, characterization and molecular subtyping of *Vibrio* and enteric pathogens for active surveillance, implementation and validation of new technologies and coordination of national and international projects on integrated surveillance of foodborne diseases with molecular techniques. He is currently the Executive Director of Transmissible Diseases at National Center for Public Health, NIH-Peru. His line of research includes microbial genomics and molecular epidemiology of enteric pathogens as *Vibrio* and other emerging pathogens with relevance in public health.

**Dr Rachel Hartnell**

Dr Rachel Hartnell has twenty-eight years’ experience in applied bacteriological and virological research, policy advice and statutory programmes. Currently, Food Security Director at Cefas
developing and implementing the Cefas Food Security Strategy across the agencies two laboratory sites in Weymouth, Dorset and Lowestoft, Suffolk. Responsibility for 150 scientific staff working within 4 departments across the sites, covering aquatic food safety, environment and aquatic animal health. Member of the Senior Management, Operational Leadership Teams and Head of the Cefas Weymouth Laboratory. Rachel is head designate of the FAO Reference Centre for Bivalve Mollusc Sanitation assisting Member Countries with development and implementation of programmes to enhance bivalve production globally and to reduce concomitant public health risks.

Areas of specialist interest are the study of water and shellfish borne human pathogens (norovirus and hepatitis A virus and Vibrio spp.) method development and validation. She leads the EU expert working group on monitoring and classification of bivalve molluscs, is a member of several technical advisory groups at ISO/CEN on food microbiology, EU and FAO/WHO expert groups and works closely with EU DG Sante providing advice and audit for seafood safety internationally. A member of the Aquaculture Research Collaborative Hub (ARCH-UK) developing research priorities for UK Aquaculture for NERC/BBSRC.

Dr Dominique Hervio-Heath

Dr Dominique Hervio-Heath is Senior Research Scientist and Assistant Director of the Laboratory for Health, Environment and Microbiology, Ifremer (Institut Français de Recherche pour l’Exploitation de la Mer), France. She is a researcher at Ifremer in Brest (Brittany, France). She joined Ifremer in 2000, and prior to this, she has worked for over 7 years in Canada (Ministry of Fisheries and Oceans, University of British Columbia, Vancouver; University of Victoria, British Columbia) participating to and leading projects on shellfish and salmon diseases (pathology, immunology, vaccine development).

Dominique’s research interest focus on bacterial contamination of shellfish and especially on Vibrio spp. potentially pathogenic for humans. She is involved in research projects aiming at evaluating the structure, diversity and dynamics of these vibrios and of bacterial communities in marine and estuarine environments in order to assess community changes and potential emergence of new pathogens in relation with environmental variations. Additionally, she is interested in Vibrio parahaemolyticus virulence mechanisms and bacterial interactions related to virulence expression in environmental bacteria. Dominique has been contributing to various working and expert groups on foodborne pathogens and risk assessment at the national (AFNOR, ANSES) and international (CEN/ISO, FAO/WHO) levels. In 2013, she became the Associate Director of the Health, Environment and Microbiology Laboratory at Ifremer.

Dr Iddya Karunasagar

Dr Iddya Karunasagar obtained his masters and Ph.D. degree in Microbiology from Mysore University, India and carried out postdoctoral research at University of Maryland, USA, University of Sendai, Japan, Natural Resources Institute, UK and University of Wuerzburg, Germany, where he was Humboldt Scholar and visiting Professor. He started his career as Assistant Professor of Microbiology at University of Agricultural Sciences (UAS), Bangalore and rose to become Professor and Head, Department of Microbiology and Head, Division of Fisheries Sciences at UAS, Director of Research, Karnataka Veterinary, Animal and Fisheries Sciences University, Bidar. He was designated National Professor by the Indian Council of Agricultural Research. His research involved Vibrio spp, both as human pathogen and pathogen of aquatic animals. He has over 200 publications in International Journals and several book chapters. He was drafting Member of FAO/WHO Risk Assessment for Vibrio spp. in seafoods. He joined FAO as Senior Fishery Industries Officer and his area of responsibility was
fish safety and quality, for which he was the Team Leader. He was involved in providing scientific advice to the Codex Alimentarius Commission, particularly, Codex Committee on Fish and Fishery Products and Codex Committee on Food Hygiene.

Dr Dorothy-Jean McCoubrey

Dr Dorothy-Jean’s career has been immersed in environmental public health; 30 years in New Zealand regulatory roles and the last 10 years expanding to food safety matters in other countries, ranging from Afghanistan to Zimbabwe. While doing practical work in the trenches, she has also earned a BSc in Zoology and Botany from Massey University, along with a Masters in Public Health and a Masters in Environmental Science from the University of Auckland. In 2013 she was awarded a two-year education scholarship with the Seafood Branch of the US Food & Drug Administration. Her professional activities include all aspects of public health, yet the shellfish food safety world remains her passion.

Dr Mitsuaki Nishibuchi

Dr Mitsuaki Nishibuchi is Professor of Division of Global Humanosphere, Center for Southeast Asian Studies, Kyoto University, Japan. His interests are human-nature dynamics on a global scale, particularly emergence of enteric infections caused by bacterial pathogens such as *Vibrio cholerae* O1/O139, *Vibrio parahaemolyticus*, enterohaemorrhagic *Escherichia coli* (EHEC) O157, *Listeria monocytogenes*, and *Campylobacter* spp. in Southeast Asia and their spread to surrounding countries followed by application of the findings in these studies to development of the methods to improve hygienic conditions in developing countries as well as developed countries and the ecology and prevention of systemic infections mediated by mosquitos such as the fifth human malaria due to *Plasmodium knowlesi*, and dengue fever and has published extensively on discovery of the first pandemic by a new clone of *V. parahaemolyticus*, prevalence of seafood-borne diarrhea caused by other *Vibrio* spp. and heavy contamination of retail beef by EHEC O157 but its absence in diarrhea patients in developed countries in Asia. He has collaborated on food safety technologies with Kawakami Co., Ltd. and T. K. Shin Co., Ltd. in Japan and developed a food disinfectant composed of natural ingredients and its application method to raw beef; and on development of a simple, easy-to-perform, quick, and sensitive methods for quantitative detection of EHEC belonging to 15 different O serotypes in beef and thermostable direct hemolysin gene-bearing *V. parahaemolyticus* in molluscan shellfish by combining an immunomagnetic separation (IMS) technique and an Loop-Mediated Isothermal Amplification of nucleic acids (LAMP) in collaboration with Denka Seiken Co., Ltd. and Eiken Chemical Co., Ltd., respectively, both being Japanese companies.

Dr Bo Pang

Dr Bo Pang is a professor in the Department of Diarrheal Disease, National Institute for Communicable Disease Control and Prevention. He got his Ph.D. in 2006 in China CDC. He is a member of National Health Emergency Response Committee and now is responsible for the national surveillance and emergency response of disease outbreaks caused by *Vibrio parahaemolyticus* and other *Vibrio* spp. His researches focus on the rapid detection and identification, molecular epidemiology, evolution and population genetics of pathogenic bacteria, such as *V. parahaemolyticus* and *V. cholerae*. He is an advisor of graduate student and has supervised more than 10 graduates. He was involved in the publication of two books and has published more than 40 peer-reviewed papers. He was responsible for 3 national research programs and now is responsible for 2 national key or
Major research projects. He received a provincial award of Development of Science and Technology Prize in 2007.

Ms Erin Stokes

Ms Erin Stokes is a surveillance epidemiologist for the Division of Foodborne, Waterborne, and Environmental Diseases at the Centers for Disease Control and Prevention (CDC). She serves as the lead for the Cholera and Other Vibrio Illness Surveillance (COVIS) System. In this position Erin manages the collection, analysis and dissemination of domestic cholera and vibriosis data and provides subject matter expertise for domestic cholera and vibriosis as well as outbreak response management. She also acts as the Surveillance Partnerships Coordinator for the enteric disease National Surveillance Team where she works with national and state epidemiologists to improve enteric disease case reporting and modernize data transmission mechanisms. Erin joined CDC in 2014 as a Presidential Management Fellow after earning her Master’s in public health epidemiology from The George Washington University.

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