EDAR7 May 26-31 Montréal, Québec
Environmental Dimension of Antimicrobial Resistance

<table>
<tr><th colspan="2">WORKSHOP IN SHORT</th></tr>
<tr><td>Title of workshop</td><td>Environmental Dimensions of AMR in Asia-Pacific LMICs – Research needs and Regional Guideline for AMR surveillance in the Animal Farm Environment</td></tr>
<tr><td>Organizers of workshop (2-3)

For each organizer:
- Name
- Affiliation
- URL
- Short bio
- Identify two contacts with an Asterix</td><td>1. Dr. Ryo Honda* (EnD-AMR-Asia)
Professor, Faculty of Geosciences and Civil Engineering, Kanazawa University
http://env.w3.kanazawa-u.ac.jp/risk/eng/rhonda/
PI of Asia-Pacific Researcher Network on Environmental Dimensions of Antimicrobial Resistance (EnD-AMR-Asia)
https://env.w3.kanazawa-u.ac.jp/end-amr-asia/
Bio: Ryo Honda is a Professor in the Faculty of Geosciences and Civil Engineering at Kanazawa University. His expertise lies in antimicrobial resistance in water environments, wastewater-based epidemiology, and membrane-applied biological processes for water treatment and resource recovery. He obtained his Ph.D. from The University of Tokyo in 2005 and has since been involved in numerous collaborative research projects in tropical Asian countries. Dr. Honda serves as a board member of the Japan Wastewater Surveillance Association and Japan National Council for Promoting Wastewater Surveillance. His accolades include the Excellent Research Award from the Kurita Water and Environment Foundation in 2022 and the WET Excellent Paper Award from the Japan Society on Water Environment in 2018. He recently initiated the Asia-Pacific Researcher Network on Environmental Dimensions of Antimicrobial Resistance (EnD-AMR-Asia), which has provided discussion forums by an Asian expert panel.

2. Dr Muhammad Usman Zaheer** (FAORAP)
Regional AMR Surveillance Specialist
Food and Agriculture Organization of the United Nations
Regional Office for Asia and the Pacific, Bangkok, Thailand
Usman.Zaheer@fao.org
https://www.linkedin.com/in/muhammad-usman-zaheer-dvm-phd-diplomate-acvpm-m-a-c-e-bb620763/?trk=public_profile_browsemap&originalSubdomain=th
Bio: Dr Muhammad Usman Zaheer is the Regional AMR Surveillance Specialist at FAO's Regional Office for Asia and the Pacific in Bangkok. In this role, he works closely with the Quadripartite, and Member Countries for establishment of an integrated and coordinated One Health surveillance system for AMR for Better Production, sustainable agrifood systems and protecting health of animals, people and the environment.
Usman is a Veterinary Preventive Medicine and Public Health professional with 8+ years of progressively responsible role in establishment and implementation of monitoring and surveillance system for infectious animal disease including zoonoses and AMR, One Health approach, workforce development and coordination with stakeholders. He is Member American College of Epidemiology (M.A.C.E.), holds a PhD degree in Epidemiology from Colorado State University, USA (funded by The Fulbright Program), a Board Certification (Diplomate) in Veterinary Preventive Medicine from the American College of Veterinary Preventive Medicine, and a Doctor of Veterinary Medicine (DVM) degree from the University of Agriculture, Faisalabad, Pakistan.
Prior to joining FAORAP, Usman has also worked with FAO HQ, FAO Pakistan, EUFMD, and other organizations including Health Security Partners, USA and</td></tr>
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	DAI for the Fleming Fund in Pakistan and Nigeria, National Agriculture Research Center, Government of Pakistan for US-CDC funded FELTP program in Pakistan. **Contacts:** * rhonda@se.kanazawa-u.ac.jp (R.H.) ** Usman.Zaheer@fao.org (M.U.Z)
Proposed speakers **For each speaker:** - Status (pending invitation, confirmed) - Name - Affiliation - URL	***Part I: Research needs for environmental AMR in Asia-Pacific LMICs*** **Dr. Ryo Honda (confirmed)** Kanazawa University, Japan; PI of EnD-AMR-Asia rhonda@se.kanazawa-u.ac.jp **Dr. Bing Li (confirmed)** Tsinghua Shenzhen International Graduate School, Tsinghua University, China bingli@sz.tsinghua.edu.cn **Dr. Henrietta Venter (confirmed)** University of South Australia rietie.venter@unisa.edu.au **Dr. Kwanrawee Sirikanchana (invitation, confirmed)** Chulaborn Research Institute, Thailand kwanrawee@cri.or.th **Dr. Manish Kumar (invitation, confirmed)** University of Petroleum and Energy Studies, Dehradun, India manish.kumar@ddn.upes.ac.in **Dr. Tushara Chaminda (invitation, confirmed)** University of Ruhuna, Sri Lanka tusharac@cee.ruh.ac.lk **Dr. Tong Zhang** (confirmed, as a panelist) University of Hong Kong zhangt@hku.hk ***Part II: Regional Guidelines for AMR surveillance in the Animal Farm Environment*** **Dr Muhammad Usman Zaheer (confirmed)** Regional AMR Surveillance Specialist Food and Agriculture Organization of the United Nations Regional Office for Asia and the Pacific, Bangkok, Thailand Usman.Zaheer@fao.org https://www.linkedin.com/in/muhammad-usman-zaheer-dvm-phd-diplomate-acvpm-m-a-c-e-bb620763/?trk=public_profile_browsemap&originalSubdomain=th **Dr. R.E.C. (Roosmarijn) Luiken (Confirmed)** Researcher, Veterinary Department Biomolecular Health Sciences Infectious Diseases & Immunology Clinical Infectiology Utrecht University, Utrecht, Netherlands r.e.c.luiken@uu.nl https://www.uu.nl/medewerkers/RECLuiken **Dr Jutanat Srisamran (pending confirmation)** Regional AMR Project Specialist Food and Agriculture Organization of the United Nations Regional Office for Asia and the Pacific, Bangkok, Thailand Jutanat.Srisamran@Fao.org https://www.researchgate.net/scientific-contributions/Jutanat-Srisamran-2155350037

Summary (150 words max)	Asia-Pacific LMICs are considered a critical area for global spread of AMR due to dense population and rapid development. There is an urgent need for an environmental AMR monitoring framework, identifying key sources and hotspots for effective management in the One Health approach. However, AMR's fate and spread under local conditions of pollution and climate remains poorly understood. The Part-I of workshop aims to collectively identify research needs for a globally integrated environmental AMR monitoring framework suitable for the Asia-Pacific LMICs. FAO Regional Office for Asia and the Pacific has drafted a Guideline on AMR Surveillance in Animal Farm Environments, as part of the regional guideline series on surveillance of AMR, AMU and antimicrobial residues. This designed to be aligned with existing standards, anchored in regional context, and in consultation with countries and experts on this theme. The insights of environmental practitioners at EDAR7 on this draft are sought as part of the consultation process, during Part II of this workshop.
Importance for the EDAR community (100 words max)	Part I, EDAR community, this workshop represents a pivotal opportunity for international collaboration and knowledge sharing on AMR environmental monitoring, which is vital for developing a globally integrated monitoring framework that addresses diverse context including Asia-Pacific LMICs. Part II, engagement of EDAR community in the consultation for guideline on animal farm environment provides an opportunity to be part of the scientific group that will shape a guidance document for global public good. This guideline will be part of a collective force contributing to generating multi-sectoral, science-based AMR information to help define AMR actions. They will help researchers to develop monitoring and surveillance plans for AMR to generate consistent high-quality data.
AUDIENCE	
Target audience	Scientists and researchers in the arena of environmental dimensions of AMR, including in the area of: • AMR integrated surveillance along the One Health continuum • Methods for characterizing AMR in the environment, particularly the animal farm environment • Environmental policies and regulations to reduce the discharge of AMR pathogens and mitigate its impacts.
Estimated number of participants	40-50
WORKSHOP CONTENT	
Rationale, objectives and outputs of workshop (300 words max)	The One-Health approach to combating AMR is growing in LMICs, especially in the dense, fast-growing Asia-Pacific region, a key area for AMR spread due to rising antibiotic use. AMR surveillance in the environment is not yet well-established. One of the reasons is its' diversity (includes, water, soil and dust/air) which can be investigated as point sources or diffuse pollution, calling for a comprehensive AMR monitoring and data-sharing framework that identifies crucial AMR sources and hotspots. In line with FAO's mandate to support its Member Countries and its commitment to the Quadripartite, FAO RAP is developing a Regional Guideline on Monitoring and Surveillance of AMR in the Animal Farm Environment[1]. The objectives of this workshop are to: (1) consolidate research needs for creating a globally integrated AMR monitoring framework tailored to the needs of the Asia-Pacific LMICs, and

	(2) introduce the draft Regional Guideline on Monitoring and Surveillance of AMR in Animal Farm Environment developed by FAO-RAP and receive feedback from experts in the wider global community. Part I of the workshop will share recent advancements and knowledge gaps on AMR research in Asia-Pacific LMICs, and then a dialogue among experts and participants will identify crucial research priorities to support an inclusive, effective AMR monitoring framework for the Asia-Pacific LMICs. The outputs will be published on the website of EnD-AMR-Asia (https://env.w3.kanazawa-u.ac.jp/end-amr-asia/) and then summarized as an opinion paper for submission to an academic journal. In Part II, the draft guidelines will be presented and focused related discussion will contribute to the improvement of the Regional Guidelines on Monitoring and Surveillance of AMR in Animal Farm Environment.

Tentative Schedule

Time	Topic	Format/Facilitator
13:45-14:00	Welcome & Introduction	Ryo Honda / Usman Zaheer
14:00-15:00	***<u>Part I: Research needs for environmental AMR in Asia-Pacific LMICs</u>*** *Talk session: Frontlines on environmental monitoring of AMR in Asia-Pacific LMICs (10 min each*4 speakers)* ➢ National environmental surveillance of AMR and research needs in Thailand (Dr. Kwanrawee Sirikanchana) ➢ Recent advancement and research needs of environmental AMR in China (Dr. Bing Li) ➢ Recent advancement and research needs of environmental AMR in India (Dr. Manish Kumar) ➢ WHONET: A Database Software for Monitoring Antimicrobial Resistance (Dr. Henrietta Venter) *Q&A with speakers + polls for panel discussion (20 min)*	Ryo Honda
15:00-15:30	*Panel discussion* ➢ Key knowledge gaps in AP-LMICs ➢ Prior research needs **Panelists:** Speakers & Prof. Tong Zhang (China) Prof. Tushara Chaminda (Sri Lanka) Dr. Prasert Makkeaw (Thailand) Dr. Sulfikar (Indonesia) Dr. Muhammad Usman Zaheer, (FAORAP)	Ryo Honda/ Bing Li
15:30-16:00	Break	

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<tr><td>16:00-16:15</td><td><u>Part II: Regional Guidelines for AMR surveillance in the Animal Farm Environment</u>

Overview of the guidelines, development process, contents and next steps</td><td>Jutanat Srisamran/

Usman Zaheer</td></tr>
<tr><td>16:15-17:30</td><td>Group discussions
- Designing monitoring and surveillance of AMR in the animal farm environment
- Sample collection, transport and processing
- Laboratory methods for detection and antimicrobial susceptibility testing</td><td>Three groups – World cafe style with faciliators

Each group provides their feedback on assigned areas

Group rotations (10 min on each other group)</td></tr>
<tr><td>17:30-17:50</td><td>Summary of feedback from each group</td><td>Roosmarijn Luiken</td></tr>
<tr><td>17:50-18:00</td><td>Round up and Way forward.</td><td>Usman Zaheer</td></tr>
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<tr><td>What outcome do you expect to result from the workshop (impact)
(200 words max)</td><td>The expected outcome of the Part I is to promote international collaborative research activities on environmental monitoring of AMR that benefits LMICs for:
Understanding the current situations of dissemination and fate of AMR in the environment of LMICs
Initiatives of environmental monitoring strategies of AMR in LMICs
Design of data sharing platform and tools for AMR that is available and supports LMICs.

Part II will have far-reaching impacts both in the short-term and in the long- run. The consultation at EDAR7 is a part of the consultation series; next consultation will happen in the Asia Pacific region after EDAR7.
The finalized guideline will help bridge gaps in understanding AMR burden in the animal farm environment, allowing evidence-based mitigation actions to curtail the outflow of AMR from the animal environment, protecting public health and food systems and preventing contamination of broader environment.
Also, the guideline will support researchers and scientists and guide those considering setting up monitoring of AMR in the environment for individual farms or developing a local/regional or national surveillance system for environmental contamination.</td></tr>
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