15 March 2022

Dear Colleagues,

On behalf of the Tripartite organizations, the Food and Agricultural Organization of the United Nations (FAO), the World Organisation for Animal Health (OIE), and the World Health Organization (WHO), and the United Nations Environment Programme (UNEP), we are pleased to share with you the sixth round of the Tripartite AMR Country Self-assessment Survey (TrACSS).

To ensure effective tracking of country progress in addressing antimicrobial resistance (AMR), we would urge the national AMR focal points in all countries to fully engage all the relevant sectors to help complete the questionnaire. It is also an opportunity to convene a meeting of the national Multisectoral Coordination Group on AMR to assess national progress and provide a consolidated response to the survey that is approved by all the relevant sectors.

Despite the continued challenges faced in due to the COVID-19 pandemic, 163 countries responded to last year's survey; the highest response rate of all previous years. We thank all of you for your strong commitment and support for completing and submitting information on the implementation of the AMR national action plans through TrACSS.

We seek your continued support in completing and submitting responses to the sixth round of TrACSS. The data from TrACSS will contribute to the monitoring of various multisectoral indicators of the Tripartite monitoring and evaluation framework[1] of the Global Action Plan on AMR.

We request you to submit one consolidated country response coordinated by the national AMR focal point by the **deadline of 31 May 2022**. For any additional questions or clarifications, or for support regarding the questionnaire, please write to: tracss@who.int. The results of the survey, including country reports, will be available at https://amrcountryprogress.org/.

Various tools and guidance documents developed by the Tripartite relevant to each question have been included in the ANNEX to the accompanying guidance note. After five rounds of TrACSS, the process and content was reviewed extensively and revisions were made accordingly. The guidance note includes more details on the changes made and the rationale.

The Tripartite organizations' engagement with UNEP on AMR has culminated in UNEP officially becoming a member of the Tripartite and UNEP Joint Secretariat on AMR in January 2022. The collaboration aims to strengthen the integration of environmental aspects of AMR into joint work. This year UNEP has been engaged in drafting the questions related to the environment. We foresee that this collaboration will be strengthened further in the coming years.

[1] https://www.who.int/publications/i/item/monitoring-and-evaluation-of-the-global-action-plan-on-antimicrobial-resistance

We once again thank you for your efforts to implement and monitor multisectoral national action plans on AMR in your country. Through our joint efforts we can help address one of the greatest challenges to human and animal health, food security, environment, livelihoods, and economic growth, and that impacts a number of Sustainable Development Goals.

Sincerely,

Ms Maria Helena M.Q. Semedo Deputy Director-General Climate and Natural Resources **Food and Agricultural Organization of the United Nations – Headquarters**	Dr Montserrat Arroyo Kuribrena Deputy Director General International Standards and Science **World Organisation for Animal Health - Headquarters**	Dr Hannan Balkhy Assistant Director-General AMR Division **World Health Organization – Headquarters**	Ms. Sheila Aggarwal-Khan Director Economy Division **United Nations Environment Programme - Headquarters**

Contents

Tripartite AMR Country Self-assessment Survey (TrACSS)

Deadline for Submission: 30 June, 2022

Version 6.0

Introduction

The Global Action Plan on Antimicrobial Resistance (AMR)[2] was adopted in 2015 by all countries through decisions in the World Health Assembly, the Food and Agriculture Organization of the United Nations (FAO) Governing Conference and the World Assembly of World Organisation for Animal Health (OIE) Delegates. Countries agreed to have a national action plan on AMR that is consistent with the Global Action Plan, and to implement relevant policies and plans to prevent, control and monitor AMR. To monitor country progress in the implementation of the national actions plans, an annual Tripartite AMR country self-assessment survey (TrACSS) has been jointly administered by FAO, OIE and WHO since 2016.

The results of the previous five rounds of country self-assessment surveys (2016/17, 2017/18, 2018/19, 2019/2020, 2020/2021) are available at https://amrcountryprogress.org/

Process of completing the questionnaire

Information on the process for completing the questionnaire is available in the Guidance Note: (It is important that countries involve a multi-sectoral group in assessing national progress and provide consolidated responses agreed by all. Many countries have found that the process of completing the questionnaire is a useful review of progress for the national action plan (NAP) implementation team.

Each country is asked to submit one official response, validated by all involved sectors, which summarises national progress. The national response should be submitted using the online questionnaire. One access key will be sent through WHO to the Ministry of Health, to ensure only one version of the questionnaire is submitted per country.

Focal points from FAO and OIE in the countries will also receive a soft copy of the questionnaire to facilitate the completion of relevant sections of the questionnaire and to coordinate closely with the national AMR focal point to ensure they are accurately reflected in the final submission.

Responses are requested by 30 June 2022. Data will be analyzed and published in late 2022.

Structure of the questionnaire

The structure of the questionnaire has been changed significantly this year, to ensure that facilitate completion of questionnaire by different sectors. The responses need to be finally consolidated and validated by the AMR focal point or multisector coordination group. Previously, the questions were grouped by GAP strategic objectives. This year, while the structure still follows the order of the strategic objectives, sections are divided by sector, namely

[2] WHO, 2015, http://www.who.int/antimicrobial-resistance/publications/global-action-plan/en/. The Global Action Plan was developed by WHO with the support of FAO and OIE.

- Questions relevant to multiple sectors
- Questions relevant to human health
- Questions relevant to animal health
- Questions relevant to food and agriculture
- Questions relevant to environment sector

The questionnaire still starts off with section one which requests key contact details. The final section asks if relevant sectors were involved and focal point details of those involved in completing the survey. Strategic objective 5 of the global action plan is equally important, but this data will be collected through other channels.

Countries that have only recently started to develop their response to AMR may not be able to respond to all the questions; partial responses are acceptable. In this case, we would encourage you to please complete the mandatory questions, and any other questions that you can respond to and then submit your Country response. If the response needs to be amended after submission, please contact tracss@who.int. **We also request you, where feasible, to provide links to national documents, reports, legislations and policies. You are also invited to add additional comments in some sections.**

Responses will only be accepted via the unique online link provided to each national AMR focal point.

The questionnaire was developed jointly between WHO, FAO and OIE, with WHO coordinating this annual global monitoring process. WHO will act as liaison point with FAO and OIE at global, regional and national levels. If there are questions on the process or the questionnaire, please contact Pravarsha Prakash in WHO at tracss@who.int.

Questions marked with * are mandatory.

Section I: Contact information

(This section will not be published publicly)

ATTENTION: Please involve the AMR multi-sectoral group and all relevant sectors to assess national progress and provide a consolidated response that is agreed by all. Many countries have found that the process of completing this questionnaire is a useful mechanism for national authorities to convene a meeting of all relevant sectors, and review progress in the implementation of their national action plan (NAP) on AMR. **Each country is asked to submit one official response, validated by all involved sectors, which summarises national progress.**

Name of country* …… **Date of completion** ……..

1.1 Name and email of-existing AMR focal points for relevant sectors:

Human Health:

Name……Email……

Terrestrial Animal Health:

Name……Email……

Aquatic Animal Health: Name

Name……Email……

Plant Health:

Name……Email……

Food Production:

Name……Email……

Food Safety:

Name……Email……

Environment:

Name……Email……

Animal Production (including feed):

Name……Email……

1.2 Name and email of AMR Focal point in WHO country or regional office

Name……Email……..

1.3 Name and email of AMR Focal Point in FAO country or regional office

Name……Email……..

1.4 Name and email of OIE National Focal Point on veterinary products

Name……Email……..

Section II Questions which are multisector in nature

Questions marked with * are mandatory.

Please select the rating (A-E) for each question that most closely matches the country situation. Please note that for each question, higher ratings are expected to have achieved the progress level covered in lower ratings (e.g. countries selecting "D" should have achieved progress listed in both "B" and "C" as well as "D"). For questions covering multiple sectors, please select the appropriate rating for each sector separately, as indicated.

Multi-sectoral approach to addressing AMR*

Please select one rating that most closely matches the country situation.

		2.1 Multi-sector and One Health collaboration/coordination[3]*
O	**A**	No formal multi-sectoral governance or coordination mechanism on AMR exists.
O	**B**	Multi-sectoral coordination mechanism on AMR established with Government leadership.
O	**C**	Formalized Multisector coordination mechanism with technical working groups established with clear terms of reference, regular meetings, and funding for working group(s) with activities and reporting/accountability arrangements defined.
O	**D**	Joint working on issues including agreement on common objectives.
O	**E**	Integrated approaches used to implement the national AMR action plan with relevant data and lessons learned from all sectors used to adapt implementation of the action plan.

2.2 Which sectors are actively involved in the multisector coordination mechanism? (multiple choice) *

- Human Health
- Terrestrial Animal Health
- Aquatic Animal Health
- Plant Health
- Food Production
- Food Safety
- Environment
- Other, please specify …….
- Other, please specify …….
- Other, please specify …….

[3] https://www.who.int/antimicrobial-resistance/publications/workingpaper1multisectoralcoordinationAMR/en/

Country progress with development of a national action plan on antimicrobial resistance (AMR)

Please select one rating that most closely matches the country situation.

2.3 Country progress with development of a national action plan on AMR*[4]

O	**A**	No national AMR action plan or plan under development.
O	**B**	National AMR action plan developed.
O	**C**	National AMR action plan approved by government and is being implemented.
O	**D**	National AMR action plan has costed and budgeted operational plan and has monitoring mechanism in place.
O	**E**	Financial provision for the National AMR action plan implementation is included in the national plans and budgets.

2.3.a If the duration of national AMR plan has/is about to expire, is the country in the process of revising the national AMR action plan or developing a new one?	
O	Yes
O	No

2.3 b Does the country have a monitoring and evaluation plan for the national AMR action plan? *	
O	Yes
O	No

If yes, answer below

2.3.c Is there a focal point or specific working group responsible for the monitoring and evaluation of the implementation of the national AMR action plan?	
O	Yes
O	No

2.3.d Is data for the indicators as defined in the monitoring and evaluation plan for the national AMR action plan collected regularly across all relevant sectors?	
O	Yes
O	No

2.3.e Do you have adequate technical capacity, resources and established systems in the country to collect data across all relevant sectors?	
O	Yes
O	No

2.3.f Are relevant data disaggregated by sex, geographic location, income, etc.?	
O	Yes
O	No

[4] https://www.who.int/antimicrobial-resistance/national-action-plans/manual/en/

2.3.g Is the data analysed and used by the AMR multisector coordination mechanism for decision making across all relevant sectors and to advocate for policy changes and allocation of adequate resources?	
O	Yes
O	No

Information on the use of data from TrACSS at country level *

2.4.a Does the multisector coordination mechanism meet to discuss the response to the TrACSS questionnaire before submission?	
O	Yes
O	No

2.4.b Does the multisector coordination mechanism review current and previous year data from TrACSS as a way to monitor progress of AMR national action plan implementation?	
O	Yes
O	No

2.5 If you wish to provide a status update on the development and/or delivery of your national AMR action plan. Please provide comments or links here:

……

2.6 Is your country's national planning on AMR integrated with other existing action plans or, strategies?*

- No
- Yes.

If yes, please select the relevant item (mark all that are relevant):

- One Health Strategy or One Health mechanism
- Water, Sanitation and Hygiene (WASH)
- National health sector plan
- National action plan on health security
- Climate change and environmental planning
- National development plans; United Nations Sustainable Development Coorporation Framework (UNSDCF)
- National Food Safety strategy and policies
- National Agriculture development plans and policies
- Other, if other please specify

  ……

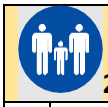
2.7 How has COVID-19 pandemic and its national response, either positively or negatively, impacted the AMR National Action Plan implementation? Please select the relevant item (multiple choice)? *

- **No impact**
- **Positive impact:** For example, Better infection control measures; better public understanding of bacterial vs viral infections and how they should be treated; better biosecurity measures noted in farms; widespread adoption of animal health plans by farmers; higher adoption of antimicrobial stewardship guidelines by antimicrobial users (veterinarians, veterinary paraprofessionals,, animal health technicians, farmers); increased awareness about AMR and misuse of antimicrobials; improved management of supply chains for medicines; Improved access to laboratory supplies and to laboratory facilities
- **Negative impact: Governance and administrative impacts**: For example: AMR NAP Committee meetings deferred; reduced government resourcing for addressing AMR available; prioritization of COVID19 response; staff deputized to work on COVID-19 response,
- **Negative impact: Operational impacts**: For example: awareness campaigns deferred; monitoring and data collection activities impacted; technical capacity building activities deferred; planned technical activities postponed; increased antibiotics use from human disease burden; increased use of antibiotics on the animal health side due to increased burden of disease; lack of access to veterinary services; disruption on disease prevention and control programs; regulations on antibiotic consumption and use not enforced.
- **Other positive or negative impact**: Please specify

……

2.8 If you have published your AMR national action plan, please upload here……
If you wish to share a link to the AMR national action plan, please insert here……
Or, if you wish to share via email, please send to tracss@who.int.

Country legislation on antimicrobial use



2.8.1 Country **has laws or regulations** on prescription and sale of antimicrobials, for human use.*

O	Yes
O	No

2.8.2 Country **has laws or regulations** on prescription and sale of antimicrobials for terrestrial animal use.*

O	Yes
O	No

	2.8.3 Country **has laws or regulations** on prescription and sale of antimicrobials for aquatic animals.*
O	Yes
O	No

	2.8.4 Country **has laws or regulations** on prescription and sale of medicated feed .*
O	Yes for terrestrial animals only
O	Yes for aquatic animals only
O	Yes for both terrestrial and aquatic animals
O	No

	2.8.5 Country **has laws or regulations** that prohibits the use of antibiotics for growth promotion in terrestrial animals in the absence of risk analysis.*
O	Yes
O	No

	2.8.6 Country **has legislation** on the registration and use of applicable pesticides with antimicrobial effects, such as bactericides and fungicides used in plant production.*
O	Yes
O	No

If you wish to share the relevant legislation, please upload here…….
If you wish to share a link to the relevant legislation, please insert here……
Or, if you wish to share via email, please send to tracss@who.int.

Country progress on Strategic Objective 1: Improve awareness and understanding of AMR through effective communication, education and training.

Please select one rating that most closely matches the country situation.

		 **2.9 Raising awareness and understanding of AMR risks and response *[5]**
O	**A**	No awareness-raising activities on risks of antimicrobial resistance.
O	**B**	Some activities to raise awareness about risks of antimicrobial resistance and actions that address it.
O	**C**	Some awareness activities at local and/or sub-national level about risks of antimicrobial resistance and actions to address it, targeting some but not all relevant stakeholders, based on stakeholder analysis.
O	**D**	Nationwide, government-supported antimicrobial resistance awareness raising campaign targeting all or the majority of priority stakeholder groups, , utilizing targeted messaging accordingly within sectors.
O	**E**	Routine Targeted, nationwide government-supported campaign implemented to raise awareness of priority stakeholders across sectors, with regular monitoring.

2.9.1 For the level selected above, please indicate the extent of involvement of the sectors below.

- Human Health:
  - ☐ this sector is a main focus of campaign
  - ☐ some activities done in this sector
  - ☐ this sector not involved
- Terrestrial Animal Health
  - ☐ this sector is a main focus of campaign,
  - ☐ some activities done in this sector
  - ☐ this sector not involved
- Aquatic Animal Health:
  - ☐ this sector is a main focus of campaign,
  - ☐ some activities done in this sector
  - ☐ this sector not involved
- Plant Health :
  - ☐ this sector is a main focus of campaign,
  - ☐ some activities done in this sector
  - ☐ this sector not involved

[5] World Antibiotic Awareness Week Toolkit | WHO: https://www.who.int/campaigns/world-antimicrobial-awareness-week/2020; https://who.canto.global/v/AntimicrobialResistance/folder/M0FHE?display=fitView&viewIndex=0&gSortingForward=false&gOrderProp=uploadDate&from=fitView

- Food Production :
  - ☐ this sector is a main focus of campaign,
  - ☐ some activities done in this sector
  - ☐ this sector not involved
- Food Safety :
  - ☐ this sector is a main focus of campaign,
  - ☐ some activities done in this sector
  - ☐ this sector not involved
- Environment
  - ☐ this sector is a main focus of campaign,
  - ☐ some activities done in this sector
  - ☐ this sector not involved

2.10 Youth education and AMR **Do school-going children and youth (primary and secondary) receive education on antimicrobial resistance, as a long-term investment in mitigating AMR?.***	
O	Yes
O	No

Country progress on <u>Strategic Objective 2</u>: Strengthen the knowledge and evidence base through surveillance and research.

 **2.11 Is the country using relevant antimicrobial consumption/use data to inform operational decision making and amend policies**	
O	No
O	Yes

If yes, for which sector/s

- Human Health
- Terrestrial Animal Health
- Aquatic Animal Health
- Plant Health
- Food Production
- Food Safety
- Environment

	2.12 Is the country using relevant antimicrobial resistance surveillance data to inform operational decision making and amend policies
O	No
O	Yes

If yes, for which sector/s

- Human Health
- Terrestrial Animal Health
- Aquatic Animal Health
- Plant Health
- Food Production
- Food Safety
- Environment

	2.13 Has the country established or starting the implementation of an Integrated Surveillance System for Antimicrobial Resistance[6]
O	No
O	Yes

If yes, involving which sector/s - Must select atleast two

- Human Health
- Terrestrial Animal Health
- Aquatic Animal Health
- Plant Health
- Food Production
- Food Safety
- Environment

[6] Guidelines of the Integrated Monitoring and Surveillance of Foodborne Antimicrobial Resistance, within the Foodborne antimicrobial resistance; COMPENDIUM OF STANDARDS https://www.fao.org/documents/card/en/c/cb8554en

Section III: Questions specific to the Human Health sector

Country progress on Strategic Objective 1: Improve awareness and understanding of AMR through effective communication, education and training.

Please select one rating that most closely matches the country situation.

3.1 Training and professional education on AMR in the human health sector[7]		
O	**A**	No training for human health workers on AMR.
O	**B**	Ad hoc AMR training courses in some human health related disciplines.
O	**C**	AMR is covered in 1) some pre-service training and in 2) some in-service training or other continuing professional development (CPD) for human health workers.
O	**D**	AMR is covered in pre-service training for all relevant cadres. In-service training or other CPD covering AMR is available for all types of human health workers nationwide.
O	**E**	AMR is systematically and formally incorporated in pre-service training curricula for all relevant human health cadres. In-service training or other CPD on AMR is taken up by relevant groups for human health nationwide, in public and private sectors.

Country progress on Strategic Objective 2: Strengthen the knowledge and evidence base through surveillance and research.

Please select one rating for each question that most closely matches the country situation.

3.2 National monitoring system for consumption and rational use of antimicrobials in human health[8]		
O	**A**	No national plan or system for monitoring use of antimicrobials.
O	**B**	System designed for surveillance of antimicrobial use, that includes monitoring national level sales or consumption of antibiotics in health services.

[7] WHO Competency Framework for Health Workers' Education and Training on Antimicrobial Resistance & Curricula Guide https://www.who.int/hrh/resources/WHO-HIS-HWF-AMR-2018.1/en/ https://apps.who.int/iris/bitstream/handle/10665/329380/9789241516358-eng.pdf

[8] For reaching level B:
GLASS methodology for surveillance of national antimicrobial consumption (https://www.who.int/publications/i/item/9789240012639)
For reaching level C:
GLASS guide for national surveillance systems for monitoring antimicrobial consumption in hospitals (https://www.who.int/publications/i/item/9789240000421)
For reaching level D:
WHO Methodology for Point Prevalence Survey on Antibiotic Use in Hospitals (https://www.who.int/publications/i/item/WHO-EMP-IAU-2018.01)

O	**C**	Total sales of antimicrobials are monitored at national level and/or some monitoring of antibiotic use at sub-national level.
O	**D**	Prescribing practices and appropriate antibiotic use are monitored in a national sample of healthcare settings.
O	**E**	On a regular basis (every year/two years) data is collected and reported on: a) Antimicrobial sales or consumption at national level for human use; and b) Antibiotic prescribing and appropriate/rational use, in a representative sample of health facilities, public and private.

3.3 National surveillance system for antimicrobial resistance (AMR) in humans

O	**A**	No capacity for generating data (antibiotic susceptibility testing and accompanying clinical and epidemiological data) and reporting on antibiotic resistance.
O	**B**	AMR data is collated locally for common[9] bacterial infections in hospitalized and community patients [10], but data collection may not use a standardized approach and lacks national coordination and/or quality management.
O	**C**	AMR data are collated nationally for common bacterial infections in hospitalized and community patients, but national coordination and standardization are lacking.
O	**D**	There is a standardized national AMR surveillance system collecting data on common bacterial infections in hospitalized and community patients, with established network of surveillance sites, designated national reference laboratory for AMR, and a national coordinating centre producing reports on AMR.
O	**E**	The national AMR surveillance system links AMR surveillance with antimicrobial consumption and/or use data for human health[11].

3.4 Assessment of capacities related to clinical bacteriology laboratory services (for patient management)

Coverage and capacity of clinical microbiology laboratories for the routine clinical diagnosis of common bacteria and critical fungi (TB/TBDR diagnosis is excluded from this assessment)

3.4.1 Coverage of bacteriology lab services

How many clinical bacteriology laboratories perform phenotypic (culture-based) isolation, identification and susceptibility testing (AST) of common bacteria in the public and private sector?

O Overall: Public sector: No:-------
O Unknown

O Private sector : No:-------
O Unknown

[9] Common: in this context refers to infections that occur most frequently in both hospitalized and community patients and constitute a majority of indications for antimicrobial treatment (such as urinary tract infections, enteric infections, bloodstream infections, respiratory infections etc). Also indicates that the spectrum is broader than e.g. epidemic-prone (notifiable) infections. Bacterial pathogens causing these infections could be called common pathogens, but just because they cause common infections and so isolated most frequently.

[10] Community patients would be in many instances outpatients or those patients within 48 hours of admission in line with GLASS definition.

[11] The term consumption refers to estimates that are derived from aggregated data sources, mainly sales data, and serves as proxy for actual use of antibiotics.

Data on antibiotic *use* refers to estimates derived from individual level data, and may be accompanied by information on patient characteristics and indication of treatment.

3.4.2 Capacity to perform AST for critically important bacteria Does the country have one or more reference lab/s performing AST/susceptibility testing for all the ***bacteria listed below*** 1. *Acinetobacter baumannii*, 2. *Pseudomonas aeruginosa*, 3. Enterobacteriaceae *E.coli*, *Klebsiella*, *Proteus* 4. *Enterococcus faecium*, 5. *Staphylococcus aureus*, 6. *Campylobacter* spp., 7. Salmonellae, *8. Neisseria gonorrhoeae* 9. *Streptococcus pneumoniae*, 10. *Haemophilus influenzae*, 11. *Shigella* spp	
O	Yes, the country has one or more reference lab/s performing susceptibility testing for ALL the 11 bacteria listed
O	Yes, the country has one or more reference lab/s performing susceptibility testing for some of the bacteria listed; Select Multiple choice O *Acinetobacter baumannii*, O *Pseudomonas aeruginosa*, O Enterobacteriaceae *E.coli, Klebsiella, Proteus* O *Enterococcus faecium*, O *Staphylococcus aureus*, O *Campylobacter* spp., O Salmonellae, O *Neisseria gonorrhoeae* O *Streptococcus pneumoniae*, O *Haemophilus influenzae*, O *Shigella* spp.
O	No, the country does not have a reference lab/s performing susceptibility testing for any of the bacteria
O	Unknown

3.4.3 Capacity to perform AST for critically important fungi Does the country have one or more National Mycology Reference Laboratory designated by ministry of health to perform identification AND susceptibility testing of *Candida and Aspergillus*?	
O	Yes for only *Candida*
O	Yes for only *Aspergillus*
O	Yes for both *Candida* and *Aspergillus*
O	No
O	Unknown

3.4.4 Continuity of services for National Reference Bacteriology/AST Laboratory Please indicate number of days of stock out disrupting the services of the National Reference Bacteriology/AST Laboratory over the last 3 months
Number of days/over the last 3 months: …….
Unknown

3.4.5 Continuity of services for clinical bacteriology labs In your country, is there a mechanism in place to report stock-outs of reagents/consumables for the diagnosis of bacterial infections and AST in clinical bacteriology laboratories in the public health sector?	
O	Yes, stock outs must be reported at the local level
O	Yes, stock outs must be reported at the national level
O	No, each bacteriology laboratory manages stockout without compulsory reporting
O	Unknown

3.4.6 Standardized AST guidelines Are standardized national or international AST guidelines[12] used by the National Reference Bacteriology/AST Laboratory (NRBL) and by clinical bacteriology laboratories at all levels of the public health system?	
O	The NRBL and *all* clinical bacteriology laboratories use standardized AST guidelines
O	The NBRL and *some* clinical bacteriology laboratories use standardized AST guidelines
O	Only the NBRL uses standardized AST guidelines
O	Neither the NRBL or the clinical bacteriology labs use standardized AST guidelines
O	Unknown

3.4.7 External Quality-assured bacteriology laboratory services Does the country have an external quality assurance EQA programme and to what extent it is implemented?	
O	A national external quality assurance (EQA) is compulsory and/or implemented in *all* bacteriology labs in the country, including the National Bacteriology Reference Laboratory
O	A national external quality assurance (EQA) system is compulsory and/or implemented in *some* bacteriology labs in the country, including the National Bacteriology Reference Laboratory (e.g. those enrolled in the national AMR surveillance system)
O	EQA is compulsory and/or implemented *only* in the in the National Bacteriology Reference Laboratory
O	EQA is not compulsory or implemented in any clinical bacteriology lab
O	Unknown

3.4.8 Does the country have developed a national list of essential in-vitro diagnostics that includes all essential AMR diagnostics?	
O	The country has the national list of essential in-vitro diagnostics that includes all essential AMR diagnostics.
O	The country has developed the national list of essential in-vitro diagnostics, but it does not include all essential AMR diagnostics.
O	The country has NOT developed the national list of essential in-vitro diagnostics yet
O	Unknown

Country progress on <u>Strategic Objective 3</u>: Reduce the incidence of infection through effective sanitation, hygiene and infection prevention measures.

Please select one rating for each question that most closely matches the country situation.

 **3.5 Infection Prevention and Control (IPC) in human health care**		
O	**A**	No national IPC programme or operational plan is available.
O	**B**	A national IPC programme or operational plan is available. National IPC and water, sanitation and hygiene (WASH) and environmental health standards exist but are not fully implemented.
O	**C**	A national IPC programme and operational plan are available and national guidelines for health care IPC are available and disseminated. Selected health facilities are implementing the guidelines, with monitoring and feedback in place.
O	**D**	National IPC programme available according to the WHO IPC core components guidelines[13] and IPC plans and

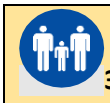
[12] International guidelines for antimicrobial susceptibility testing are: Clinical Laboratory and Standards Institute (CLSI) and European Committee on Antimicrobial Susceptibility Testing (EUCAST)

[13] WHO Guidelines on core components of IPC programmes at the national and acute health care facility level, http://www.who.int/infection-prevention/publications/core-components/en/
https://www.who.int/infection-prevention/campaigns/ipc-global-survey-2019/en/

		guidelines implemented nationwide. All health care facilities have a functional built environment (including water and sanitation), and necessary materials and equipment to perform IPC, per national standards.
O	**E**	IPC programmes are in place and functioning at national and health facility levels according to the WHO IPC core components guidelines. Compliance and effectiveness are regularly evaluated and published. Plans and guidance are updated in response to monitoring.

Country progress on Strategic Objective 4: Optimize the use of antimicrobials in human, animal and plant health.

Please select one rating for each question that most closely matches the country situation.



3.6 Optimizing antimicrobial use in human health [14]

O	**A**	No/weak national policies for appropriate antimicrobial use including availability, quality, and disposal of antimicrobials.
O	**B**	National policies promoting appropriate antimicrobial use/antimicrobial stewardship activities developed for the community and health care settings.
O	**C**	National guidelines for appropriate use of antimicrobials are available and antimicrobial stewardship programs are being implemented in some healthcare facilities.
O	**D**	National guidelines for appropriate use of antimicrobials are available and antimicrobial stewardship programs are being implemented in most health care facilities nationwide. Monitoring and surveillance results are used to inform action and to update treatment guidelines and essential medicines lists.
O	**E**	National guidelines on optimizing antibiotic use are implemented for all major syndromes and data on use is systematically fed back to prescribers.

3.7 Adoption of "AWaRe" classification of antibiotics[15] in the National Essential Medicines List

O	**A**	Country has no knowledge or information about the AWaRe classification of antibiotics.
O	**B**	Country has knowledge about the AWaRe classification of antibiotics but has not yet adopted it.
O	**C**	Country has adopted the AWaRe classification of antibiotics in their National Essential Medicines List.
O	**D**	Country has adopted the AWaRe classification of antibiotics in their National Essential Medicines List and is monitoring its antibiotic consumption and reporting it according to the AWaRe classification.
O	**E**	Country has adopted the AWaRe classification of antibiotics in their National Essential Medicines List, is monitoring its antibiotic consumption and reporting it according to the AWaRe classification and has incorporated AWaRe into its antimicrobial stewardship strategies (e.g. treatment guidelines).

3.7.1 If you wish to provide additional information on either the adoption of the AWaRe classification or your country's antibiotic stewardship strategies for human health, please insert here:

If you wish to share a copy of the National Essential Medicines List that includes the AWaRe classification of antibiotics, please upload here……
If you wish to share a link to the National Essential Medicines List that includes the AWaRe classification of antibiotics, please insert here……
Or, if you wish to share via email, please send to tracss@who.int.

[14] WHO Practical Toolkit: Antimicrobial Stewardship Programmes in Health-Care Facilities in Low- and Middle-Income Countries. See https://apps.who.int/iris/bitstream/handle/10665/329404/9789241515481-eng.pdf

[15] https://adoptaware.org/

Section IV: Questions specific to the Animal Health sector

Country progress on Strategic Objective 1: Improve awareness and understanding of AMR through effective communication, education and training.

Please select one rating that most closely matches the country situation.

4.1 Training and professional education on AMR in the veterinary sector[16]		
O	**A**	No training of veterinary related professionals (veterinarians and veterinary paraprofessionals) related to AMR.
O	**B**	Ad hoc AMR training courses available for veterinary related professionals.
O	**C**	AMR and prudent use of antimicrobial agents are covered in core curricula for graduating veterinarians and for veterinary paraprofessionals in some educational institutions.
O	**D**	Continuing professional training on antimicrobial resistance and antimicrobial use is available nationwide for veterinary related professionals.
O	**E**	AMR is systematically and formally incorporated in curricula for graduating veterinarians and veterinary paraprofessionals and continuing professional training is a formal requirement.

4.2 Training and professional education on AMR in the aquatic animal health sector[17]		
O	**A**	No training of aquatic animal health professionals related to AMR.
O	**B**	Ad hoc AMR training courses available for aquatic animal health professionals.
O	**C**	AMR and prudent use of antimicrobial agents are covered in core curricula for graduating aquatic animal health professionals in some educational institutions.
O	**D**	Continuing professional training on antimicrobial resistance and antimicrobial use is available nationwide for aquatic animal health professionals.
O	**E**	AMR is systematically and formally incorporated in curricula for aquatic animal health professionals and continuing professional training is a formal requirement.

[16] https://www.oie.int/en/what-we-offer/improving-veterinary-services/pvs-pathway/targeted-support/veterinary-and-veterinary-paraprofessional-education/

[17] https://www.oie.int/en/what-we-offer/improving-veterinary-services/pvs-pathway/targeted-support/veterinary-and-veterinary-paraprofessional-education/

		4.3 Progress with strengthening veterinary services
O	**A**	No systematic approach at national level to strengthening Veterinary Services.
O	**B**	Veterinary services assessed and plans developed to improve capacity, through a structured approach such as OIE Performance of Veterinary Services (PVS) Evaluation and PVS Gap Analysis missions.
O	**C**	Implementation of plan to strengthen capacity gaps in Veterinary Services underway.
O	**D**	Monitoring of Veterinary Services performance carried out regularly, e.g. through PVS Evaluation Follow Up missions.
O	**E**	Documented evidence of strong capacity in compliance with OIE standards on the quality of Veterinary Services[18].

		4.4 Progress with strengthening aquatic animal health services
O	**A**	No systematic approach at national level to strengthening aquatic animal health Services.
O	**B**	Aquatic animal health services assessed and plans developed to improve capacity, through a structured approach such as Evaluation of Performance of Aquatic Animal Health Services (PVS Evaluation (Aquatic))[19] and PVS Gap Analysis (Aquatic) missions.
O	**C**	Implementation of plan to strengthen capacity gaps in aquatic animal health Services underway.
O	**D**	Monitoring of aquatic animal health Services performance carried out regularly, e.g. through PVS Evaluation Follow Up (Aquatic) missions.
O	**E**	Documented evidence of strong capacity in compliance with OIE standards on the quality of aquatic animal health Services[20].

Country progress on <u>Strategic Objective 2</u>: Strengthen the knowledge and evidence base through surveillance and research.

Please select one rating for each question that most closely matches the country situation.

4.5 National monitoring system for antimicrobials intended to be used in animals (terrestrial and aquatic) (sales/use)

4.5 a Do you have a national plan or system in place for monitoring sales/use of antimicrobials in animals<u>?</u>	☐ Yes, terrestrial animals only ☐ Yes, aquatic animals only ☐ Yes, both aquatic and terrestrial ☐ No

[18] http://www.oie.int/index.php?id=169&L=0&htmfile=chapitre_vet_serv.htm

[19] https://www.oie.int/en/document/pvs-aquatic-tool-2021/

[20] https://www.oie.int/en/what-we-do/standards/codes-and-manuals/aquatic-code-online-access/?id=169&L=1&htmfile=chapitre_quality_aahs.htm

4.5 b: Do you submit AMU data to the OIE Database on Antimicrobial agents intended for use in animals? [21]	☐ Yes ☐ No ☐ don't know

If yes to question 4.5. b, then answer 4.6.

4.6 OIE Reporting Options for the antimicrobial use database

O	**A**	OIE Reporting Option: Baseline information On a regular basis, only baseline information is reported to the OIE
O	**B**	OIE Reporting option 1 On a regular basis, data is collected and reported to the OIE on the overall amount sold for use/used in animals by antimicrobial class, with the possibility to separate **by type of use.**
O	**C**	OIE Reporting option 2 On a regular basis, data is collected and reported to the OIE on the overall amount sold for use/used in animals by antimicrobial class, with the possibility to separate **by type of use and animal group**.
O	**D**	OIE Reporting option 3 On a regular basis, data is collected and reported to the OIE on the overall amount sold for use/used in animals by antimicrobial class, with the possibility to separate **by type of use, animal group and route of administration**.
O	**E**	Data on antimicrobials used under veterinary supervision in animals are available for individual animal species.

4.7 National surveillance system for antimicrobial resistance (AMR) in live terrestrial animals

O	**A**	There are no local or national strategies/plans for generating AMR surveillance data from animals for an AMR surveillance system.
O	**B**	National plan for AMR surveillance in place but laboratory and epidemiology capacities for generating, analysing and reporting data are lacking.
O	**C**	Some AMR data is collected at local levels but a nationally standardized approach is not used. National coordination and/or quality management is lacking.
O	**D (if selected D, move to 4.7.1)**	Priority pathogenic/ commensal bacterial species have been identified for surveillance. Data systematically collected and reported on levels of resistance in at least one of those bacterial species, involving a laboratory that follows quality management processes e.g. proficiency testing.
O	**E (if selected**	National system of AMR surveillance established for priority animal pathogens, zoonotic and commensal bacterial isolates which follows quality assurance processes in line with intergovernmental standards. Laboratories that report for AMR surveillance follow quality assurance processes.

[21] This question can be answered by the OIE Delegate or OIE Focal Point(FP) for Veterinary Products in country

	E, move to 4.7.1)	

Please answer this next question **only** if you have selected either D or E to 4.7 (check all that apply)

	4.7.1 AMR surveillance is routinely undertaken in live terrestrial animals for the following categories:
O	Terrestrial animal isolates linked to animal disease.
O	Zoonotic pathogenic bacteria (e.g. *Salmonella* spp. in terrestrial animals)
O	Commensal isolates (e.g. *E. coli* for terrestrial animals)
O	Specific resistance phenotypes (e.g. ESBL producing indicator *E. coli* obtained from healthy animals in key food producing species). Please specify below
O	If specific resistance phenotype is checked then, Please specify ……..

4.8 National surveillance system for antimicrobial resistance (AMR) in live aquatic animals

O	**A**	There are no local or national strategies/plans for generating AMR surveillance data from aquatic animals for an AMR surveillance system.
O	**B**	National plan for AMR surveillance in place but laboratory and epidemiology capacities for generating, analysing and reporting data are lacking.
O	**C**	Some AMR data is collected at local levels but a nationally standardized approach is not used. National coordination and/or quality management is lacking.
O	**D (if selected D, move to 4.8.1)**	Priority pathogenic/ commensal bacterial species have been identified for surveillance. Data systematically collected and reported on levels of resistance in at least one of those bacterial species, involving a laboratory that follows quality management processes e.g. proficiency testing.
O	**E (if selected E, move to 4.8.1)**	National system of AMR surveillance established for priority animal pathogens, zoonotic and commensal bacterial isolates which follows quality assurance processes in line with intergovernmental standards. Laboratories that report for AMR surveillance follow quality assurance processes.

Please answer this next question **only** if you have selected either D or E to 4.8 (check all that apply)

	4.8.1 AMR surveillance is routinely undertaken in live aquatic animals for the following categories:
O	Aquatic animal isolates linked to animal disease (e.g. *Aeromonas* spp.).
O	Zoonotic pathogenic bacteria (e.g. *Vibrio parahaemolyticus*)
O	Commensal isolates (e.g. non-pathogenic *Aeromonas hydrophila*)
O	Specific resistance phenotypes Specify below ……..

Country progress on Strategic Objective 3: Reduce the incidence of infection through effective sanitation, hygiene and infection prevention measures.

		4.9 Biosecurity[22] and good animal husbandry practices[23] to reduce the use of antimicrobials and minimize development and transmission of AMR in terrestrial animal production
O	**A**	No systematic efforts to improve good animal husbandry and biosecurity practices.
O	**B**	Some activities in place to develop and promote good animal husbandry and biosecurity practices.
O	**C**	National plan agreed to ensure good animal husbandry and biosecurity practices in line with international standards (e.g. OIE Terrestrial Codes, Codex Alimentarius). Nationally agreed guidance for good practices developed, adapted for implementation at local farm and food production level.
O	**D**	Nationwide implementation of plan to ensure good animal husbandry and biosecurity practices and national guidance published and disseminated.
O	**E**	Implementation of the nation-wide plan is monitored periodically.

		4.10 Biosecurity[24] and good animal husbandry practices to reduce the use of antimicrobials and minimize development and transmission of AMR in aquatic animal production
O	**A**	No systematic efforts to improve good animal husbandry and biosecurity practices.

[22] Biosecurity means a set of management and physical measures designed to reduce the risk of introduction, establishment and spread of animal diseases, infections or infestations to, from and within an animal population.

[23] Animal husbandry practices are all the measures adopted at farm level to ensure that animals are healthy and that their welfare is not compromised at any step of the rearing process until slaughter. These measures may include; provision of nutritious, safe feed and clean water, protection from poor weather, housing in animals in buildings with good ventilation and temperature control amongst others.

[24] Biosecurity means a set of management and physical measures designed to mitigate the risk of introduction of pathogenic agents into, or spread within, or release from, aquatic animal populations

O	**B**	Some activities in place to develop and promote good animal husbandry and biosecurity practices.
O	**C**	National plan agreed to ensure good animal husbandry and biosecurity practices in line with international standards (e.g. OIE Aquatic Code, Codex Alimentarius). Nationally agreed guidance for good practices developed, adapted for implementation at local farm and food production level.
O	**D**	Nationwide implementation of plan to ensure good animal husbandry and biosecurity practices. and national guidance published and disseminated.
O	**E**	Implementation of the nation-wide plan is monitored periodically.

Country progress on Strategic Objective 4: Optimize the use of antimicrobials in human, animal and plant health.

Please select one rating for each question that most closely matches the country situation.

		4.11 Optimizing antimicrobial use in terrestrial animal health
O	**A**	No national policy or legislation regarding the quality, safety and efficacy of antimicrobial products, and their distribution, sale or use.
O	**B**	National legislation covers some aspects of national manufacture, import, marketing authorization, control of safety, quality and efficacy and distribution of antimicrobial products.
O	**C**	National legislation covers all aspects of national manufacture, import, marketing authorization, control of safety, quality and efficacy and distribution of antimicrobial products.
O	**D**	The national regulatory framework[25] for antimicrobial products incorporates all the elements included in the related international standards on responsible and prudent use of antimicrobials (e.g. OIE Terrestrial Animal Health Codes, Codex Alimentarius) according to animal species and/or production sector. [26]
O	**E**	Enforcement processes and control are in place to ensure compliance with legislation.

		4.12 Optimizing antimicrobial use in aquatic animal health
O	**A**	No national policy or legislation regarding the quality, safety and efficacy of antimicrobial products, and their distribution, sale or use.
O	**B**	National legislation covers some aspects of national manufacture, import, marketing authorization, control of safety, quality and efficacy and distribution of antimicrobial products.
O	**C**	National legislation covers all aspects of national manufacture, import, marketing authorization, control of safety, quality and efficacy and distribution of antimicrobial products.
O	**D**	The national regulatory framework[27] for antimicrobial products incorporates all the elements included in the related international standards on responsible and prudent use of antimicrobials[28] (e.g. OIE Aquatic Animal Health Code, Codex Alimentarius) according to animal species and/or production sector.
O	**E**	Enforcement processes and control are in place to ensure compliance with legislation.

[25] Including legislation, standards, guidelines and other regulatory instruments

[26] OIE: Responsible and prudent use of antimicrobial agents in veterinary medicine
https://www.oie.int/index.php?id=169&L=0&htmfile=chapitre_antibio_use.htm
https://www.oie.int/index.php?id=171&L=0&htmfile=chapitre_antibio_resp_prudent_use.htm

[27] Including legislation, standards, guidelines and other regulatory instruments

[28] https://www.oie.int/en/what-we-do/standards/codes-and-manuals/aquatic-code-online-access/?id=169&L=1&htmfile=chapitre_antibio_resp_prudent_use.htm

Section V: Questions specific to the food and agriculture sectors

Country progress on <u>Strategic Objective 1</u>: Improve awareness and understanding of AMR through effective communication, education and training.

5.1 Training and professional education on AMR provided to the agriculture (animal and plant), food production, food safety and the environment sectors

O	**A**	No training provision on AMR for key stakeholders, e.g. agricultural extension workers, farmers, food safety officers, food and feed processors and retailers, environmental specialists.
O	**B**	Tailored ad hoc AMR training courses available for at least two groups of key stakeholders.
O	**C**	Tailored ad hoc AMR training courses are available for all or the majority of key stakeholders.
O	**D**	Tailored AMR training courses are routinely available nationwide for all key stakeholders and completion of training is a formal requirement for at least two groups of key stakeholders.
O	**E**	Tailored AMR training courses are routinely available nationwide and completion of training is a formal requirement for all key stakeholders.

5.1.1 If you wish to add additional comments on training/professional education for specific sectors (agriculture, food production, food safety, environment), please insert here:

Country progress on <u>Strategic Objective 2</u>: Strengthen the knowledge and evidence base through surveillance and research.

Please select one rating for each question that most closely matches the country situation.

5.2 National monitoring system for antimicrobial- pesticide use in plant production including bactericides and fungicides

O	No national plan or system for monitoring use of pesticides including antimicrobial pesticides such as bactericides and fungicides[29].
O	National plan or system under development for monitoring amount of pesticides used including antimicrobial pesticides applied such as bactericides and fungicides.
O	National plan or system in place to collect data[30] and report on the amount of pesticides sold/used nationally, including including antimicrobial pesticides such as bactericides and fungicides.

If you have additional comments, please insert here
……

[29] Pesticides applied to plants include bactericides and fungicides, which may impact development of resistance in bacteria on plants or in the surrounding environment. The impact this has in respect to the overall burden of pesticide resistance, contribution to AMR and impact on human and animal health, and indeed on our ability to treat plant diseases, is an important area of research. Note that the terminology commonly used for chemicals or products in plant health varies from that applied in animal and human health, as reflected in the wording of this question.

[30] Pesticide data is disaggregated by class of active ingredient and by the plant variety/species it is used for.

		5.3 National surveillance system for antimicrobial resistance (AMR) in food (terrestrial and aquatic animal and plant origin)
O	**A**	No national plan for an AMR surveillance system.
O	**B**	National plan for AMR surveillance in place but capacity (including laboratory and reporting) is lacking.
O	**C**	Some AMR data is collected - but a standardized approach is not used. National coordination and/or quality management is lacking.
O	**D [If selected move to 5.3]**	Priority food borne pathogenic/ indicator bacterial species have been identified for surveillance. Data systematically collected and reported on levels of resistance in at least one of those bacterial species, involving a laboratory that follows quality management processes e.g. proficiency testing.
O	**E [If selected move to 5.3]**	National system of AMR surveillance established for priority foodborne pathogens and/or relevant indicator bacteria which follows quality assurance processes in line with intergovernmental standards. Laboratories that report for AMR surveillance follow quality assurance processes.

Please answer this next question **only** if you have selected either D or E to 5.3

		5.3.1 AMR surveillance is systematically undertaken in food (terrestrial and aquatic animal and plant origin) in the following categories:
A	**Food borne pathogenic bacteria (e.g.** *Salmonella* spp., *Campylobacter* spp.)	Terrestrial animal origin: ☐ yes ☐ no Aquatic animal origin: ☐ yes ☐ no Plant origin: ☐ yes ☐ no
B	**Indicator bacteria** *(e.g. E.coli, Enterococcus* spp.*)*	Terrestrial animal origin: ☐ yes ☐ no

		Aquatic animal origin: ☐ yes ☐ no Plant origin: ☐ yes ☐ no

5.4 National AMR Laboratory network in animal health and food safety sectors+

+includes laboratories that process samples from food producing terrestrial and aquatic animals and from food; countries which also have a national programme for AMR surveillance in plant health and/or the environment should include these laboratories too.

a) Effective integration of laboratories in the AMR surveillance in the animal health and food safety sectors		
O	**A**	Information not available.
O	**B**	Laboratories perform antimicrobial susceptibility testing (AST) for own purposes and are not included in the national AMR surveillance system.
O	**C**	Some laboratories performing AST are integrated in the national AMR surveillance system.
O	**D**	All laboratories performing AST are integrated in the AMR surveillance system but the role should be better formalized and the network better developed.
O	**E**	All laboratories performing AST are integrated in the national AMR surveillance system, have a clear position, and are linked to a national network coordinated by a National Reference Laboratory.
b) Level of the standardization and harmonization of procedures among laboratories included in the AMR surveillance system in the animal health and food safety sectors		
O	**A**	Information not available.
O	**B**	No standardized national AST guidelines are in place or less than 30% laboratories follow the same AST guidelines.
O	**C**	Between 30% to 79% of laboratories follow the same AST guidelines.
O	**D**	Between 80% and < 100% of laboratories use the same AST guidelines.
O	**E**	100% of laboratories use the same AST guidelines.
c) Relevance of diagnostic (bacteriology) techniques used by laboratories included in the AMR surveillance system in the animal health and food safety sectors		
O	**A**	Information not available.
O	**B**	AST, bacterial isolation and identification protocols are not relevant considering the national AMR surveillance objectives.
O	**C**	Major modifications in the AST, bacterial isolation and identification protocols used are required to improve their adaptation to national AMR surveillance objectives.
O	**D**	Minor modifications in the AST, bacterial isolation and identification protocols used would improve their adaptation to the national AMR surveillance objectives.
O	**E**	AST, bacterial isolation and identification protocols are perfectly suited to the national AMR surveillance objectives.
d) Technical level of data management of the laboratory network in the AMR surveillance system in the animal health and food safety sectors		
O	**A**	Information not available.
O	**B**	AST data are handled manually, or AST data management is not computerized in all laboratories of the network and/or there are problems in the recording of the samples and their traceability along the analysis chain.
O	**C**	Most laboratories of the network use computers to manage part of their data but important improvements in the

		system are required.
O	**D**	Some minor improvements are required in some laboratories of the network to improve the computerized management of AMR laboratory data (sample input procedures, sample storage information, computerized transmission of data, etc.…).
O	**E**	All laboratories use ongoing optimal data management (e.g. samples and test results are identified using a complete computerized management system covering each step in the analysis chain, including the storage of epidemiological information, data validation protocol and the computerized transmission of results, conforming perfectly to the requirements of the national AMR surveillance system).

Country progress on <u>Strategic Objective 3</u>: Reduce the incidence of infection through effective sanitation, hygiene and infection prevention measures.

Please select one rating for each question that most closely matches the country situation.

		5.5 Good manufacturing and hygiene practices to reduce the development and transmission of AMR in food processing
O	**A**	No systematic efforts to improve good manufacturing (GMP) and hygiene practices (GHP).
O	**B**	Some activities in place to develop and promote good manufacturing (GMP) and hygiene practices (GHP).
O	**C**	National plan agreed to ensure good manufacturing (GMP) and hygiene practices (GHP) in line with international standards (e.g. Codex Alimentarius). Nationally agreed guidance for good practices developed, and adapted for implementation according to local food processing approaches.
O	**D**	Nationwide implementation of plan to ensure good manufacturing (GMP) and hygiene practices (GHP) and national guidance published and disseminated.
O	**E**	Implementation of the nation-wide plan is monitored periodically.

Country progress on <u>Strategic Objective 4</u>: Optimize the use of antimicrobials in human, animal and plant health.

Please select one rating for each question that most closely matches the country situation.

		5.6 Optimizing antimicrobial pesticide such as bactericides and fungicides use in plant production[31]
O	**A**	No national policy or legislation regarding the quality, safety and efficacy of pesticides including antimicrobial pesticides such as bactericides and fungicides and their distribution, sale or use.
O	**B**	National legislation covers some aspects of national manufacture, import, marketing authorization, control of safety, quality and efficacy and distribution of pesticides including antimicrobial pesticides such as bactericides and fungicides.
O	**C**	National legislation covers all aspects of national manufacture, import, marketing authorization, control of safety, quality and efficacy and distribution of pesticides including antimicrobial pesticides such as bactericides and fungicides.
O	**D**	The national regulatory framework for antimicrobial pesticides such as bactericides and fungicides incorporate all

[31] http://www.fao.org/agriculture/crops/thematic-sitemap/theme/pests/ipm/en/

		the elements in the related international standards on responsible and prudent use according to plant type/species.
O	**E**	Enforcement processes and control are in place to ensure compliance with legislation on use of antimicrobial pesticides such as bactericides and fungicides.

Section VI: Questions specific to the environment

National assessment of risks for AMR- of antimicrobial compound residues and AMR pathogens in the environment. Legislation and/or regulations and policies to prevent infections through improved WASH and prevent contamination of the environment[32] [33]

6.1 Has a national assessment of risks for residues of antimicrobial compounds and antimicrobial resistant pathogens in the environment been conducted?

☐ Yes
☐ No

If yes, then please complete the following:

	Risks for AMR spread[34] in the environment	Have risk assessments been conducted?
1	Human sewage treatment quality (including lack of basic toilets, and management of wastewater and sludge collected in sewer networks and onsite facilities such as septic tanks).	○ Yes ○ No
2	Wastewater discharges from health facilities for disposal in the environment (including lack of basic toilets and management of wastewater and sludge collected in sewer networks and from onsite sanitation such as septic tanks).	○ Yes ○ No
3	Management of solid clinical waste from health facilities to be destroyed by incineration.	○ Yes ○ No
4	Disposal of medicines, antimicrobial agents (unused, left-over product and also product containers) for human use	○ Yes ○ No
5	Disposal of medicines, antimicrobial agents (unused, left-over product and/or also product containers) for animal use	○ Yes ○ No
6	Discharges from intensive terrestrial animal production (liquid and/or solid waste)	○ Yes ○ No
7	Discharges from intensive aquatic animal production (liquid and solid waste)	○ Yes ○ No
8	Wastewater discharges from manufacturing sites for antimicrobial agents (either as Active Pharmaceutical Ingredient (API) or finished products).	○ Yes ○ No
9	Disposal of food, plant or animal products contaminated with antimicrobial residues over the MRL (maximum residue limit)	○ Yes ○ No
10	Runoff and solid waste from slaughterhouses (abattoirs), traditional markets and food processing plants.[35]	○ Yes ○ No

[32] For technical evidence and guidance on risk assessment and management actions refer to FAO/OIE/WHO *Technical brief of water sanitation, hygiene (WASH) and wastewater management to prevent infections and reduce the spread of AMR*

[33] Summary for Policymakers - Environmental dimensions of antimicrobial resistance antimicrobial_R.pdf (unep.org)

[34] AMR spread refers to both antimicrobial resistant pathogens and antimicrobial compounds and their metabolites discharged to the environment

[35] Refers to the direct release of "AMR bacteria" from the untreated wastewater of the slaughterhouses/ meat plants to the surface water.

11	Liquid and solid waste from intensive terrestrial animal production prior to use in agriculture	○ Yes ○ No
12	Liquid and solid waste from intensive aquatic animal production prior to use in agriculture	○ Yes ○ No
13	Human solid waste that may be used for agricultural purposes	○ Yes ○ No
14	Overspray, drift, and leaching following pesticide applications	○ Yes ○ No
15	Dust, drift, and leaching following fertilizer applications	○ Yes ○ No
16	Transnational and intercontinental transport and movement of food, goods, live animals and people	○ Yes ○ No
17	Storm runoff, wastewater treatment plant overflow or failure (in case of severe weather and flooding events)	○ Yes ○ No

6.2 Country has legislation and/or regulations[36] to prevent contamination of the environment with antimicrobials- antimicrobial compounds and their metabolites discharged to the environment

☐ Yes
☐ No

If yes, then please complete the following:

	Risks for AMR spread [37] in the environment	**Are there legislation and/or regulation and policies to mitigate risks?**
1	Human sewage treatment quality (including lack of basic toilets, and management of wastewater and sludge collected in sewer networks and onsite facilities such as septic tanks)	○ Yes ○ No
2	Wastewater discharges from health facilities for disposal in the environment (including lack of basic toilets and management of wastewater and sludge collected in sewer networks and from onsite sanitation such as septic tanks).	○ Yes ○ No
3	Management of solid clinical waste from health facilities to be destroyed by incineration.	○ Yes ○ No
4	Disposal of medicines, antimicrobial agents (unused, left-over product and also product containers) for human use	○ Yes ○ No
5	Disposal of medicines, antimicrobial agents (unused, left-over product and also product containers) for animal use	○ Yes ○ No

[36] Legislation and/or regulation may be AMR specific or AMR sensitive within wider water, wastewater, waste management and environmental sector policy.

[37] AMR spread refers to both AMR pathogens and AM compounds and their metabolites discharged to the environment

6	Discharges from intensive terrestrial animal production (liquid and/ or solid waste)	○ Yes ○ No
7	Discharges from intensive aquatic animal production (liquid and/ or solid waste)	○ Yes ○ No
8	Wastewater discharges from manufacturing sites for antimicrobial agents (either as Active Pharmaceutical Ingredient (API) or finished products).	○ Yes ○ No
9	Disposal of food, plant or animal products contaminated with antimicrobial residues over the MRL (maximum residue limit)	○ Yes ○ No
10	Runoff and solid waste from slaughterhouses (abattoirs), traditional markets and food processing plants.[38]	○ Yes ○ No
11	Liquid and solid waste from intensive terrestrial animal production prior to use in agriculture	○ Yes ○ No
12	Liquid and solid waste from intensive aquatic animal production prior to use in agriculture	○ Yes ○ No
13	Human solid waste that may be used for agricultural purposes	○ Yes ○ No
14	Overspray, drift, and leaching following pesticide applications	○ Yes ○ No
15	Dust, drift, and leaching following fertilizer applications	○ Yes ○ No
16	Transnational and intercontinental transport and movement of food, goods, live animals and people	○ Yes ○ No
17	Storm runoff, wastewater treatment plant overflow or failure (in case of severe weather and flooding events)	○ Yes ○ No

6.3

Is there a system for regular monitoring (passive surveillance) of antimicrobial compounds and their metabolites (or residues) and resistant bacteria or antimicrobial resistance genes (ARGs) in water quality?

- ○ No
- ○ Yes

  If Yes, check all that apply
- ○ Water used in agriculture
- ○ Water used in aquaculture
- ○ Drinking water
- ○ Recreational waters

If you wish to share the relevant legislation or risk assessments, please upload here…….

If you wish to share a link to the relevant legislation, please insert here……

Or, if you wish to share via email, please send to tracss@who.int.

[38] Refers to the direct release of "AMR bacteria" from the untreated wastewater of the slaughterhouses/ meat plants to the surface water.

Section VII : Validation questions

Please confirm which of the following sectors have been engaged in the completion of this survey

- Human Health
- Animal Health (terrestrial and aquatic)
- Plant Health
- Food Production
- Food Safety
- Environment

Details of person(s) who coordinated the national response to this self-assessment*

Name……..Title ……..Email……
Name……..Title ……..Email……
Name……..Title……..Email…….
Name……..Title ……..Email……

Name and email of AMR focal points who led the completion of the relevant sections:

Section II Multisector questions:

Name……Email……

Section III Human Health:

Name……Email……

Name……Email……

Name……Email……

Section IV Animal Health:

Name……Email……

Name……Email……

Name……Email……

Section V Food and agriculture:

Name……Email……

Name……Email……

Name……Email……

Section VI Environnent:

Name……Email……

Name……Email……

Name……Email……

COMMENTS BOX: If wish you to share additional comments or feedback on the entire questionnaire, please insert here: