APPENDIX 1.1: EXPRESSION OF INTEREST TEMPLATE

The Expression of Interest (EoI) consists of a cover letter from the Responsible Ministry (no template provided) and a brief description of the proposed intervention-implementation research project, using this template and two appendices. The description must not exceed 5 A4 pages using Verdana font size 10 and 1.5 spacing.

Date of submission: _____

Country: _____

Responsible Ministry (or Ministries):

[List name of the Responsible Ministry (or ministries) submitting the EoI and the department within the ministry responsible for the EoI.] Add more rows if necessary.

Ministry	Relevant Department/Unit

Point of contact at the Responsible Ministry (or Ministries):

[List name, job title, email-address, and phone number.] Add more rows if necessary.

Name	Job Title	Email	Phone Number

1. Describe priority antimicrobial resistance (AMR)-specific or AMR-sensitive challenges/problems.

[Describe a minimum of two AMR-specific or AMR-sensitive challenges/problems you would like to address with financial and technical support from ICARS. The aim of ICARS projects is to produce evidence-based, context-specific, cost-effective solutions to be used by the country to facilitate larger scale implementation to mitigate AMR. You can include problems from different One Health sectors. Be as specific as possible and explain why they are a priority.] Add more rows as needed with a maximum of 5 challenges.

	Challenge/Problem	Why Prioritized
1.1	Critically important antibiotics (CIAs), e.g. enrofloxacin and colistin, are extensively used in poultry production for disease prophylaxis and growth promotion.	The country is committed to promoting the prudent use of antibiotics in the animal sector while ensuring animal welfare, in line with its National Action Plan on AMR. Moreover, the government is considering banning the use of antibiotics, specifically CIAs, for growth promotion. Ensuring food safety has also been identified as a key priority of the Ministry.
1.2	High levels of antimicrobial resistance have been observed in commensal *E. coli* in broilers at slaughter, including to CIAs.	
1.3	Antibiotic residues are frequently detected in eggs sold in the capital city.	

2. Provide evidence in support of the identified AMR challenges/problems.

[Provide relevant technical and contextual evidence in support of the identified challenge/problem. Include data on AMR and antimicrobial use (AMU) relevant to this challenge. This could be from published/unpublished literature, government Ministry reports, annual reports to AMR funders such as the Fleming Fund/MPTF, submissions to WHO GLASS, WOAH AMU, FAO InFARM etc. Please include references where relevant.] Add more rows if necessary.

Challenge/ Problem	Evidence
1.1	In a nation-wide cross-sectional study conducted in 2021, commensal *E. coli* isolated from caecal samples of broilers at slaughterhouses showed that more than 30% of isolates were resistant to fluoroquinolones and 25% of the isolates carried *mcr* genes encoding resistance to colistin.
1.2	A survey on antibiotic use carried out in 2022 showed that 45% and 30% of poultry farmers were using colistin and fluoroquinolones for prophylactic purposes, respectively. One third of the farmers also used commercial medicated feed containing CIAs for growth promotion.
1.3	In 2020, a research institute sampled eggs sold in 20 informal markets in the capital city and tested for residues of the most widely used antibiotics in poultry. The study found antibiotic residues above CODEX recommended maximum residue limits for at least one of the tested antibiotics in 87% of the eggs.

3. (Using the table on page 3) Describe two or more measurable interventions that can potentially address the AMR challenges/problems described above. Indicate how these align with existing or planned AMR interventions in your country. Indicate the strategic objective of the National Action Plan (NAP) on AMR that these interventions will address. Attach the NAP as appendix 1.

NB: All ICARS projects must be measurable using SMART[1] indicators

[List 2 or more interventions that are likely to address the AMR challenges/problems through intervention[2] and/or implementation research3. Include a list of up to five references in support of the proposed interventions. While ICARS subscribes to the One Health approach to mitigating AMR, we welcome projects that address AMR in ONE or more sectors, i.e. projects do not have to be cross-sectorial.] Add more rows if necessary.

---

[1] SMART specific, measurable, achievable, realistic, time-bound

[2] Intervention research is designed to evaluate the direct impacts of treatment or preventive measures on disease in a [human or animal] study population. Study designs include randomized controlled trials, pre-post intervention study designs, non-randomized controlled trials, and quasi-experimental studies. (Reference: Thiese MS. (2014). Observational and interventional study design types; an overview. *Biochemia medica*, *24*(2), 199–210. https://doi.org/10.11613/BM.2014.022)

[3] Implementation Research is the scientific inquiry into questions concerning implementation—the act of carrying an intervention (policy, programme or practice) into effect in real world settings. Implementation research evaluates the acceptability, adaptability, adoption, appropriateness, costs, coverage, feasibility, and sustainability of interventions. (References: Peters DH, Adam T, Alonge O, Agyepong IA, Tran N. (2013). Implementation research: what it is and how to do it. *BMJ;* **347:** f6753. https://bjsm.bmj.com/lookup/doi/10.1136/bmj.f6753. + Bauer MS, Damschroder L, Hagedorn H, Smith J, Kilbourne AM. (2015). An introduction to implementation science for the non-specialist. *BMC Psychol*; **3**: 32. Available at: http://bmcpsychology.biomedcentral.com/articles/10.1186/s40359-015-0089-9.

	Challenge/Problem	Potential Intervention(s)	Alignment with Existing or Planned Interventions	Objective of NAP on AMR Addressed by Intervention
1	Critically important antibiotics (CIAs), e.g. fluoroquinolones and colistin, are extensively used in poultry production for disease prophylaxis and growth promotion. .	1.1 Establish Farmer Field Schools (FFS) to train farmers on biosecurity and other measures to reduce disease occurrence and the need for antibiotic prophylaxis	The project will create synergies with FAO as FAO is also establishing FFS in neighboring countries. Joint training of facilitators will be possible with FAO.	Objective 3 of the NAP on strengthening biosecurity for infection prevention.
	High levels of antimicrobial resistance have been observed in commensal *E. coli* in broilers at slaughter, including to CIAs.	1.2 Strengthen and enforce regulations to ban the use of antibiotics (specifically CIAs) for growth promotion focusing on feed mills	N/A	Objective 4 of the NAP on promoting responsible use of antimicrobials
	Antibiotic residues are frequently detected in eggs sold in the capital city	1.3 Develop and pilot-test a residue-free certification system for egg producers	N/A	Objective 4 of the NAP on promoting responsible use of antimicrobials

4. Describe how the Ministry will integrate learnings from each of the proposed interventions into country policies, programmes and practices to mitigate AMR.

[Describe how the Responsible Ministry envisions sustainable uptake and scale-up of successful interventions following completion of the project.]

Challenge/ Problem	Scale-Up Plan
1	The Ministry of Agriculture will: • Allocate funding to roll out FFS to other regions of the country where broiler production is high. • Implement the ban on the use of antimicrobials for growth promotion. • Make official the residue-free certification system

5. List the stakeholders you will engage to facilitate the implementation of each of the proposed interventions.

[List the relevant stakeholders with whom the project proposal will be co-developed. This includes research institutions/universities and public, private and non-governmental stakeholders.] Add more rows if necessary.

Intervention	Stakeholders	Role in the Project
1.1 Establish Farmer Field Schools (FFS) to train farmers on biosecurity to reduce the need for antibiotic prophylaxis	• Universities	• Develop project proposal/ protocol, FFS curriculum, apply for ethical approval, conduct the research
	• Department of Veterinary Services	• Support coordination with local administrative levels, and facilitate project scale-up
	• District veterinarians and extension officers	• Facilitate the weekly FFS sessions
	• Farmer associations	• Facilitate the recruitments of farmers in the FFS and future project scale-up in their association
	• FAO	• Train project staff on the FAO FFS model
	• Farmers	• Participate in the FFS and implement what they learn in their respective farms, share data
1.2 Strengthen and enforce regulations to ban the use of antibiotics (specifically CIAs) for growth promotion	• Universities	• Develop project proposal/ protocol, apply for ethical approval, conduct the research, provide scientific advice to strengthen and enforce the regulation
	• Department of Veterinary Services	• Consult relevant stakeholders, draft the regulation, enforce the

focusing on feed mills	• Feed mills and famer associations	regulation, collect and analyze feed samples • Share field insights on the most appropriate regulation and controls, share data for the research
1.3 Develop and pilot-test a residue-free certification system for egg producers	• Universities • Department of Veterinary Services • District veterinarians • District extension officers • Farmer associations • Farmers	• Develop project proposal/ protocol, apply for ethical approval, conduct the research, provide scientific advice to strengthen and enforce the regulation • Draft and endorse the certification system; develop the certification monitoring, analyze samples for residues; certify farmers • Conduct certification visits in farms and collect samples • Promote the certification system in their working area • Promote the certification system; support certified farmers to get premium selling prices • Enroll in the certification system

References

[List the references in support of 2 and 3]

Appendix 1
National Action Plan on AMR